Virtual living in mixed realities

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Abstract

Psychoanalysis and psychotherapy as disciplines have been relatively slow in the exploration and analysis of cyberspace phenomena and screen technology mediated subjectivity. This paper takes a tour of five mixed reality scenarios (i.e. where real and virtual spaces mix) so as to stimulate thinking and discussion on the impact of the internet on contemporary populations (at the level of both psyche and socius). It also puts forward the claim that the experiences of virtual living? afforded by cyberspace offer unique potentials for the theory and practice of psychotherapy and psychoanalysis today.

Introduction

The so called information and communications revolution of past decades has ushered in an age of digital communication, 'distributed presences' and 'evocative objects' (Sherry Turkle), 'cyberspace' (William Gibson), 'virtual reality' (Howard Rheingold), 'cyborgs' (Donna Haraway), 'artificial reality' (Myron Krueger), 'simulacra' (Jean Baudrillard), and so called 'artificial intelligence' (John McCarthy) or 'synthetic reason' (Manuel Delanda). Today, as Karen Ferneding (2004) notes, 'to say that we live within a technological society is to state the obvious' (p. 37). Technology progressively mediates our perceptions and experiences of identity and social relationships (we can call this dimension the 'Sensible', to borrow from Jacques Rancière), as well as blurring the lines between virtual and real/ity, challenging standard common sense notions of reality as necessarily material or physical, and the 'Sensible' as bounded by the limits of the body.

Relational technologies such as the 'internet' and its many virtual social spaces or 'multi-user domains' (MUDs) are of special interest in the ways in which they open up possibilities of 'virtual living', community, and mixing realities (i.e. mixing the streams of virtual and 'real world' realities). Our global enmeshment with the internet (over desktops, laptops, pda's, mobile phones, gaming devices such as Playstation Portable and Nintendo DS and so on) makes the notion of a continuous computing environment, distributed across geo-cultural space-time, increasingly viable. Further, the expansion of this continuous computing environment and its embedding into 'real world' situations (for instance in pervasive gaming[1] where gamers play in real world spaces coordinated to activities in a virtual game world accessed by say mobile phone) paves the way for the creative synthesis of the opposition between virtuality / fantasy and reality in the concept of 'mixed reality'.

Psychoanalysis and psychotherapy as disciplines have been relatively slow in the

exploration and analysis of cyberspace phenomena and screen technology mediated subjectivity. Even in the one area that is of high relevance to these fields – that of *technology mediated psychotherapy* – the profession at large has for some time displayed an inordinate amount of resistance to the idea that therapeutic activities could actually take place beyond the so called 'real' face-to-face scenario, let alone in cyberspace. What is of psychoanalytic and aesthetic interest in these techno-social mediations and reconfigurations is of course firstly the significances for contemporary experiences of subjectivity (how are we experiencing and representing our 'selves' today?) and alterity (how are we experiencing and representing 'others' or 'otherness' today?), and secondly the relations between fantasy, virtuality and reality. By presenting and discussing five virtual life / mixed reality scenarios, this paper seeks to stimulate thinking on the relation between virtual and real(ity) and on the dangers and possibilities of cyberspace for the profession. The five scenarios utilize contemporary examples by way of a 'tour' of sorts through some of the domains wherein virtual and real spaces blur in distinctive ways.

At this point, some provisional definitions may be useful for 'virtual life' and 'mixed reality'. *Virtual life* is a term used to designate [1] software based virtual life forms (e.g. *Tamagotchi, Aibo, Eliza, Virtual Girlfriend*) existing in relationship (interactions) with humans, and [2] technology / internet mediated experience (the subject's presences and experiences say in online dating, social networking, therapy, or multiplayer gaming). *Mixed reality* is a term deriving from Paul Milgram and Fumio Kishino (1994) who conceptualized a spectrum or continuum encompassing reality and 'virtuality'. Used in this paper, 'mixed reality' recasts the preceding naïve opposition between an 'authentic' material reality and the 'artificiality' of internet mediated or software driven subjective and social experiences, conceptualizing reality as a mixture of actual and virtual dimensions. Such a proposal can be specifically aligned with Lacanian psychoanalysis, allowing us (as Slavoj Zizek claims) to retroactively realize the ways in which *reality itself was always virtual* - that is to say, how our experience of social reality is always minimally constituted by fantasmatic 'virtual' frames. Without further ado, let us move to the first scenario…

