

Connectedness, Awareness and Social Presence.

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Introduction

This paper discusses the concept of 'connectedness', exploring its relationship with the concepts of 'social presence' and 'awareness', and arguing that although 'social presence' and 'awareness' have received most focus in previous research, 'connectedness' is, in fact, a more fundamental concept. 'Connectedness' is potentially a key concept in the analysis of communication and the development of communication technology.

Social Presence

Short, et al., (1976) define 'social presence' as the "*degree of salience of the other person in a mediated communication and the consequent salience of their interpersonal interactions*" (p. 65). They relate 'social presence' to the concepts of 'immediacy' (Weiner and Mehrabian, 1968) and 'intimacy' (Argyle and Dean, 1965). 'Immediacy' is a measure of psychological distance; immediacy behaviours, such as nodding and smiling, "*enhance closeness to and nonverbal interaction with another*", (p. 213). Argyle and Dean (1965) used the concept of 'intimacy' in the interpretation of interpersonal interactions; the level of intimacy is expressed by verbal and non-verbal behaviour (e.g. eye contact) and is sub-consciously maintained in equilibrium at an appropriate level by the interactors. Short et al. suggest that social presence contributes to intimacy. The concepts of 'social presence', 'immediacy' and 'intimacy' are clearly related: immediacy behaviours are used to create and maintain intimacy; immediacy behaviours also enhance social presence, (Gunawardena, 1995). Danchak, et al. (2001) propose an integrated model of social presence, in which the level of intimacy is a function of bandwidth and immediacy behaviours, with additional immediacy behaviours compensating for low bandwidth.

Despite numerous alternative definitions, the concept of 'social presence' is unclear. Biocca, et al. (2001) urge clarification of the concept and classify different definitions into the three themes of 1) co-presence, co-location and mutual awareness, which all express elements of being together; 2) the experience of psychological involvement, which includes the concepts of saliency, immediacy, intimacy, and making oneself known; and 3) behavioural engagement, which refers to the behavioural interaction (e.g. immediacy behaviours) through which social presence is realised.

Not only is the concept itself unclear, but it has been used in two distinct ways: to refer to a property of a medium in mediated communication, and to refer to the perceptions, behaviour or attitudes of the participants in a mediated interaction, (Gunawardena, 1995). Short et al. (1976 p. 65) define 'social presence' in relation to a medium and describe it as an "*attitudinal dimension of the user, a 'mental set' towards the medium*" and as the "*subjective quality of the communication medium*", i.e. it refers to the users' judgement of the medium, not of the experience or of the other participant. This interpretation makes the concept useful in the analysis of different media of communications, but assumes,

that users perceive a medium to have a constant effect on the communication. Examination of Short's definition above, "*the degree of salience of the other person in a mediated communication and the consequent salience of their interpersonal interactions*", shows that although social presence may be a property of the medium, this characteristic is derived from the affect of the medium on the perceptions of the participants, and on their interpersonal interactions, and, therefore, it must *also* be, or be related to a property of that perception or interaction. Biocca et al. (2001) define 'social presence' as pertaining to the user, but also relate it to the interaction and the medium, "*It is a temporary judgment of the nature of interaction with the other, as limited or augmented by the medium.*" Novak (2001) distinguishes social presence from co-presence, arguing that the former relates to the medium and the latter refers to a psychological connection. A related issue is the conventional restriction of the concept of social presence to mediated communication, although some also use it in non-mediated interactions, (e.g. Huguet, et al.1999).

Awareness

Dourish and Bly (1992) define awareness as "*an understanding of the activities of others, which provides a context for your own activity*". The concept of 'awareness' has been used in numerous ways in the HCI and CSCW literature. Schmidt (2002) argues that 'awareness' is "*being used in increasingly contradictory ways... In fact, it is hardly a concept any longer.*" Reflection on the meaning of 'awareness' explains this; awareness is almost a simile for consciousness – its meaning is derived from the object of the awareness.

