Edinburgh Napier
UNIVERSITY

ISPR 2011:

THE INTERNATIONAL SOCIETY FOR PRESENCE RESEARCH ANNUAL CONFERENCE

EDINBURGH, 26-28 OCTOBER 2011

EDITED BY PHIL TURNER

The Cyborg Habitus: Presence, Posthumanism And Mobile Technology

Julia Czaja

Temple University, USA

Abstract

This paper attempts to conceptualize a cultural perspective of presence. The phenomenon of presence has most often been measured in terms of its psychological dimension; however, I argue that a broader, cultural approach is equally valuable. Ethnographic studies of mobile communication can provide empirical evidence of the influence of culture on the experience and meaning of presence. Bourdieu's theory of habitus can be used to describe the process in which the phenomenon of presence becomes culturally embedded.

1. Introduction

New technologies and the new kinds of interactions that they allow often prompt shifts in the ways we understand ourselves. Mobile communications and the increasing pervasiveness of computers and the Internet have stimulated a subtle shift in the way scholars think about the human subject. The definitions of this new subject center on the concepts and actualities of technological hybridity and mediated experiences. As mobile devices increasingly become an integral part of our bodies and identities, our experience of physical presence and connection with one another changes. The majority of research on the concept of presence looks at the phenomenon as a psychological process. This current discussion will explore a different way of looking at presence; one that involves placing the phenomenon in context. The experience of presence has been studied and measured in relation to its physical, situational context, but not in relation to a larger, cultural context. This perspective has practical values for understanding the role of culture in the psychological as well as corporeal co-adaptation of humans and technologies of mediation. This paper is an attempt to conceptualize the occurrences of presence in a cultural context. It is also an experiment in bridging the discourses of posthumanism, cultural embodiment, and the experience of presence.

The subject that arises from the cultural context of mobile communication has been called by quite a few scholars as posthuman or cyborg [1, 2]. The value of these metaphors in describing and defining the phenomenon of presence must be critically assessed. It is important to question the usefulness of using such metaphors. The definitions of these metaphors necessarily imply that the traditional, organic term human no longer accurately describes the self. Scholars are sometimes quick to use the terms posthuman, cyborg, and transhuman to name the technologically altered human; however, there is a danger in how easily these terms simplify contemporary human experience and ignore the nuanced and variegated realities of the individual. Within this paper these terms will be used not to rigidly define a concrete being, but to describe a certain abstraction of the technologically hybrid, flexibly mediated, human subject. These terms are valuable for a cultural perspective of presence because they conceptualize the culturally constructed mediated self. They describe the singular agent formed by a culturally situated self whose sense of being and social interaction includes flexible notions of physical and social presence.

In this discussion it is valuable to first describe the concepts of mediation and how technology and human relationships are commonly theorized. A brief analysis of the hybrid environment will follow this section. The pervasive computing system coupled with the expanse of mobile devices represents the structural context of presence in culture. Lastly, and most importantly, this paper will examine the continuities and discontinuities of posthuman theory, presence, and mobile technology.

2. Presence and Mediation

Presence studies are pertinent to understanding mobile cultures. The interactive relationship humans have with these devices entails an altering of the state of being present in the physical world and in the digital world. These devices mediate our communication with an increasing seamlessness and intuitiveness. The beginning of human-computer interaction research and development hinged on the ultimate goal of blurring the boundary between user and machine [3]. Shackel [3] designates Licklider's concept of the "man-computer symbiosis" as one of the founding efforts to design a seamless interaction between humans and computers. Licklider [4]

emphasized the positive and mind expanding attributes made possible by the synthesis of the powers of the human mind with the processing powers of the computer. The explicit goal of many innovations in media technology is to design an interaction in which the physical device disappears from the user's awareness. In other words, they seek to provide a better platform for presence, so that the user and technology will converge as a single agent.

Studies and explications of presence have most frequently sought to explain the psychological phenomena associated with virtually simulated experiences. Mobile media, as well as pervasive computing environments, present an interesting case for these studies. Concepts of presence are valuable for conceptualizing mediation beyond the strictly virtual simulation. Lombard and Ditton [5] generalize the term "presence" to mean the "perceptual illusion of nonmediation" (Presence Explicated, first para.) They further distinguish six different types, some of which overlap in the mobile media environment. Of these six, both social presence and the presence associated with the integration of mobile devices into perceptions of the self are significant.