Virtual companions – pets and lovers

Launched in November 1996, *Tamagotchi* enjoys a reputation as the first virtual pet in the world. We could even say that *Tamagotchi* first introduced the idea of virtual companions[2] into popular consciousness. After almost a decade of existence, riding on high brand and product awareness, *Tamagotchi* was recently re-released as *Tamagotchi Connection* by Bandai Corporation. Far from a passing fad, *Tamagotchi* sold more than forty million units worldwide (with America and Canada accounting for 12 million) in less than two years from release (Kusuhara, 2001). The recent re-release, *Tamagotchi* Connection (2004), has over two years achieved 20 million unit sales (Tamagotchi Connection Information Centre, 2006). Cultivating these virtual

companions enjoys such popularity that it has spawned numerous imitations such as *GigaPet* (like *Tamagotchi*, a handheld virtual pet), and iterations with material bodies such as *Sony's Aibo* (a robot dog) and Japan's National Institute of Advanced Industrial Science and Technology's *Paro* (a robot seal covered with fake fur that is marketed as a 'warm', 'fuzzy' therapeutic pet for retirement homes). Most recently a *Tamagotchi* iteration *Nintendogs*[3] was launched on *Nintendo's* proprietary platform *NintendoDS* (a portable gaming platform), achieving significant commercial success.

'*Tamagotchi*' derives from the words *Tamago* (egg) and *Tomodatchi* (friend) literally meaning 'egg friend'. The 'Egg-friend' is sold in toy stores and takes the form of a small portable LCD game attached to a key-ring. On activating the game, one is confronted with an egg. Using a set of buttons, the gamer must respond to *Tamagotchi*'s demands, first hatching the egg, and then feeding, nurturing, disciplining, medicating and cleaning up after it. Depending on the owner's actions and perhaps even attachment style, this egg friend eventually develops into 'characters' with differing personalities. For instance, failure in tending consistently to its cries as a baby will result in a creature that frequently pesters its owner. In common with its offshoots, *Tamagotchi* stages a relational structure that invites the 'interactive' participation of the gamer. Like virtual human companions, virtual pets offer, in Bandai's words, an experience of 'virtual love'. This relational scene is expanded in the latest version by the inclusion of infra-red technology allowing the viartual pet 'to become friends[4] with other *Tamagotchi*, visit its friends to give gifts or play games together, and eventually have a possible second, third and fourth generation virtual pet' (Tamagotchi Planet, 2004).

Whilst some of us from older generations may find the notion of relating to such 'inanimate' objects slightly unnerving or even outright ludicrous, Sherry Turkle's (1995) research into children's experiences of 'artificial life objects' already pointed to a radical generational differentiation with children of the nineties regularly perceiving such objects as 'sort of alive' (p. 172). So, what was previously considered admissible to the categories of life and reality in the past was supposedly 'material' (i.e. a real material pet) and now what is considered admissible to life and reality can also be 'virtual' (i.e. a virtual pet like *Tamagotchi*). Are we not dealing here with the cultural trend characterized by Slavoj Zizek as the *virtualization* or *digitalization* of reality[5]? If virtual pets represent a virtualization of the other, then virtual girlfriends or boyfriends (virtual lovers) 'humanize' or domesticate this digitized other, cloaking and sexing 'it' with 'human' features.

