Keho

the place for presence research

Information Society Technologies

Peach®
presence research in action

issue 4 Autumn 2008

Welcome to the fourth issue of Keho

"And now, the end is near; and so I face the final curtain. My friend, I'll say it clear, I'll state my case, of which I'm certain. I've lived a life that's full. I've travelled each and every highway; and more, much more than this, I did it my way."

So the time has come to say welcome to the fourth and final issue of Keho: the place for Presence research. With the sentiments of Frank and the attitude of Sid we at Keho say farewell. But, while we pack the boxes at Keho Towers, dismantle our portable cave and release our virtual pets back into the wild, we leave you, not with heavy hearts but with ones full of love. This issue of Keho is the Love edition and to that end the Keho team have made the summer of 2008 our very own Summer of Love. We have worn flowers in our hair and driven our VW Camper van with pride and talked wistfully about Haight-Ashbury all in the name of Presence research. But love, as we have discovered, is a many splendored thing and Presence research reflects that in the range of approaches that it takes to this most fundamental social relationship. The five articles that comprise our Love feature bring together filmmakers, researchers and lovers all of whom provide particular insight into what it means to be present in relationships mediated with and by technology.

But that is not all, as well as love we bring you Waterworth's vision for Presence research in the future and a report by Nevejan, Wouters, Beaulieu, Thoutenhoofd and van der Heuvel on a workshop recently held in Amsterdam that discussed the question of how presence technologies might better support the formation of knowledge.

But now the time has come, as we knew it would, to bring the curtain down on Keho, we hope we have informed and perhaps entertained you along the way, but most of all that in some small way we have stimulated debate and discussion about Presence research. So, like good lovers, we at Keho hope we leave you wanting more, but for now we shall have to bid you farewell, not goodbye we hope, but perhaps au revoir...

To stimulate, structure and support the Presence research community: for the community, by the community.

Keho has been edited and produced by the Peach project with the aim of stimulating debate and discussion about Presence research, its future direction and its impact on society. Peach is the Co-ordination Action for Presence, under the EU Research and Development Framework Programme 6.

Published twice a year, and aimed at the wider Presence research community, the e-zine is available to download free from the Peach project's website. The e-zine is called Keho because this word refers to the phenomenology of mind and body in the Finnish language.

We really want to hear from you - please send us your news, contributions, comments and opinions. Presence is a truly interdisciplinary field and Keho is here to help people to connect.

www.peachbit.org

Contact

Contact Keho directly by email:
keho@peachbit.org

Leave a comment on the Keho wiki:
http://keho.pbwiki.com

Keho is produced at the
Centre for Interaction Design,
Napier University, Edinburgh, UK

Contents

From Being to Becoming:
the Future of Presence Research

John Waterworth
Umeå University, Sweden

By altering the physical (including the body) the virtual (including the mind) and their inter-relationships, new developments in information technology are changing both the world we live in and our understanding of our selves. Presence research in the next five years will play a key role in helping us understand how this happens and what we are becoming.

Up until now, mediated presence has mostly been thought of as the illusion of being in a virtual world - with the implication that view carries that a virtual world is an alternative world to the physical, and in competition with it. In other words, that this illusion of being is more-or-less (depending on the degree of presence) the same experience as being in a similar situation in the physical world. But what is happening as new information technologies and their applications evolve is that the world changes - and we ourselves also change. Presence research will increasingly have this dual focus. The future won't be so much about being in a virtual or a physical reality, but about becoming something different in new situations that combine both. To conceptualise what is happening, we will need to

The future won't be so much about being in a virtual or a physical reality, but about becoming something different in new situations that combine both.

consider how and why we feel varying degrees of presence at all, in any kind of environment.

To understand the mechanisms of individual presence, we will continue to experiment with different degrees of first-person immersion for a wide range of purposes. We know that we can simulate a situation and that people will behave as if it's a physical situation. We already know that first-person VR can be extremely powerful in diagnosis and therapy, both mental and physical, and in skills training and the arts. Virtual reality often contributes something that other media cannot, an integration of mind and body in an interactive situation. The central mystery is the interplay between the form and degree of immersion, and the content portrayed - the overall situation in which people find themselves. We will see more experimentation directed by more interesting hypotheses than in the past, where the outcomes will actually surprise us. Psychological questions will be central, for example the role of presence in attention allocation, planning and carrying out intentional action. The situational contexts will often be novel, rather than straight simulations of similar unmediated situations.

