Social VR Experimental Studies as Part of Remote VR Teaching: Two Case Studies

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1 INTRODUCTION

Remote teaching is not ideal, in particular for subjects such as virtual and augmented reality, where students could typically benefit from working in labs where they can have access to XR hardware and work as a team. However, amid the unprecedented time of social distancing, people were forced to only socialise with each other remotely. Inspired by Li et al.'s 2018 work [2], we encouraged our XR students to conduct experimental studies using social VR. Here, we describe two different studies conducted by two separate student groups, within the time of 4 weeks. Study 1 (3 students) investigated self representation, study 2 (4 students) studies the impact of interpersonal distance.

2 STUDY 1: SELF REPRESENTATION AND FEELING OF CONNECTION IN SOCIAL VR

This study investigated self-representation and the feeling of connection in social VR. According to the results from another study in understanding the effects of avatar realism in social VR [1], there was an indication that the appearance of others' avatars influenced our self-perception, and that a more realistic looking other avatar seemed to increase social presence. As shown in 1, we compared how users feel about embodying cartoon-like avatars (AltspaceVR) and realistic avatars (Spatial.io). We were interested in whether the realistic avatars would trigger a higher level of social connection for people during the experiment. A total number of 10 participants were recruited in our study (7 females, age 20-50, mean age 27.5). Each experiment was designed to take around 60 min and conducted with a group of 2 participants. All participants were advised upfront to set up their own avatars for both applications before the research took place. Their experiences were evaluated with questionnaire data. Our results indicated that there were in fact slightly more

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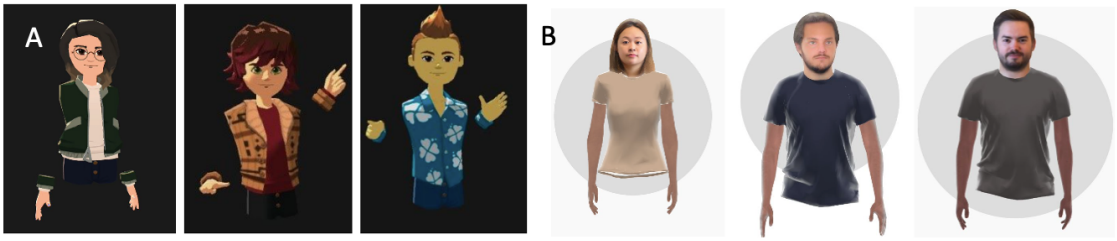

Fig. 1. Study 1: self representation. A: AltspaceVR - customized cartoon-like avatar with a relatively large head and disconnected hands; B: Spatial - Realistic looking, automatically generated avatars based on photo uploaded by users

Fig. 2. Study 2: Interpersonal Distance. A: Intimate Distance; B: Social Distance; C: two people talking; D: real-life mapping (to control the distance in VR)

connections built between participants in the experience with cartoon-like avatars. However, we think this could be because AltspaceVR allows them to customise their own avatar.

3 STUDY 2: THE IMPACT OF INTERPERSONAL DISTANCE IN SOCIAL VR

Study two addresses how a user's VR experience is affected by inter-player interactions within one's personal space and, in particular, when gender presentation is taken into consideration. As social VR continues to grow in correlation with increased VR use, more people are beginning to use it for the first time and meet one another in digital environments. However, as embodied interaction is integral to the VR experience, this means each individual inhabits that virtual space with their physical body and so continues to respond as they may in their real life experiences. This differs from more commonly used digital social platforms, wherein a user does not embody their avatar by multisensory means, therefore not needing to take matters such as their physical personal space into consideration. Thus, we have sought to consider how social dynamics are emulated in the virtual spaces of social VR platforms. Further taking into consideration the dynamics of real-life gendered interactions, we have placed a particular focus on the way avatars may sustain in representing users' gender representation and how that affects one's personal space within the context of social VR.

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