Needless to say, aside from virtual pets, the makers of *Tamagotchi* also offer virtual human companions, in a game called *Love-by-Mail*, where subscribers receive letters and gifts from a virtual girlfriend via email. Whilst *Love by Mail* is targeted at a male audience, *My Prince*, also from Bandai, offers virtual love for female users. A particularly fascinating virtual human in the 1990s came in the guise of *Kyoko Date*,

a virtual Japanese pop idol created by the Hori production company. According to Yumiko Iida (2000), 'Kyoko's virtual music concerts, compact discs and videos, and the Internet chat line pulled in large numbers of young male fans' (p. 429). Kyoko's virtual celebrity life anticipated some of the possibilities and sophistication of contemporary virtual life and can be viewed as a precursor to *Vivienne Rose*, the first *Virtual Girlfriend* by Hong Kong based *Artificial Life*[6]. Vivienne was launched in 2004, and is probably one of the most sophisticated virtual companions around today, speaking in over 6 languages, powered by artificial intelligence, conversant in thousands of topics, and available around the clock on mobile phone.

Virtual Selves: massively multiplayer online gaming (MMOG)

In the previous section, we dealt with virtual others in the form of virtual pets and lovers. In this section, we turn towards virtual selves and subject positions. Digital games are one of the most popular forms of entertainment today, and MMOGs are the most social of digital gaming activities, made possible by global internet access. Established MMOGs typically have hundreds of thousands to millions of gamers and can be thought of as virtual communities. Some of the more popular gaming communities include *World of Warcraft, Everquest, Legend of Mir 2*, and *Dark Age of Camelot* for instance. If with *Tamagotchi*, the virtual self remained hidden, in MMOGs, it acquires high visibility, and it's creation (the graphical fleshing out), maintenance and deployment (or performance) within virtual worlds assume paramount importance. Such virtual 'selves' are called 'avatars' in computer games discourse. Avatars, simply put, are stand-ins or agents for the self in cyberspace. They are a sort of digital prosthesis extending our 'selves' (fantasmatically) into any number of virtual worlds, gaming and otherwise. In a great variety of popular MMOGs, avatars typically incarnate with human-like visual form and gamers typically also use a 'handle' or online name for their avatars. It is not uncommon for players to have more than one avatar and of course for players to create and use avatars of alternate or indeterminate gender[7].

The specific case of mixed realities concerning virtual selves and MMOGs we are interested in was reported in The Guardian Unlimited (*Virtual Trade Gets Real*) on June 16, 2005. It concerns Chinese multiplayer gamer *Qui Chengwei*, who was 'given a suspended death sentence for fatally stabbing someone in an altercation that was over a piece of property that didn't even exist'. The property in question was a special sword 'Dragon Sabre' within the virtual world of *Legend of Mir*. The story is reported as follows:

Qui and a friend had jointly won a valuable Dragon Sabre by battling through a tough quest. The pair lent it to Zhu who, instead of returning it, sold it via an online auction, kept the money (about £480) and ran. Chinese police don't recognize virtual property as real goods, so the question of theft was a moot point. The result was that Qui resorted to a brutal real-life crime (Krotoski, 2005).

Another case involved the game *Lineage II*. According to *New Scientist*, a Chinese exchange student was arrested in Japan on 18 August 2005 'on suspicion of carrying out a virtual mugging spree using software bots to beat up and rob characters... The stolen virtual possessions were then exchanged for real cash'[8]. Japan's police clearly have specialists dealing with virtual crime, as do Korea's police. In the first half of 2003, the Korean police dealt with over forty thousand cyber-crimes, more than fifty percent involving online gaming. It is no accident that Japan and Korea have developed expertise in this area – they are the two most networked and mobile countries in the world.