In a re-explication of presence, Lee [6] emphasizes an operationalization of presence focused primarily on the psychological aspects of it. Her reasoning for this has to do with the focus on the mechanisms of the feeling of presence in the virtual environment [6]. The problem with this view as it applies to the mobile media environment is that concept of presence is a phenomenological experience. It is an occurrence that can be seen as happening within a cultural context, beyond the purely individualistic. As Rheingold [7] and Turkle [8], as well as others, have expressed, the development of mobile media and pervasive computing has altered the societal understanding of presence on multiple levels. Being constantly and nomadically online and networked with each other is increasingly becoming a societal norm that embraces flexible states of presence. Much of the research backing the theories of presence have employed quantitative methods that attempt to measure the phenomenon; however, for research into mobile cultures and the associated experience of presence a qualitative approach may be more valuable. An ethnographic study would reveal the process and practice of experiencing the flexible states of presence as they occur in their social, phenomenological context.

Presence is a phenomenon that in part defines what has allowed the cyborg metaphor to develop. The central concept of presence involves the psychological phenomenon of being, not being, there and not there

brought on through mediation [5]. Closely related are concepts of embodiment and disembodiment. These concepts are important to incorporate into this study, because they are involved in the nature of mobile networks of communication. Mediation disembodies the emotions and ideas of an individual from their source and re-embodies them in a digital form. The illusion of continuous, uninterrupted embodiment is central to psychological phenomenon of presence. The posthuman and cyborg terms can be used for contextualizing the occurrence of presence. They describe a subject whose constituents include experiences of virtuality, non-physical existence, and technological integration. Mobile media supports the corporeal integration of communicative technologies as well as the disembodiment of self that is associated with presence.

3. Posthumans and Cyborgs

Increasingly, being in the world today includes an understanding of oneself that extends beyond the boundaries of our biological bodies. Scholars have approached this reality from a number of positions, most of which focus on metaphors of hybridity and cybernetic synthesis. Our first connection with this hybridity became evident with the proliferation of the discrete, personal computer and has evolved into a ubiquitous net of hybrid spaces and smaller, wearable mobile devices. The cyborg metaphor developed by Haraway [2] describes a technologically hybrid subject, whose existence depends on the metaphorical blurring of boundaries. Hayles [1] defines the posthuman as a similar kind of subject whose existence depends on technological integration. Though they are sometimes used interchangeably and the cyborg is often thought of as a posthuman entity, the concepts are slightly distinct. The subtle difference between the two terms is in their focus on the body and the self. The cyborg is a concept that more explicitly focuses on the state of the body as being both organic and artificial. The posthuman concept centres more on an understanding of the state of self and identity apart from physical embodiment.

Donna Haraway [2] offers the notion that amidst the inescapable fracturing of traditional definitions of the human self, integrity and wholeness is found once again through the metaphor of the cyborg. Her understanding of the posthuman primarily focuses on the coupling of distinct systems and how together they form a hybrid entity. Presence is relevant to this idea because it allows us to further explore the psychological factors involved with the coupling of systems, such as the illusion that

there is no coupling, just human agency. Haraway's [2] cyborg depends on the blurring of multiple boundaries. The first she describes is the obfuscating of the boundary between humans and animals. The second is the blurring of the boundary between human and machine. The third is the blurring of the "boundary between physical and non-physical" ([2], p. 153). This last category can also be understood as the boundary between online and offline selves, because at the core, these two attributes are the difference between being in a place virtually (non-physically) and being in a space physically.

Hayles [1] defines the posthuman not as an inevitable replacement for the human, as the term linguistically suggests; rather, it is a new conception of what it means to be human [1]. This concept hinges on an understanding that the body itself is a "prosthesis" for the mind ([1], p. 3). It emphasizes "informational pattern over material instantiation" ([1], p. 2). This last part of the posthuman description is most salient for a cultural understanding of presence. In posthuman thought, identity is disembodied, so being there in mediated space and time might be as psychologically natural as non-mediated experience.

Within the discussion of the occurrences of presence and the culture of presence, both terms are valuable. The term cyborg emphasizes hybridity without obliterating the historical and culturally constructed body. The cinematic characteristics of the term cyborg are important, because they convey the influence of the narratives of the culture industry on the perception of self. The term embodies the cultural narratives that encourage a hybrid self. This process contributes to the substantiation of the cultural contexts of presence. The posthuman concept describes not only a subject whose self-perception "can be seamlessly articulated with intelligent machines" ([1], p. 3), but also whose sense of being is at least partially independent of concrete embodiment. The occurrence of presence depends on the psychological disembodiment and virtual embodiment of self. In this sense, presence is a virtuosic talent of both the posthuman and the cyborg.