Christiansen and Maglaughlin (2003) identify 41 different awareness phrases; they classify these into four types of awareness: workplace awareness, which is knowledge of tasks *within* the virtual environment, availability awareness, which relates to the availability of people and objects, group awareness, which promotes the feeling of belonging to a group, and contextual awareness, which includes physical, social and mental context. Dourish and Bellotti (1992) define (social) awareness as the "*understanding of the activity of others, which provides a context for your own activity*" In these definitions, awareness is both a perception of the users of a system, and an aspect of a system that facilitates that perception. Awareness here is not used in the sense of having heard of, as in, 'I am aware of President Bush', nor, in the sense of thinking about someone, but in the sense of experiencing what is believed to be an external perception, whether synchronous or asynchronous. Awareness in this sense must be perceived to be synchronous or near- synchronous.

Connectedness

The need for connectedness is recognized in psychology: Adler's (1998) concept of social interest refers to an individual's attitude and relationship to society, or 'social connectedness'; this determines both success in life and mental health. In social psychology (Smith and Mackie, 2000) the pursuit of connectedness is one of the three basic motivating principles which underlie social behaviour; this fundamental need for belonging and connectedness promotes social relationships.

Communication can create a sense of connectedness or feeling of being in touch; in awareness systems this may be more important than the content of the communication. There are relatively few references to connectedness in CMC. Bradner (2001 p. 68) comments, "*these affordances (i.e. connectedness and plausible deniability) highlight important aspects of communication that impact adoption and are not part of current media theories.*" Nardi, et al., (2000, p. 79) found Instant Messenger (IM) users monitored availability of colleagues and exchanged greetings even when they did not want to exchange information; these 'awareness moments', (p. 7) "*argue for a richer notion of communication than current media theories allow. Even when no direct information exchange is taking place, people want to maintain connection with others, outside the context of specific events of information exchange*". Kuwabara et al. (2002) argue that connectedness orientated communication can be observed in conventional network communication, for example in text messages. They define 'connectedness orientated communication' as exchanges that allow people to be aware of each other and contribute to maintaining social relationships. Rettie (2003) found that the need for connectedness was the most important factor in making a choice between communication channels.

Connectedness is also mentioned indirectly in some of the mobile phone literature, for instance, Townsend (2001, p. 70) suggests that a mobile is "*a pacifier for adults – it makes you feel connected, that you are not alone in the world*". Similarly, Ling and Yttri (2002, p. 158), describe text messaging as "*a type of social interaction in which the sender and receiver share a common, through asynchronous, experience. Sending a message refreshes the contact between the two.*"; de Gournay, (2002, p 201) goes further: "*We are witnessing a 'fetishization' of communication insofar as the mobile phone, through its personalization, is used not for interaction but rather for a 'fusional' relationship with someone the user is close to*". In fact, connectedness is so much a paradigm of mobile phone usage that it relates to two recent book titles: Perpetual Contact (Katz and Aakhus, 2002) and Constant Touch, (Agar, 2003).

Discussion

The concept of 'connectedness' is related to the concept of 'social presence', but it is not equivalent. Social presence is a judgement of the perception of the other participant and/or of the medium, whereas connectedness is an emotional experience, evoked by, but independent of, the other's presence. Connectedness relates to the sense of social presence classified by Biocca et al. (2001), as psychological involvement, but does not entail perceived access to another intelligence or psychological *engagement*. IM and text messaging illustrate the difference between the social presence and connectedness. The awareness that others are online in IM conveys connectedness even when there is no message exchange; similarly, the exchange of 'goodnight' text messages creates connectedness. In awareness systems there may be virtually no social presence, i.e. little salience of the other person, and no access to their intelligence, intentions or sensory impressions, however, at the same time there may be a feeling of psychological involvement and experience of connectedness.