That the effects of virtual encounters spill over in such a way into social reality demonstrates at the very least the potency, perceived significance, and effects of virtual experiences in contemporary techno-social ecologies. It suggests that experiences we have *through* the mediation of the avatars we create in virtual spaces such as MMOGs or online communities such as *Second Life* or *Myspace* can *affect* us profoundly, and also that perhaps in our contemporary networked lives, virtual and real bleed into each other far more than we are willing to acknowledge. Beyond this, it also suggests that more work can be done on theorizing the relation of virtuality and fantasy to reality. Zizek's idea for example is that our experiences with virtual selves / avatars at the very least allow us to retroactively see how most other aspects of our 'real' lives (and social realities themselves) are constituted by virtualities or fantasies... how we are performing our 'real' selves in our everyday lives as much as we are our avatars and virtual identities online. Perhaps this kind of performance is clearest in the uncertain field of gender, particularly where it is played out on the 'stage' of romance and dating. Are our performances of gender in these situations (i.e. the construction and enactment of what it is we imagine and subscribe to as 'being a man' or 'being a woman') not clearly constituted by fantasmatic coordinates?

Money, properties, economies

Despite its ultimate virtuality, money is popularly perceived as a very 'real world' issue and object. One can imagine parents admonishing today's teenagers to not waste time in virtual worlds but to make a living in the real world! Indeed chasing money or wealth can often be perceived as 'materialistic'. Today however, there are teens that make livings out of their virtual world activities... building up super characters in online game communities to auction off on *Ebay* for instance. The MMOGs mentioned earlier typically have in-world (virtual) economies linked to real world economies. As the *Guardian Unlimited* reports 'recent estimates indicate that the value of real-money transactions outside the game world, via online auction sites, is approximately US$100M to US$1B' (Krotoski, 2005). The single biggest transaction of 2004 was David Storey's purchase of *Treasure Island* in the virtual world of *Project Entropia*. 22-year-old Storey went on to develop land packages to on-sell at a profit, much as a property developer in real life does. It is perhaps

the blurring boundaries between virtual and real in this specific domain – money – that has motivated increasing consideration and acceptance of the significance and value of virtual life experiences. Cynically put, it is the realization that virtual life experiences are desirable and significant to us and that therefore real world money is to be made from the virtual that drives the mainstreaming of virtual living today.

More recently, the three dimensional virtual world *Second Life* has pushed the blur across virtual and real spaces further. *Second Life* is a little like a MMOG, but it is not a 'game' as such. Instead it is a '3D online persistent space totally created and evolved by its users' – a virtual world with content creation tools enabling users to 'do, create or become just about anything'. There are in world games, social activities, businesses, fashion shows, art openings, brothels and nightclubs. Real time interaction is made possible by broadband internet access, allowing users to manipulate in-world objects and to chat to other avatars in real time. Most significantly, the virtual currency - the Linden dollar – trades directly against the US dollar. Currently for instance, it is trading at $297 Linden to US$1. *Second Life* takes David Storey's rather spectacular 'mixed reality' property trading and makes it a commonplace feature of its online world (which really is no more than a 'gated' space within the larger infrastructure that is cyberspace). Whilst it is free to participate in *Second Life* as a basic user, the complete experience requires that one buys property (land in the first instance) to establish as a base / home. Registration in *Second Life* even requires linking to a credit card. Once set up, one is free to conduct business as well as pursue various entertainments. What kind of mixed reality trading goes on in *Second Life*? Some examples include the clothing designer that sold a one off virtual dress for US$160 and a company *Wells Fargo* launching a commercial 'Stagecoach Island' in *Second Life* in 2005 offering financial advice and solutions to young adults. Most recently, real world universities have purchased islands and plots of land in *Second Life* in preparation to develop e-learning programs and revenue streams in-world.

In thinking about mixing realities, is *Second Life* not the exemplar of a seamless weaving together of real world and virtual world economies? Mixed reality property trading (by this I mean transactions that breach the real world – cyberspace divide generally) evokes all sorts of questions particular to our contemporary cultural moment, in response to the imbrication of cyberspace in the real world. As *The Guardian Unlimited* suggests, these situations 'present questions about the nature of value, ownership and property' (Krotoski, 2005). The pervasive and popular association of property with materiality or physicality means that for many, the idea of mixed reality trading may be extremely disturbing. How for instance am I to safeguard a virtual object as opposed to say my car that I can keep under lock and key in a garage and even outfit with an alarm system? Yet it is not as though we have not always had virtual properties. Patents and copyright for instance are clearly a form of virtual property. Our engagement with the mixing of virtual and reality today however forces a re-evaluation of how we are to consider previously stable and

certain coordinates of our social existence – for instance our houses / properties, our sense of home and community, the value we confer on physical and virtual objects and experiences, and so on.