Presence will increasingly come to be understood as what we experience when we attend to an external world in which the physical and the virtual are mixed - not in conflict as with immersive VR. The impact of ever more social applications of information technology will be particularly important for future research. Salient questions include: Are social and individual presence aspects of the same thing? Does one reinforce or tend to negate the other? The experience of self only develops through embodied perception and interaction with other agents. A very young infant may experience no differentiation of self from other - which includes everything perceived externally. Is that a state of total presence, or no presence at all? If the sense of self arises through social interaction with others, perhaps social presence opposes individual presence, but may also be a pre-requisite for experiencing varying degrees of individual presence?

Specific questions revolve around second-person presences of others. Current examples include virtual characters that help us do things or entertain us, and more or less personable robots. There are few second-person, interactive and virtual representations of self as yet (arguably the mediated mirror-image camera view provided by the Sony Eye-Toy™ game environment is a major first step in that direction). When the virtual image (or robot) is coordinated with my own body in a second person confrontation, how does this affect my sense of presence in various situations?

Increasingly we see ourselves represented in the third-person in social virtual spaces, though generally not in a realistic way, and with minimal body-virtual image coordination – as when mouse actions or arrow buttons control gross movements and pre-programmed gestures of our avatar. In these social spaces we can usually choose the appearance of our virtual persona from a selection of avatars or avatar parts. And these social spaces do give us a degree of co-presence with others, even though we are looking at ourselves from the outside, as a third person self amongst the third person selves of other people. This limited embodiment has opened up many opportunities to experiment with notions of self and personal identity over the last twenty years or so. But what happens if our physical body is closely coordinated with that of the avatar? Will there be a sudden shift in the quality of presence? How does the realism of the depiction affect the sense of self and of presence? Do I feel more or less present if my avatar looks and behaves like me, and how does this compare or perhaps interact with degree of body-avatar coordination? These are as yet open research questions.

We will increasingly study blended realities of the physical and virtual, in which not only do the participants respond to the environment, but it responds to them - including physically. The environments (or parts of them, such as a robot) will need to be aware of the people, and may need a model of their changing levels of presence. Will the environments then need their own sense of presence, to manage their shifts of attention between the external world and their own internal plans and other representations? If so, such technological models of presence could well become a major route by which our understanding of presence will develop.

The major programme for future presence research will be systematically to implement and experiment with these different view points: singular and multiple first, second and third person virtual representations of self and others. Factors such as degree of body-virtual image coordination, sensory-motor coupling and visual similarity (amongst other factors) will be varied and the impact on the sense of presence assessed (by means of triangulations of introspective, behavioural and neuro-psychological data). A particular focus for the interpretation of results will be the search for indication of quantum shifts in the quality of presence in response to specific manipulations of such independent variables. Theory building will be achieved through progressive model development and hypothesis testing. A satisfactory general theory of presence will take account not only of media and technology-related aspects but also of social, developmental and evolutionary considerations.