Ijsselstein et al. (2003, p. 927) proposes that the concepts of 'social presence' and 'connectedness' are complementary, arguing that in awareness systems the level of social

presence will be very low, but the *"sense of connectedness, the feeling of being in touch, can be strong"*. Describing the development of a connectedness scale, he suggests that connectedness includes affective benefits such as a stronger group attraction, a feeling of staying in touch, a sense of sharing, belonging and intimacy.

The interconnection between the three concepts is reflected in the use of terms such as 'presence awareness', (Tollmar et al. 1996), which is the awareness of the presence of others, and 'affective awareness' which Liechti and Ichikawa (1999, p.11) define as *"a general sense of being close to one's family and friends"*, and describe as a *"general sense of being connected"*. The analysis below explores the relationships between social presence, awareness and connectedness.

Figure 1

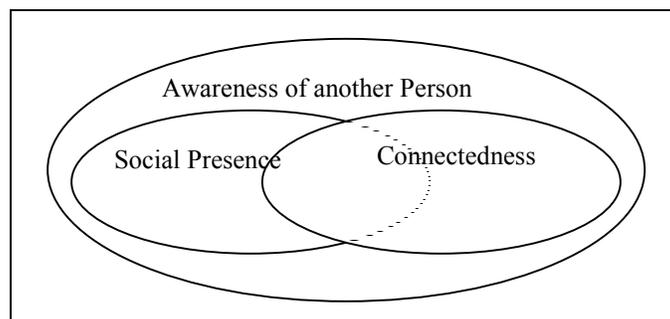
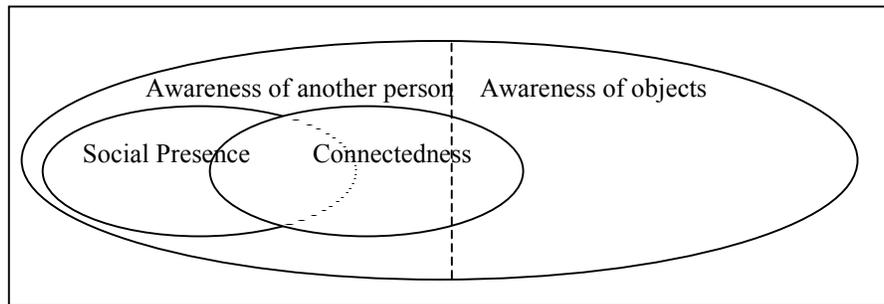


Figure 1, represents the suggested logical relationships between the three concepts. Social presence implies awareness of the other person, $SP \rightarrow AP$. However, awareness can occur without either social presence or connectedness. Although social presence and connectedness can occur together, I suggest that the perception of social presence e.g. in telemarketing, could occur without the experience of connectedness. Similarly, connectedness can occur in conditions where there is little or no social presence, e.g. in text messages. The concept of connectedness is related to awareness, in that it is often the awareness of presence that creates the experience of connectedness. It is arguable whether connectedness can occur without awareness, or whether, connectedness implies awareness of the other person, $CP \rightarrow AP$. For example, the receipt of a post card may be accompanied by a feeling of connectedness although there is no direct awareness of the other person. Markopoulos, et al. (2003) describe a system, which creates the experience of connectedness between grandparents and their grandchildren, without (synchronous) awareness. An alternative way of describing this would be to say that there is an experience of connectedness to an object rather than to a person, although the meaning embodied in the experience is derived from the other person. This is shown in Figure 2, where connectedness does *not* imply awareness of the other person, for example, a stored text message in a mobile phone evokes the experience of connectedness without awareness of the presence of that person.

Figure 2



Previous research has concentrated on social presence and awareness. However, if the experience of connectedness is a basic human need, it may be more fundamental. The concept may help to focus design of new systems, which enable connectedness without imitating face-to-face communication, allowing for devices, which facilitate intimate experience while minimising intrusiveness. Connectedness may also prove useful in understanding virtual communities and mobile communication.

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