Rape club: fantasy or reality?

Whilst the previous section mapped the blurring of virtual and reality, this fourth scenario of mixed reality highlights the increasing complexities (and perhaps impossibility) of distinguishing *between* the overlapping spaces of virtual and reality. The scenario here is the traumatic one of rape. Australian news reported on June 7th 2005 that New South Wales Police began investigations of a number of chat rooms in an internet forum on *NineMSN* website called 'Rape Club'. *NineMSN* closed down a number of rape related forums after being informed of 'a 15 month long discussion involving 46 web users or 'posters', discussing rapes and pictures of rapes'. The forums closed were called: 'No Rape No Glory', 'Whitepower/rape rock', 'Ministry's Land of Rape and Honey' and 'Rape Me' (The Age, 2005).

In their investigations, the primary difficulty encountered by the Police is one that has a history in psychoanalysis, beginning with Freud and the difficulty in distinguishing between fantasy and reality in the speech of the patient, in relation to 'memories' of seduction and sexual abuse. Concerning the investigations, Detective Acting Chief Inspector Vivien Crawford said, 'It is difficult in this area of adult pornography where fantasies of rape do occur... and they are not necessarily a crime... clearly just because people fantasize about a particular thing doesn't make it an act that we would be investigating' (The Age, 2005). On the other side, NSW Rape Crisis Centre Manager Karen Willis would have rape fantasy internet discussions and websites outlawed. What would then happen to sites such as www.adultfriendfinder.com, where discussions about all manner of fantasies and enactments regularly occur in the context of online dating for offline sex? Should such sites then be outlawed too? If we pursue Willis' logic to its conclusion, the final question to arise of course is this: *should* we legislate against fantasies themselves? Were it even possible, what would be the effect of such legislation (and how effective would it be), given what we know from psychoanalysis, namely that Law is dialectically related to Transgression? To put it in another way, did Freud not already elaborate the notions of repression and the *return of the repressed*? Repression is not elimination after all.

Technology mediated psychotherapy

Throughout this paper, I have presented a range of scenarios on our tour of contemporary mixed realities. Instances such as the case of internet gamer *Qui* as well as 'Rape Club' demonstrate some of the troubling aspects of our negotiation of the blurring spaces of virtual and real life, sometimes prompting reactionary and extreme responses that figure an attempt to erect a stable boundary between virtual

and reality. It must be pointed out that these sensational scenarios are by no means *commonplace*, and further, that our engagement with cyberspace can also be enriching, stimulating and even therapeutic. This brings us to the final scenario, one that is of direct relevance to clinicians, namely, *technology mediated psychotherapy.*

Technology mediated psychotherapy has a surprisingly long history, in fact, at least as long as the history of the internet itself. It began with the famous ELIZA program collaboratively developed by Joseph Weizenbaum and Kenneth Mark Colby. ELIZA[9] (Weizenbaum, 1966, 1976, O'Dell & Dickson, 1984) was the first software simulated (Rogerian) psychotherapist and its use the 'first well-documented example of humans interacting with computers for a therapeutic purpose' (Grohol, 2004: 52). Interestingly, this first use case is one between human and computer (although those who originally interacted with ELIZA actually thought it was human). Today, the field of technology mediated Psychotherapy includes software driven interventions between human and computer[10] *and* human-to-human psychotherapy mediated by technology. In this section, I focus specifically on human to human technology mediated psychotherapy and its possibilities.