Presence 2008

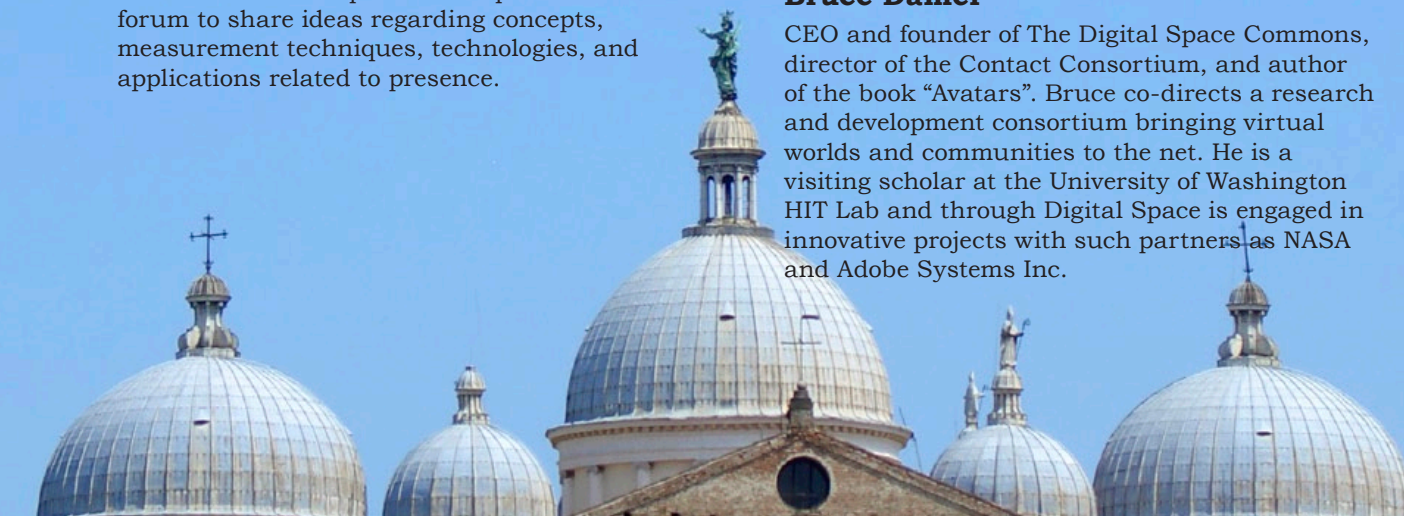
Padua, Italy

Presence 2008 is co-organized by the International Society for Presence Research (ISPR) and the Human Technology Lab (HTLab) at the University of Padua. The conference will be preceded by two parallel events:

The ethics of presence and social presence technologies (organized by the PASION and HTLab)

E-Mental Health. Second European Workshop on Cybertherapy, rehabilitation and e-mental health (organized by HTLab and Interactive Media Institute-Europe)

Continuing with the series of annual workshops, Presence 2008 will provide an open discussion forum to share ideas regarding concepts, measurement techniques, technologies, and applications related to presence.



Keynote speakers

Antonella de Angeli

Affiliated with the Manchester Business School, Antonella de Angeli has worked on several aspects of Human-Computer Interaction and Human Factors, including multimodal communication and natural language, trust in on-line transactions and conversational interfaces.

Paul Emmelkamp

Full professor of clinical psychology at the University of Amsterdam, Paul Emmelkamp is Co-Editor in chief of Clinical Psychology & Psychotherapy and serves on the editorial board or advisory board of a number of journals in psychology and psychiatry. His most recent contributions concern the application of information technology to the treatment of patients.

Luciano Floridi

Research Chair in Philosophy of Information at the University of Hertfordshire and Research Associate and Fellow in Information Policy, at the University of Oxford. Luciano Floridi is also President of the International Association for Computing and Philosophy (IACAP) and member of the Executive Board of the International Society for Ethics and Information Technology (INSEIT).

Bruce Damer

CEO and founder of The Digital Space Commons, director of the Contact Consortium, and author of the book “Avatars”. Bruce co-directs a research and development consortium bringing virtual worlds and communities to the net. He is a visiting scholar at the University of Washington HIT Lab and through Digital Space is engaged in innovative projects with such partners as NASA and Adobe Systems Inc.

John Urry

Distinguished Professor and CeMoRe Director at Lancaster University, UK. He directs the Centre for Mobilities Research at Lancaster. He is one of the founding editors of the new journal Mobilities, and has been the editor of the International Library of Sociology since 1990 (Routledge). His research interest include the changing nature of mobility within contemporary societies.

Invited Demo & Performance

Sasha A. Barab

Professor of Learning Sciences, Instructional Systems Technology & Cognitive Science, Barbara Jacobs Chair of Technology, Indiana University Prof. Barab is the creator and principal investigator of Quest Atlantis (QA), a 3D multi-user virtual environment (MUVE), which immerses students, ages 9-15, in authentic learning tasks as part of their daily school curriculum. QA combines strategies used in the commercial gaming environment with lessons from educational research on learning, situated cognition, engagement, motivation and play.

At Presence 2008 he will show his MUVE in a plenary invited DEMO

Galen Brandt

Avatar/artist and content creator for Virtual Reality, performer in artificial reality, with her creative work, Galen has been inspired by research on Presence and future emerging technologies since the early 1990’s. Galen supports and cooperates in many e-health projects with some of the most famous cybertherapy pioneers.

At Presence 2008 she will give a plenary invited Demo-Talk on Saturday 18th.

Presence 2008

Being Present in Padua

Eddy Capuano, Francesco Martino, Fabiola Scarpetta

Padova has a very ancient and complex history; said to have been founded in 1183 BC by the Trojan prince Antenore, it is the seat of one of the oldest universities in the Western World. Walking along the streets, you can sense the long tradition of art and science, admire the Cappella degli Scrovegni (Scrovegni's chapel), with its paintings by Giotto of the Last Judgement.

But as you continue your walk, don't forget to visit the Orto Botanico, a botanic garden dating back to 1545, the first anatomical theatre (Teatro Anatomico), constructed in 1594 and located inside the Bò, the old Palace which is also the University's main building, or the Specola Observatory, where you can find original astronomic instruments and from where, if you reach the higher level, you can enjoy a breathtaking view of the city.

