

Presence as a Sense of Place in a Computer Mediated Communication Environment

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Abstract

Presence as a phenomenon has been investigated for over 25 years. Throughout that time we have seen a substantial growth in the understanding of what it means to be present in a Computer Mediated Communication (CMC) environment. The basic questions regarding what it means to be present in such an environment have broadened over the years from technical to psychological to philosophical. Early writings explored the nature of remote manipulation (Akin, Minsky et al. 1983) and sought answers to questions of adequate display fidelity (Steuer 1995) and interface design (Zeltzer 1992). While these questions are still relevant we find that the basic nature of presence research has broadened to include questions about the psychological understanding of what it means to be “present.” This trend toward psychological comprehension has led researchers to investigate questions ranging from how we interact with others within the CMC environment (Held and Durlach 1992, Lombard and Ditton 1997, Biocca, Harms et al. 2003) to broader questions of metaphysics and the nature of environmental connection (Mantovani and Riva 1999, Riva 2002, Heeter 2003).

However, an understanding of place in a CMC environment incorporates a comprehension of space as well as a grasp of emotional affiliation and vicarious participation. It is an appreciation of how one “fits” into that environment, both physically and socially. Therefore, presence occurs when one has transcended the gap from occupying a space to being part of a place.

What is apparent is that our concept of presence is beginning to fracture into ideas regarding the different aspects. We have theories of the physical nature of the CMC environment as presence (Steuer 1995, Zeltzer 1992), the social aspect of the environment (Held and Durlach 1992, Lombard and Ditton 1997, Biocca, Harms et al. 2004) as well as the awareness of presence in the natural world (Heeter 2003, Usoh, Catena et al. 2000). In this paper we argue that presence is not so much an understanding of the space presented in a CMC environment but an understanding of how one fits within that environment. As such, presence is the understanding of the environment as a place, not just a space. To this end we present a scale to measure this new concept of presence.

Now, when constructing a new measure it is imperative to ascertain its viability. According to Cronbach and Meehl (1955) there are three steps that must be taken. The first is to articulate the concept and its interrelations, the second is to develop a means of measuring the concept and the third is to test the developed scale.

Methodology

Video games were used in this experiment for three basic reasons, the first being that they are the most advanced form of CMC environment readily available. Videogames stretch available computing resources like no other kind of application. The second is that the world is spending more and more time looking at screens for non-entertainment uses. Augmented reality and virtual reality approaches are becoming the next phase in human computer interaction. As such, a video games represent the kinds of experiences that will soon be available in every day applications. For this project a scale of presence as place was developed that reflected the elements of place as related by Rowles (2003) but that also included an understanding of the nature of CMC representation. While Lombard and Ditton (1997) indicated that presence could be the experience of non mediation it is our opinion that until that time where a CMC environment is indistinguishable from a non-mediated environment an understanding of the nature of the representation is unavoidable. To this end a scale composed of 26 items was developed with between 5 and 6 questions per element. These items were refined using the Oblivion video game and then tested using the Skyrim video game.

	Skyrim	Oblivion
General Landscape		
Cities and Towns		
Characters		

Results

	Oblivion (211)	Skyrim (125)
Average Age	20	20
Gender	59% male, 40% Female	59% Male, 40% female
Video Game Expertise		
Novice	29%	43%
Intermediate	40%	24%
Advanced	24%	25%
Professional	6%	8%
Played Game Before	36% Yes 63% No	47% Yes 52% No

Oblivion Results

A scale of 26 items was developed that encompassed five aspects of presence as place. The results were factor analyzed enforcing a minimum loading of 0.5. Two of the 26 items were removed during this process.

Scale	Question	Factor Loadings				Mean	Alpha
Physical Participation	(PP_3_01)				0.686	4.795	0.839
	(PP_3_02)				0.608	3.974	
	(PP_3_03)				0.932	4.559	
Social Participation	(SP_3_01)				0.626	3.8	0.893
	(SP_3_02)				0.648	3.951	

	(SP_3_03)					0.555	3.876	
	(SP_3_04)					0.727	3.574	
	(SP_3_05)					0.623	3.393	
Physical Orientation	(PO_3_01)	0.88					4.118	0.95
	(PO_3_02)	0.898					3.977	
	(PO_3_03)	0.949					3.937	
	(PO_3_04)	0.873					3.96	
	(PO_3_05)	0.649					3.416	
	(PO_3_06)	0.693					3.747	
Unity of Representation	(UR_3_01)			0.632			4.076	0.886
	(UR_3_02)			0.913			4.187	
	(UR_3_03)			0.796			3.999	
	(UR_3_04)			0.744			4.125	
Emotional Affiliation	(EA_3_01)		0.682				2.814	0.932
	(EA_3_02)		0.703				2.914	
	(EA_3_03)		0.937				2.505	
	(EA_3_04)		0.953				2.397	
	(EA_3_05)		0.816				2.157	
	(EA_3_06)		0.694				2.355	
Total								0.941

Skyrim results

The resulting 24 item scale was then factor analyzed using data collected from participants who played skyrim.

Scale	Question	Factor Loadings				Mean	Alpha	
Physical Participation	(PP_3_01)					0.722	4.457	0.75
	(PP_3_02)					0.514	3.506	
	(PP_3_03)					0.844	3.994	
Social Participation	(SP_3_01)		0.897				3.62	0.946
	(SP_3_02)		0.907				3.842	
	(SP_3_03)		0.885				3.705	
	(SP_3_04)		0.759				3.518	
	(SP_3_05)		0.76				3.529	
Physical Orientation	(PO_3_01)	0.92					3.859	0.963
	(PO_3_02)	0.93					3.842	
	(PO_3_03)	0.874					3.8	
	(PO_3_04)	0.913					3.854	
	(PO_3_05)	0.8					3.525	
	(PO_3_06)	0.789					3.597	
Unity of Representation	(UR_3_01)				-0.846		4.201	0.945
	(UR_3_02)				-0.923		4.223	
	(UR_3_03)				-0.719		4.132	
	(UR_3_04)				-0.868		4.364	

Emotional Affiliation	(EA_3_01)			0.677			3.2	0.945
	(EA_3_02)			0.757			3.27	
	(EA_3_03)			0.843			2.769	
	(EA_3_04)			0.9			2.649	
	(EA_3_05)			0.912			2.374	
	(EA_3_06)			0.795			2.71	
Total								0.947

Conclusions, and Next Steps

With the exception of the emotional affiliation sub scale all of the scales seem to be both robust and accurate reflection of presence as place within a CMC environment. The low mean scores for affiliation are a concern as this is a key component of being part of a place. This will need to be tested in a more advance environment. The fact that some of the items increased from Oblivion to Skyrim would indicate that this aspect is sensitive to the fidelity of the environment. It is rumored that the next release of the Elder Scrolls is a long way off still (which would be the ideal testing venue) but game design keeps advancing and perhaps a different game that has many of the same characteristics can be found in which to test. This would be one way to test if increasing fidelity indeed has an impact on the degree of affiliation one experiences.

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Keywords: *Presence, Telepresence, Social Presence, Presence as Place, Scale Development.*

Relevance to Marketing Educators, Researchers and Practitioners: As more and more of our lives are lived through video screens it is important to understand the psychological impact of these presented realities.

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