Face to face psychotherapy arguably hinges on the skillful deployment of the 'person' or 'presence' of the clinician in relation to the idiosyncratic presentation of the patient. Similarly, online psychotherapy depends on the successful creation and deployment of virtual 'presence'[11] in cyberspace, through text, over email and instant messenger (IM), avatars, emoticons, images, and even sound, voice and ultimately video stream. Whilst the ability to conduct online psychotherapy has been around for quite some time, it is only in recent years that this 'scope of clinical practice' (online counselling and psychotherapy) has begun to come into its own. If Michael J. Mallen (2004) is right, this can be explained by recourse to the notion of a 'critical mass', that is, 'enough people in our society have begun to use online communication in their lives – the technology has become absorbed into all facets of life, including work, education, and leisure' to the point where 'a panel of 67 psychotherapy experts predicted in 2002 that internet therapy services would be the second fastest increasing service area in the next 10 years' (Norcross, Hedges, & Prochaska, 2002, p. 69-70).

With such predictions, questions naturally arise; does online psychotherapy (and more broadly does our engagement with cyberspace) offer any particular promise? Here I believe Lacanian psychoanalysis offers a specific answer. If the Lacanian philosopher Slavoj Zizek (1999) is correct, online psychotherapy is an area that holds special promise because of the peculiarities of cyberspace and its relation to fantasy and social reality. How so? His argument[12] is that cyberspace opens up certain possibilities:

To stage, to 'act out', the fantasmatic support of our existence... We are thus invited to risk the most radical experience imaginable: the encounter with our 'noumenal

Self', with the Other Scene that stages the foreclosed hard core of the subject's Being. Far from enslaving us to these fantasies... it enables us to treat them in a playful way, and thus to adopt towards them a minimum of distance – in short to achieve what Lacan calls *la traversée du fantasme* ('going through, traversing the fantasy') (p. 121).

If then the patient's engagement with the therapist through the medium of cyberspace allows for precisely such a staging of the fantasmatic coordinates of subjectivity, it is the cultivation of a minimal distance towards such fantasmatic elaborations that holds a key to therapeutic success. A collapsing of such distance may result in a case of mixed realities gone awry as we saw with internet gamer *Qiu*, who was excessively identified with his avatar and virtual life. This treating of fantasies in a playful way suggested by Zizek is similar to what the Lacanian psychoanalyst Dany Nobus proposes in the treatment of trauma - the idea of *destabilizing a patient's identification as a 'victim'*. This precise kind of destabilizing of identifications is made all the more possible when working with a greater visibility of such identifications through their elaborations – representations – performances in cyberspace. Perhaps what cyberspace promises clinically is the capacity for us to create, play with and reflect on multiple virtual 'selves' or presences (and thus with the multiplicity of subjectivity), opening anew the horizon of Lacan's *subjective decentring*. Zizek (1999) claims, 'If we externalize in (cyberspace) our imagination in its very inconsistency, the very fantasmatic frame that guarantees the consistency of our (self-) experience can, perhaps, be undermined'[13] (p. 123).

In an age when 'mental illness, including suicide, accounts for over fifteen percent of the burden of disease in established market economies... (more than the disease burden caused by all cancers)'[14], the therapeutic and analytic possibilities of cyberspace are especially relevant for entire internet generations already busily and creatively occupied with sophisticated, dynamic and distributed presences across the internet and mobile networks. Perhaps a more radical point however, is that in this scenario of possibilities for our engagement with cyberspace, the online presence of a psychotherapist may not even be required for therapeutic benefits to accrue to many of those engaged in virtual living in mixed realities today! Firstly, *subjective decentring* or *destitution* can reflexively emerge simply through individuals experiencing and reflecting over time on the ways in which they might use a range of avatars to perform different 'aspects of self' online *in relation to the Other* and eventually (as in the end of a Lacanian psychoanalysis) realizing 'the other's desire as its decentred cause' (Zizek, 1995). Secondly, the computer screen nowadays opens out onto a profoundly social space.