You can also walk to the patron church, the Basilica di Sant'Antonio, hosting the relics of the Saint, or the nearby Prato Della Valle square, surrounded by 84 statues of notable personalities who lived in Padova.

But Padova is not only this...

Ifyou decide to spend your time in Padova undertaking itineraries that are a little bit less touristic, you will easily find something to appeal. In an artistic vein, don't miss two important exhibitions held in Padova in October: the *Manifestazioni Palladiane 2008* celebrates the anniversary of the famous architect 500 years after his birth. To get an overview of Palladian architecture we suggest that you visit the exhibition *Andrea Palladio, architetto padovano*, in the Basilica of Santa Giustina. A second appointment you shouldn't miss is the exhibition of drawings, drafts, tools and documents concerning the activity of the most productive architect in the northeast of the first half of the nineteenth century, Giuseppe Jappelli, at Musei Civici Eremitani (which also contains an archaeological and medieval-modern museum).

If you prefer the green of the grass and the blue of the open sky to the closed walls of a museum, a long walk on the banks of the Bassanello, a river in the near periphery of the city, will help you to relax and enjoy the landscape and the green residential area. At the end of the suggested path, you will arrive at Parco Iris, a nice, quiet park where to rest.

Do you love antique tableware or furniture? The Antiques Market that is set up in Prato della Valle every third Sunday of the month is the place for you. You can find books, dressers, paintings, collections, and everything you can think of, all covered by so much dust you could never doubt their originality.

Wandering around requires much energy and, therefore, we can't avoid mentioning where you can have a quick lunch, tasting the specialities of this area. The center of Padova is crowded with coffee bars and restaurants; among them we suggest you have a coffee or tea at the Caffè Pedrocchi, in front of the Bò. While the ground floor hosts the cafeteria, on the first floor you can delight your eyes with an elegant dancing room, nowadays used for conferences or art exhibitions.

If at the end of the day if you are still be able to stand, here are some suggestions about what to do after 8pm. Exploiting what is the traditional course of an evening in the city, you should stop in one of the main squares; Piazza delle Erbe, Piazza della Frutta, Piazza dei Signori or Piazza del Duomo, and enjoy the famous Spritz, an aperitif mixing white wine and soda. At this point you will need to decide between two possibilities: the first one consists of choosing a Restaurant and planning the after dinner, while the second one consists of comparing colour and taste of Spritz prepared in different pubs, in which case hunger will become the last of your thoughts. There are so many restaurants in the city that you could spend hours scanning the menus before deciding where to eat. As a tourist, you have to try typical food, such as tortelli di zucca dolce, risotto agli asparagi, polenta. Finally, if at the end of the evening you are still in the mood for enjoying some music, you might be interested in a piano concert taking place on October 18th at the Studio teologico del Santo, in the Basilica di sant'Antonio. Even if you are not an expert in music, you will surely enjoy the auditorium, a Christian chapel entirely covered by frescoes.

If you have more time...

You should absolutely pay a visit to Bassano del Grappa, the place where the famous Grappa, a traditional alcoholic Italian drink, was born and is produced, where wine bars are worth visiting and are easily accessibile from the street linking the bridge (which is also a historical site, and is called "Ponte di Legno" or "Wooden Bridge") to the center of the town. ♥

Peach Summer School 2008

July, Dubrovnik, Croatia

The 2nd Peach Summer School 2008 was organized by Peach with the local support of the University of Zagreb, Faculty of Electrical Engineering and Computing, Department of Telecommunications. The objectives of the Summer School were to: promote the public understanding of Presence research, foster market interaction, establish stable links with Industry players, share knowledge and vision future research areas, discuss Landscape and Roadmaps for future Presence research.

Speakers were:

Franco Tecchia is the head of the Visualisation Systems Group at PERCRO, working in the context of national and international research activities.

Mel Slater joined Universitat Politècnica de Catalunya as an ICREA Research Professor in January 2006.

Mavi Sanchez-Vives is ICREA Research Professor at the IDIBAPS (Institut d'Investigacions Biomèdiques August Pi i Sunyer)

Selim Balcisoy joined Sabanci University Faculty of Engineering and Natural Sciences in 2004 as Faculty Member and founded the Computer Graphics Laboratory (CGL).

Xavier Marichal is co-founder and the CTO of Alterface. His main areas of expertise include signal processing, multi-modal interaction and multimedia systems.

