Shared 3D interaction spaces with humans and avatars: A summary of motion capture case studies and an introduction to an experimental platform

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Abstract

Intuitively, when considering forms of technologically mediated communication, access to the visual channel makes interactional techniques available which are comparable to those used in face to face interaction. However, a common finding in the literature on mediated communication is that, whilst it has proved simple to demonstrate the advantages of face to face interaction when compared to interaction over an audio only link, the same is not true when comparing audio visual technologically mediated communication (we shall refer to this from now on as Video Mediated Communication, or VMC) with an audio only link (Anderson et al, 1997; Heath & Luff, 1997). Further to this, studies have identified that there are significant differences between VMC interaction and face to face interaction (Whittaker, 2003; Heath & Luff, 1991; Vertegaal,1997), and that crucially this is not due to technical issues; it is not the quality of the visual channel that is the cause for these differences (Whittaker & O'Conail, 1993). We hypothesise that the lack of access to a mutually accessible 3D shared space which we inhabit during face to face interaction contributes significantly when accounting for these differences. By using motion capture techniques available in the Augmented Human Interaction laboratory at Queen Mary, we are able to capture the precise three dimensional coordinates of participants' bodies. This enables us to study these 3D shared spaces in much more detail than by using approximations from video cameras (see Battersby et al, 2008 for more detail). In this talk we will present motion capture data from pilot studies to show examples which demonstrate the fundamental use of shared spaces in face to face interaction and we will introduce our avatar based platform which offers for new experimental possibilities.

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