Biocca [9] conceptualizes the evolution of the relationship between humans and computers as "progressive embodiment" (Minding the Body, first para.). This concept describes the increasing adaptation of the interface to the body and the body to the interface. The result of this process is the dehumanization of the subject, which Biocca terms, the "cyborg's dilemma." This concept is valuable for the present discussion because it describes an outcome of the progressive expansion of mobile computers in everyday life that will result in the redefinition of the human self. Biocca [9] states, "the relationship of a human to an interface can be one of a

body to an environment, or of one brain to another through a kind of conversation" (Embodiment, second para.). Here we might find again the metaphorical blurring of boundaries made famous by Haraway's cyborg. Many scholars have noted the experience of the cell phone as an augmentation of the body. It is carried in a coupled relationship with the body. Its use centers on the body and its senses, whether it is the visual screen, the speaker, or the haptic feedback of buttons. Its constant connection to the mind/body makes it an increasingly seamless portal to acts of telepresence. It is this coupling, this convergence of technological mediation and the mind/body that most clearly evokes the posthuman and cyborg metaphors. As Biocca's "progressive embodiment" and Hayles' posthuman describe the evolution of a new individual self in terms of technological integration, Haraway's cyborg metaphor describes the socio- technical, culturally constructed hybrid self. These understandings of the mediated subject contribute a conceptualization of the hybrid self which exists and interacts within the mediated environment. These concepts are central to a cultural perspective of presence because they describe the mediated self in the socio-technical context of mediation.

4. The Cultural Spaces of Mediation

The pervasive computing environment that involves both the integration of computers into everyday spaces as well as the personal devices that connect with this hybrid surrounding can be viewed as the context that supports the cultural process of presence. The culture of mobile communication includes the spaces, relationships, and practices of interacting through and with these technologies. The real life psychological experience of presence does not occur within a vacuum as a distinctly singular act. Presence has often been studied quantitatively

through experiment. This approach is valuable for discovering certain, specific aspects of presence experience; however, this procedure necessarily removes the phenomenon from its natural context. The phenomenon occurs in everyday life and within everyday mediated experiences. The social presence associated with mobile communication occurs through a social web of practice and ritual. This can be seen in the ways individuals carry their phones, interact with their phones in habitual ways and follow certain practiced protocols of mediated social interaction.

Technologically mediated environments have been theorized in many different ways. Katz [10] created the term "apparatgeist" (p. 15) to describe the contexts of

mobile technology use. Apparatgeist denotes the pattern and process of technological evolution and adaptation in a social and historical context ([11], p. 307). The theory focuses on the social and habitual practices of using mobile technology, but it does not address the alterations of perceptions of presence and embodiment as cultural phenomena. Turkle [8], with a more normative concern, coins the term "realtechnik" (p. 243) to conceptualize the uses and implications of new technologies in culture. Her aim is to not just conceptualize the enchanting possibilities of technology, but to critically analyze its actual, social, and personal influences. Looking at the acts of telepresence of mediated communication as they occur within a larger cultural context also corresponds more clearly with an understanding of the influence of culture and situation on the mind and perceptions of body and self. Bourdieu's theory of habitus has been applied to studies of online communities (see [12]), but it is also valuable for understanding the cultural processes that encourage the phenomenon of presence within a communication context that is increasingly mediated. Wu Song [12] in describing the relationship between the nature of the Internet and culture states that web sites are "technologies dialectically engaged in the social construction of reality" (p. 251). They are an active part of the habitus that supports the embedded cultural perceptions of practices and interactions on the Internet. The posthuman and cyborg understanding of being in the world today describes the environment in which the habitus of presence occurs. Presence research has sought to conceptualize the individual experiences and processes of mediation, but there are few approaches developed for the understanding of presence in a cultural sense. In order to understand the larger significance of presence, the phenomenon must not be solely understood as isolated psychological processes.

5. The Habitus of Presence

Habitus is a sociological term used by Bourdieu [13] to define "... embodied history, internalized as a second nature and so forgotten as history ... the active presence of the whole past of which it is the product" (p. 56). Habitus describes the cultural and historical perceptions that are so embedded within being that the self does not consciously realize their influence [13]. The habitus of presence involves the habitual and culturally ritualized embodying of technology. It implies a naturalization of the disembodiment of self implicit within mediated interactions and occurrences of presence. Though the specific feeling of presence might centre in the mind, the

occurrence of presence associated with mobile communication is becoming more and more a cultural practice. The value of viewing the phenomenon of presence through the lens of habitus is that it enables us to perceive the influence of the cultural practices of mediation on the momentary psychological experiences of presence. It is also salient for considering the influence that a culture profuse with mediated presences has on perceptions of embodment and self.