Ralph Schroeder is James Martin Research Fellow at the Oxford Internet Institute. He is currently completing a book titled *Being There Together: Social Interaction in Virtual Environments*.

Eric Meyer is a Research Fellow at the Oxford Internet Institute of the University of Oxford, UK. Meyer studies the social implications of e-science and e-social science as part of the Oxford e-Social Science (OeSS) project.

Jeremy Bailenson is director of Stanford's Virtual Human Interaction Lab. His main area of interest is the phenomenon of digital human representation, especially in the context of immersive virtual reality.

Dominic Massaro is Professor of Psychology and Computer Engineering, director of the Perceptual Science Laboratory, and Chair of Digital Arts and New Media M.F. A. program at the University of California, Santa Cruz.

Miriam Reiner is an associate professor at the Technion. She is head of the Technion Virtual Reality Touch lab, and studies neural and behavioral correlates of interaction in a virtual environment.

Fulvio Dominici is president of Ultramundum Foundation, a non-profit organization whose mission is the development and spreading of the UltraPeg technology for the three-dimensional television over the Internet.

Gianluca Zaffiro is activity leader for Telecom Italia on Presence topics in the European Coordinated Action of the 6th Framework Programme PEACH.

Igor Pandzic is an Associate Professor at the Department of Telecommunications, Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia and director of Human-Oriented Technologies Laboratory (HOTLab).

Marco Gillies works as a research fellow at University College London. His research centres on animated characters and virtual environments with a particular focus on non-verbal expression in animation.

Rod McCall is a research associate within the Collaborative Virtual and Augmented Environments Department at Fraunhofer FIT, Germany.

Claudia Redaelli works at ITIA for as dissemination and communication responsible and human factors specialist.

Martyn Bracewell is an academic neurologist at the University of Wales dividing his time between clinical practice and neuroscience research.

Paul Verschure is a research professor with the Catalan Institute of Advanced Studies (ICREA) and director of the Institute of Audiovisual Studies at the Universitat Pompeu Fabra in Barcelona, Spain.

Presence: Technologies and Applications

Peach Summer School

interactive session on presence applications

Here are extracts from some of the hand-written notes on posters collected during the interactive session on presence applications at the 2nd peach Summer School in Dubrovnik. This session had the aim of provoking discussion about existing and new applications of Presence technologies and knowledge.

Telecomunications

Virtual sofa to feel co-present with someone remote

Map to see where someone (husband, pupil, child) is to reduce anxiety

Live event broadcasted to remote audience with emotional feedback to the actors / performers

Military

Displays enhanced with augmented reality systems provide extra information to the soldiers

PTSD (Post Traumatic Stress Disorder

Post-battlefield simulation (what happens to the place and the people after)

Giving Bush and Bush-like humans virtual worlds, nations and people to play with. Immerse them in and forget them there!

Manufacturing and Design

Demonstrating design work (e.g. a virtual fashion parade)

Visualisation: design changes + effect

Remote product design, product usage previsualization (how do you look in your new car?)

3D reconstruction of products using ultrasonic sensors

Virtual testing / user experience studies

Marketing

Show product virtually, with full 360-degree view

Try clothes and other apparel in virtual showrooms, customize

Advertising in virtual environments (e.g. Second life)

Virtual salesman with psychological feedback

Experimenting commercial strategies on virtual audience

Training and Education

Role playing (situational training), e.g. hostage situations, military, fire-fightinig, first aid etc.

Learning physics through visual-haptic interaction in electrical / gravitational, magnetic new fields

Single teacher in multiple locations (conferencing)

Augmented Second life-like environments for continuous education. The teacher tele-transports to your grandmother's living room! (from e-learning to p(resence)-learning)

Medicine

Augmented visualisation to expand information available to surgeon while operating in the patients

Treat phobias and other mental problems by taking the patient into a therapist controlled virtual experience

Collaborative visual environment to plan Simulation of emergency situations e.g. car accidents

Giving to my real brain a virtual body if the real one is dead

Architecture and Construction

Reconstruction of cultural heritage

Prediction of future urban shifts

Road infrastructure design & crowd simulations

Environmental modeling, natural disaster modeling

Seeing installations in the walls (tubes, cables)

Making my tiny house look like a "castle"

Other application areas

Experiencing new physics, new bodies

Reconstructing social structures e.g. getting rid of the concept of space-tied "countries"

Gene swap (see what your babies are going to look like)

Virtual drugs experience

Social dysfunction escape valve

Feeling present with people who are no longer there

Explore and "represent" paranormal experiences

Entertainment

Virtual poker game (learn to read the bluff) with virtual characters

Virtual historical game – compete for rebuilding pyramid with haptics

Meet virtual celebrities (like Madame Tussaud) (and buy avatar of the encounter for home use)