More recently, the computer has become even more than tool and mirror: We are able to step through the looking glass. We are learning to live in virtual worlds. We may find ourselves alone as we navigate virtual oceans, unravel virtual mysteries,

and engineer virtual skyscrapers. *But increasingly, when we step through the looking glass, other people are there as well* (Turkle, 1995: 9).

What these real others offer through the screen is not unlike what the online psychotherapist can offer... namely a background and field of difference / resistance against which to move dialectically *through* symptomatic identifications across the blur of mixed reality.

Conclusion

The virtual life and mixed reality tour finishes here. I have presented five scenarios demonstrating the entanglement of virtual and real/ity in what is increasingly becoming a continuous computing environment overlaid onto geo-cultural spacetime. My intention has been to touch briefly on a range of areas in order to map the space of negotiation between virtual and real life, and then to create an opening to consider of the significance of cyberspace for the profession of psychotherapy. Whilst some of these scenarios may seem strange, they are familiar and resonant to entire internet generations today. In any case, barring a truly global cataclysm that destroys all ICT infrastructures around the world, cyberspace is here to stay, and there is both a need for, and promise in, research and discussions on its implications for both psyche and social relations.

The thrust of this paper has been to make a case for transcending the opposition between the supposed 'artificiality' of virtual living and the apparent 'reality' of our 'real world' social lives by recourse to the concept of mixed reality. The main resource I have called upon in using this notion of mixed reality is Lacanian psychoanalysis and its insight that the subject's *experience* of social reality has always been virtual / fantasmatic. Fantasy is 'the little piece of imagination by which we gain access to reality – the frame that guarantees our access to reality, our 'sense of reality' (when our fundamental fantasy is shattered, we experience the 'loss or reality')' (Zizek, 1999, p. 122). I want to stress that an engagement with cyberspace does not *automatically* actualize the radical promise of traversing the fantasy and that cyberspace is not *by definition* therapeutic (nor is it by definition dangerous). To a greater or lesser extent, what we find in cyberspace is a recapitulation of the whole spectrum of human possibility, and given the progressive overlapping of virtual and real spaces today, 'mixed reality' offers a creative way of thinking about both spaces and how they commingle.

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(Endnotes)

[1] The term pervasive gaming is used more broadly to refer to a genre of games where the game world 'pervades' the real world through 'location based' activities and also through such things as email exchanges outside the game world.

[2] Of course we have had dolls for a long time but we are here focused on digital companions with a level of interactivity that represents a significant break from traditional toy characters and dolls.

[3] Nintendogs are virtual pet dogs. They can be viewed at http://www.nintendogs.com/.

[4] It is not as innocent as it sounds however! Does this expanded social scene not somehow recall Freudian scenes of polymorphous perversities – this new feature in the latest Tamagotchi is precisely its ability to mate with up to fifty other Tamagotchi to produce offspring!

[5] From a different theoretical perspective, are we not dealing with what Jean Baudrillard conceptualized as simulation and simulacra?

[6] See http://www.artificial-life.com.

[7] In the vulgar colloquial of gamespeak, the 'mangina' refers to male gamers who assume the form of female avatars.

[8] See http://www.newscientist.com/article.ns?id=dn7865.

[9] A web based Eliza is available at http://www-ai.ijs.si/eliza/eliza.html.

[10] See for instance ANU's free online CBT based program Moodgym at http://www.moodgym.anu.edu.au/.

[11] See Lombard & Ditton (1997) for an overview of 'presence' at http://jcmc.indiana.edu/vol3/issue2/lombard.html.

[12] Strictly speaking, Zizek argues that such possibilities are available to artistic practice. It applies to everyone precisely as Beuys said 'everyone is an artist'!

[13] See the essay entitled 'Is it possible to traverse the fantasy in cyberspace?' for a detailed account.

[14] See http://www.nimh.nih.gov/publicat/burden.cfm.