An exploration of the cultural habitus of presence must necessarily include a discussion on the states and perceptions of embodiment and disembodiment. The concept of the fluctuating embodiment of virtual life is explored by Don Ihde [14]. Ihde [14] differentiates between the physical perception of the body, "here-body" (p. 5), and the virtual body. He argues that our visualizations of ourselves, without mediation, form the virtual body that is a partially disembodied sense of self [14]. It is the full sensory experience that separates the here- body from the virtual body [14]. Though he does not focus entirely on mobile technology, his ideas about the self disjoined from the body is relevant to the exploration of presence and the digital hybridity of the posthuman. Both the posthuman and cyborg perceptions of self and body depend on states of flexible and partial embodiment.

Murray and Sixsmith [15] also explicate the notions involved in the states of embodiment in virtual reality. They argue that the disembodied mind, that is, the mind in virtual space, carries with it its cultural and gendered history [15]. During the process of experiencing presence, the self still contains its "social and cultural contexts" ([15], p. 320). This concept hinges on the idea that the mind is inseparable from the body in a Cartesian sense. In exploring this phenomenon, they employ and synthesize previous studies that have focused on the phenomenological experiences of virtual reality, telepresence, and embodied technologies. The concept that various experiences of presence in virtual reality are in part influenced by cultural histories is an argument that correlates with a cultural understanding of presence as habitus. This understanding of virtual embodiment supports an understanding of presence through the aspects of its social and cultural construction. Turkle [8] describes the shift in society experienced more and more through a form of mediation. Presence can be studied not only as a personal psychological phenomenon, but also as a cultural experience. It can be argued that the illusions of non-mediation are intensified by the cultural embracing of multiple forms of social presence. This, however, makes it far more difficult to study. Presence in the personal sense can be measured according to individual experiences. The

concept of cultural presence can be studied most clearly through the cross-cultural differences of presence that might exist. The importance is not in the actual differences, but the ways the cultural contexts of presence should be considered.

Though Murray and Sixsmith [15] focus on the experiences of virtual reality, their concepts of embodiment and presence are transferable to the case of experiencing presence through mobile technologies. The urge to ban cell phone use while driving a car illustrates this very concept. The reason for this ban is that the driver is distracted from the immediate situation and is partially, if not fully, focused on a virtual situation. The virtual is most often thought of as a visually simulated space; however, within this discussion, it will refer also the ethereal space to which the mind/body is transported when experiencing presence. The concept of presence is often described as the sense of being there when one is in actuality not present. Presence in the context of online communication, and more acutely of mobile communication, is different than presence in a virtual simulation of space and time. This becomes clear when we try to ask what does there mean in being there? In a virtual simulation, the body and space are reconstructed, so the there is a more clearly defined space. In online communication and mobile communication, the question of where is there becomes much more abstract. If, according to Murray and Sixsmith [15], we are to understand virtual presence as including the cultural and gendered histories of the non-virtual selves, it is worthwhile to consider, the recursive, cultural conditioning of presence experiences of disembodiment and virtual re-embodiment. Murray and Sixsmith [15] argue "that a sense of embodiment in VR is predicated upon two phenomena: the sensorial architecture of the body, and the malleability of body boundaries" (p. 336). The feelings of embodiment within technologically mediated environments described by Murray and Sixsmith correspond with the concept of presence.

The clearest example of the convergence of presence and the posthuman self can be seen in Turkle's [8] troubling realization that we are beginning to prefer mediated expression and communication over face-to-face, organic expression and communication. The mediated experience of sociality is what intimately binds the phenomenon of presence to the posthuman. The posthuman demands and requires an increasingly seamless movement through flexible states of presence. This idea is also expressed by Biocca [9] in his description of progressive embodiment. For Biocca [9], the cyborg

emerges from the convergence of the self and the interface.