Virtual sex (also training)

Virtual being a star in a rock band (be Jimi Hendrix everyday)

Virtual dancing with celebrities (with Nicole Kidman)

Create emotionaly-compelling activities which are NOT mimicing reality (situations that you can't do in reality) ♥

Presence
Present and Future Markets

12-13 November 2008

Turin, Italy

The Peach Industry Event is a conference and an exhibition where companies, researchers, investors, public officials and entrepreneurs gather to learn, to see, to touch, to discuss and to network around solutions, products, services and more based on Presence technologies.

Located in the Italian city of Turin, the aim of this event is to assess future market trends and opportunities by connecting researchers and market actors in industry. Involving commercial players in the early development stages of a new field is conducive to the efficient development of future technologies and enhancing market receptivity. Presence Research focuses on improving the quality of experience with virtual, mixed and augmented reality systems, with applications in several areas.

There is no registration fee for the Peach Industry Event, however, participants are requested to register well in advance due to the limited number of places available.

For more information about this event:

http://peach.tel.fer.hr/industry/peach_industry_event_home.htm

VIEW Conference

The Industry Event is co-located with the VIEW Conference; Digital Transformations, which will be held from Tuesday 11 to Friday 14 November 2008. This is an international event focusing on Computer Graphics and covering Digital Cinema, Automotive Design, Virtual Reality, 3D Animation & VFX, Architecture & Design and Games. This synergy creates an opportunity to access to even more contributions and to dive into a critical mass of mixed experts, business people and students.

VIEW 2008 is focussed on exploring the increasingly fluid boundary between real and digital worlds. Through lectures, meetings, tributes, exhibits, screenings and demo presentations VIEW will reveal the new digital frontier sweeping from cinema to architecture, from automotive design to advertisement, from medicine to videogames.

www.viewconference.it/

Edinburgh International Science Festival

6th - 18th April 2009

As part of the outreach work of the Peach Project, a series of events will be held in Edinburgh (UK) in the Spring of 2009. In collaboration with the Edinburgh International Science Festival, Peach will be presenting a discussion panel on presence issues and a major public event, details of which will be announced early in 2009. The festival will also provide an opportunity to launch the new *Presence for Everyone* publication that Peach is currently working on.

The Edinburgh International Science Festival is an annual event which aims to engage all of society in the wonder and value of science and technology, placing a particularly strong emphasis on giving children experiences of science that are inspiring and confidence building. The full programme of events will be announced in January 2009. **www.sciencefestival.co.uk**

WinG meeting

The last of the Peach Working Group (WinG) meetings will also take place in Edinburgh in April. These meetings are held each year and are intended as a way to obtain input from the Presence community. There are six WinG topics: Society, Science and Technology Watch; Interdisciplinary Actions; Protocols and Standards; Social Impact, Ethics and Legal Issues; Visions, Roadmaps, the ERA; and Public Understanding

Any member of the wider Presence research community is eligible to apply for WinG membership and can then take part in the meeting in April. There is also some funding available for attendance. For further details visit the Peach website. **www.peachbit.org**

What's Hot and What's Not *in Presence*

Hot

Confluence
We love it when a plan comes together.

Liminal Spaces
Where did that voice come from?

Relationships
Carbon, silicon, we love them all.

Mobiles
Presence in the palm of your hand.

Physical Browsing
Old Skool, but so much more satisfying.

Not

Blame Culture
Just because the end of the project is in sight doesn't make it acceptable.

Big Science
We all know that the devil is in the detail.

Total Immersion
It's lovely once you are in, yeah right.

Cliques
Presence goes soft and RAVE goes hard, its all so predictable.

Sustainability
The only project that you never do.

the Love editio

It is said that it is not what you know that is important but who you know – never has this been more true than in the world of social networking and Web2.0. Our presence can be measured by the number of friends we have on our Facebook, LinkedIn or Bebo homepages – popularity has never been more popular. Technology mediates many of our most intimate relationships, from a text message to a loved one letting them know we are thinking of them to a chance encounter with a kindred spirit, it is perhaps during these times that we feel most present.