Another important feature of the culture of presence involves the temporal aspects of social and spatial presence. For example, online profiles, though they change occasionally, exist in a sort of frozen cyber-time that gives the illusion that someone is present, though in real space they may not be. Being present in a chat room begins with one's screen name being on a list, though one may not actually be present at the computer in real space. A message is sent, but the receiver does not respond because they are only partially present. This interaction leads to a kind of ambiguity of presence and it is sometimes expected in these situations. Frequent and casual chatters may not be offended if someone does not respond, because this ambiguity is accepted. This would never happen in real space. Smart phone users always have the option to be present in these digital spaces. Text messaging is different because there is no signal of presence. Messages are just sent. With a chat, there is a slight expectation of response because of the signal of presence that comes from the list of currently online screen names. From the fieldwork examined by Turkle [8] and Katz and Aarkhus [11], we learn that not only is mobile technology embraced as integral to the self on a personal level, but also on a social level. We embrace our communication devices as integral parts of our selves, while also accept the ambiguity of presence of the digital others. If culture is understood, in a simplistic sense, as the whole collection of practices, rituals and languages that construct an experience of the world, then presence can be seen not only as a psychological phenomenon, but a cultural one as well. Presence has become a sort of habitus of technological cultures.

Through the lens of posthumanist theories, we come to see new ways of defining human existence today. These theories, however, must seek to truthfully represent the actual experiences of presence and technological hybridity. Because these phenomena are culturally rooted, empirical and ethnographic studies offer ways to achieve this. Mobile technology provides an excellent sample for testing and examining the notions of transhumanism and telepresence. Ultimately, the goal is to understand the value in redefining humanness and how these new definitions exist now and might flourish later. The focus on the body, its sensations and experiences, strengthens the case for using ethnographic methods to study the phenomenological aspects of participating in mobile technology cultures. It would be interesting to study how degrees of presence differ between desktop environments and mobile and ubiquitous environments. In the case of a

desktop environment the body is turned off in a sense. It is inactive, so the body is only represented in a purely virtual, imaginary sense. With mobile computing and ubiquitous systems, the body can be an active part of the interaction, even though its movements might not directly relate to the mediation, such as walking while talking on a mobile.

The value in taking a cultural perspective of the psychological implications of increased mobile and mediated communication is that it allows us to understand the ways context and repeated practice and use of these technologies have impact on their effects. In taking this broader look at presence and mediated communication, it is important to consider the significance of culture and context on the mind. Mobile communication, in particular, is a valuable focus because its use necessarily involves the body and our changing notion of its boundaries. The increased acceptance of these devices as integral to our bodies as well as minds is not simply an individual, cerebrally based phenomenon. It is a cultural movement, shaped by our social practices, media ideologies, and cultural and market narratives that depict what it should be to live in this society today. Mobile communications are a part of the pervasive system that increasingly spreads and develops throughout our cities, homes and landscapes.

6. Future Research and Conclusion

The concept of cultural specificity is an increasingly valuable avenue to examine. These different perspectives can help us understand the usefulness of the concept of presence as habitus within certain cultures. With concepts of hybridity and imagined presence, the integrity of the body is at stake. Which cultures and subcultures more easily embrace this phenomenon? Could this be a result of the cultural history of their media devices? Many studies focus on youth cultures in particular [16, 17, 18]. Is there a drastic difference in the experience of presence and the incorporation of mobile media between age groups? What might this say about the future of our bodies, our minds, and our cultures? Rheingold [7] among others have hinted at cultural shifts in the concept of presence, but the literature still lacks a concentration on presence as a cultural phenomenon. This new perception of presence within a cultural context prompts more questions that might be more difficult to answer. What part of the individual acceptance of virtual embodiment is an aspect of the cultural acceptance of it? How have our cultural narratives, present in film, games, and advertisements, encouraged a culture of multiple presences? These

questions are important because they strive to understand the phenomenon of presence in context. Furthermore, understanding presence as habitus can elucidate how a culture of mediation influences the experience of presence.

Looking at the ritualized, habitual practices of using mobile media allow us to view the phenomenon of telepresence within context. The cultural embedding coupled with the individual embodying of mobile media provide the means for studying telepresence from a cultural perspective. It involves not measuring telepresence based solely on the interaction between the technology and its user, but viewing telepresence as a culturally constructed notion maintained by social and behavioral practices. Habitus is useful for describing the ways the occurrences of embodiment through technology and the complementary disembodiment from the organic body become cultural practices. It names the recursive process of technological development, social change, and phenomenological shifting. Through the pervasiveness of the mediated communicative environment, the process of experiencing presence becomes second nature. This second nature, the habitus of presence, symbolizes the acts of disembodiment of self and embodied technological presence, a process that articulates the cyborg and the posthuman. Hayles [1] argues that the perception of humanness itself is a cultural and historical construction. This assertion implies that characteristics of embodiment that define the human self are flexible and adaptable as well. The terms posthuman and cyborg are scholarly ways of describing a particular subject. They are purely academic ways of understanding a certain construction of the individual at a certain historical point in time. Largely left unclear are the ways these names trickle into the consciousness of the everyday self and how this reaffirms or redefines the individual's understanding of him or herself.