The articles that make up the Love edition of Keho reflect the range of relationships mediated with and through technology. Keho has interviewed two filmmakers whose recent feature film, entitled Second Skin, explores the relationships formed among the players of massively multiplayer online role playing games such as World of Warcraft and Second Life. Victor Pineiro, producer and writer, and Juan Carlos Pineiro Escoriaza, director and editor, give us an insight into the lives of people for whom the virtual world and its social norms and relationships is every bit as real as the physical world. Helsper and Whitty report on a survey of couples as to their attitudes towards the use of the Internet. They discuss the extent to which couples trust each other and if they would ever check on a partners online behaviour. Clearly the degree to which intimate relationships are opened via the Internet is an evolving phenomena and one where the norms of behaviour are being discovered all the time. In a similar vein O'Keefe and Geis invite us into their growing romance that is currently being mediated via the Internet. The insight reveals the degree of presence experienced by the couple as they engage in remote courtship. Meanwhile back in the laboratory Schweinberger, Groten and Holldampf explore how to create a robot that can dance and critically one that can convey a convincing sense of presence to a human partner. Virtual dancing provides a new set of challenges for presence technologies if they are to convincingly achieve such a physical relationship. Finally Casey and Lawson describe a mobile phone based game called Gopher. Gophers are software agents that live in people's mobile phones and use cell location to have a physical presence in the urban environment. Their work explores the nature of the relationship between an agent and its human counterpart and, in the context of game play, their findings suggest that a careful balance of ownership is required. In the game this is manifest by the gophers forming no attachment with the host phone and moving freely from phone to phone, each time posing new tasks for the phone owner.

The articles in this issue of Keho reflect one of the most important challenges facing Presence research, that of communication and the ability to support all its subtlety and variety when expressed within the context of an existing and developing relationship.

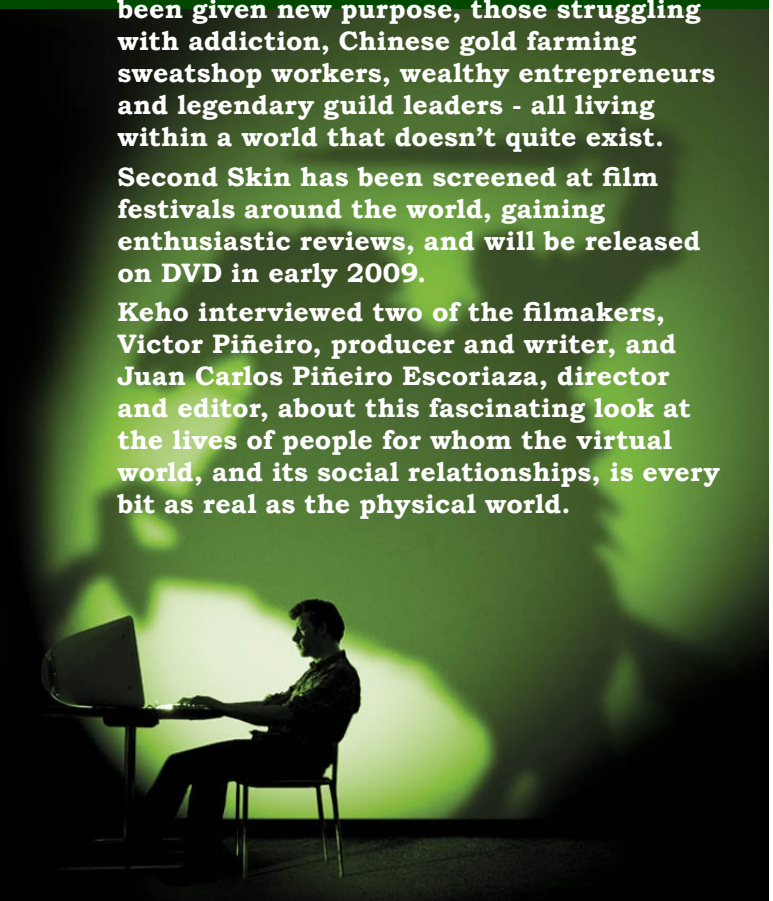
Second Skin

The recent feature film *Second Skin* introduces viewers to the real people who populate online virtual worlds in MMORPGs -massively multiplayer online role-playing games - like World of Warcraft and Second Life.

Couples who have fallen in love without meeting, disabled players whose lives have been given new purpose, those struggling with addiction, Chinese gold farming sweatshop workers, wealthy entrepreneurs and legendary guild leaders - all living within a world that doesn't quite exist.

Second Skin has been screened at film festivals around the world, gaining enthusiastic reviews, and will be released on DVD in early 2009.

Keho interviewed two of the filmakers, Victor Piñeiro, producer and writer, and Juan Carlos Piñeiro Escoriaza, director and editor, about this fascinating look at the lives of people for whom the virtual world, and its social relationships, is every bit as real as the physical world.