Empirical studies of the everyday uses of mobile technology illustrate that it is not the explicit movement and awareness to integrate technology into our bodies and increasingly mediate our interactions that alters our notions of presence. It is a process that involves habitual and repeated practice that over time becomes culturally embedded. This very process is what the concept of habitus describes. The cultural embedding of presence is a two part process that involves both the physical embodiment of technologies of mediation and the psychological disembodiment of self. These two processes are essential to the posthuman and cyborg understanding of the subject. The habitual occurrences of presence through the cultural pervasiveness of mobile technologies

can be considered a force influencing the mechanisms of presence itself, as it is traditionally conceptualized. Presence, in turn, can also be understood as more than a distinctly psychological concept. Through the cultural expansion of media based interaction, mobile devices and pervasive computer systems are becoming significant aspects of our perceptions of body and space. The cyborg habitus denotes the process in which the embodiment of self remains in a constant state of partiality. The acts of presence via mediation technologies become a culturally embedded practice, a second nature unnoticed by its actors.

References

[1] Hayles, N.K. (1999). How we became posthuman: Virtual bodies in cybernetics, literature, and informatics. Chicago, IL: University of Chicago Press.

[2] Haraway, D. J. (1991). Simians, cyborgs, and women: The reinvention of nature. New York, NY: Routledge.

[3] Shackel, B. (2009). Human-computer interaction - whence and whither? Interacting with Computers, **21**, 353-366.

[4] Licklider, J. C. R. (1960). Man-computer symbiosis. IRE Transactions on Human Factors in Electronics, 1(1), 4-11. doi:10.1109/THFE2.1960.4503259

[5] Lombard, M. & Ditton, T. (1997). At the heart of it all: The concept of presence. Journal of Computer-Mediated Communication, 3(2). doi: 10.1111/j.1083- 6101.1997.tb00072.x

[6] Lee, K.M. (2004). *Presence, explicated. Communication Theory*. **14(1)**, 27-50.

[7] Rheingold, H. (2002). *Smart mobs: The next social revolution*. Cambridge, MA: Perseus Publishing.

[8] Turkle, S. (2011). Alone together: Why we expect more from technology and less from each other. New York, NY: Basic Books.

[9] Biocca, F. (1997). The cyborg's dilemma: Progressive embodiment in virtual environments. Journal of Computer-Mediated Communication, 3(2). doi: 10.1111/j.1083- 6101.1997.tb00070.x

[10] Katz, J.E. (2003). Do machines become us?. In J.E. Katz (Ed.), Machines That Become Us. New Brunswick, NJ: Transaction Publishers

[11] Katz, J.E. & Aakhus, M. (2002). Conclusion: Making meaning of mobiles- a theory of Apparatgeist. In J.E. Katz & M. Aakhus (Eds.), Perpetual Contact: Mobile Communication, Private Talk, Public Performance. (pp. 301-320). Cambridge, UK: Cambridge University Press.

[12] Wu Song, F. (2010). Theorizing web 2.0: A cultural perspective. Information, Communication, & Society, 13(2), 249-275.

[13] Bourdieu, P. (1990). The logic of practice. Standford, CA: Standford University Press.

[14] Ihde, D. (2002). Bodies, virtual bodies, and technology. In D. Ihde (Eds.), Bodies in Technology (pp. 3-15). Minneapolis, MN: University of Minnesota Press.

[15] Murray, C.D. & Sixsmith, J. (1999). The corporeal body in virtual reality. Ethos, 27(3), 315-345.

[16] Chesher, C. (2008). Becoming the Milky Way: Mobile phones and actor-networks at a U2 concert. In Gerard Goggin (Ed.), Mobile Phone Cultures (pp. 77-85). New York, NY: Routledge.

[17] Ling, R., & Yttri, B. (2002). Hyper-coordination via mobile phones in Norway. In J.E. Katz & M. Aakhus (Eds.) Perpetual Contact: Mobile Communication, Private Talk, Public Performance. (pp. 139-169). Cambridge, UK: Cambridge University Press.

[18] Thompson, L., & Cupples, J. (2008). Seen and not heard? Textmessaging and digital sociality. Social & Cultural Geography. **9(1)**, 95-108.