Keho:

Why did you decide on MMOs (massively multiplayer online games) as the subject matter for your film?

Juan Carlos:

I started a company with Peter Brauer called Pure West Documentaries in early 2005. By day my life was your classic poor filmmaker trying to get by story. By night (in late 2005) I was an aspiring Jedi in Star Wars Galaxies. My brother Victor had just gotten the game from a friend of his. Ben, my brother's friend, was really far ahead of us in the grand scheme of things. He was already a major contributor to a city, and deeply entrenched in a guild which was like a second family. The more we played, the more his double life fascinated us. By day he was a teacher who was about to get married, and by night he was an important guild officer with serious responsibilities. I was sitting there thinking about it, virtual economies, the implications of it on the future, and it was like two nodes converging. I love filmmaking. I love video games. What if we made a documentary about MMORPGs? I ran into Victor's room to tell him, and he loved the idea.

Keho:

Which do you think is more important for the people in your film, the game or the social aspect of the whole experience?

Juan Carlos:

I think a quote from Matt Firor, game developer for Dark Age of Camelot, says it best, "People play MMOs for other people playing MMOs." These games at their core are very entertaining social networks. Most times, especially at higher levels, you need a group to complete an objective. The game is conducive to it, and most people I've met who play MMO's say that some of their best friends are online. Probably half of those even claim their guild in game is much like a second family.

Keho:

Did you find the relationships between the gamers surprising?

Juan Carlos:

The very first interaction I had in an MMO with a stranger was pretty odd to me. He spoke to me, I got nervous, and left my new buddy stranded. I had an almost instantaneous flight response. At first the relationship gamers had with other strangers did surprise me. Then I put it in perspective with all the social networking sites like Facebook and MySpace. I didn't think it was so odd to meet strangers then. What did become clear was that many gamers said because there was such a level of anonymity they could open up more online than in real life. The cliche is that someone who doesn't "fit in" goes online and becomes social. What I saw was entirely different. People honestly opening up to others in ways that were near impossible in real life. One of the gamers we followed had cerebral palsy, and could not speak. In the real world he had trouble moving around, and had to be helped quite a bit. In the game he had many friends, and eventually became a guild leader. Guess which world was more satisfying to him? Guess where he felt like he connected with others better?

MMOs have the added appeal that you are sharing experiences with other people, rather than just reflecting on experiences

Keho:

One thing that was evident from the film was how much of their lives people devoted to gaming. How important were the avatars to the gamers and was the creation and representation of their identities central to the game?

Victor:

Overall I think a person's avatar and online identity is central to the game, though it manifests itself differently with different types of players. On the one hand you have power gamers, who want to have the most powerful avatar on the server. Though they might argue that they don't care about who they play online, they spend all of their time finding the weapons and armor to make their avatar mighty. Strip their avatar of their loot and I guarantee they'd be seething. On the other hand you have the social gamers, who often use their avatar as a conversation piece, or as an extension of their own personality. In WoW they might roleplay their Tauren, or else be a big, burly person in real life, or even play a Tauren to explore a different side of themselves. In Second Life you might be a more gorgeous version of yourself, or a furry, or Kool Aid Man. One of our interiewees, a Second Lifer, broke it down into three categories. Either your avatar is an almost perfect reflection of you, an exaggerated version of you, or a complete departure from who you are. Because almost all of these games are played in third person POV, you are always looking at your avatar - it really does become your identity, whether you're conscious of it or not.

Keho:

The people in your film were clearly engaged by the games they played, what do you think was more important, the level of representation of the game world or the fact that there were other people in the world.

Victor:

Of the seven main characters in the movie, I would say that six of them cared more about the fact that there were other people in the world. I know our couple was very social in-world, and spent a great deal of their time catching up with friends while they were in a raid, or playing an instance. Our Ft. Wayne gamers stayed in the game because of their huge network of friends, many who lived far away and who they primarily met with in the game. I think the addict in our movie also cared more about the real-life population in-world, but for him it represented a challenge to be the best player among real people - it made his goal to be the best all the more satisfying. However, all seven of the gamers prefer a specific game (World of Warcraft or Everquest 2) and are loyal to it because of its game world's level of representation (among other things).

Keho:

In the future will many more of our relationships be like the ones in the film?

Victor:

I think that inevitably most of our relationships will eventually be like those in the film. I met my wife online (not in an MMO) and more than half of my friends have also met their significant others online. While most met on dating sites or social networks, MMOs have the added appeal that you are sharing experiences with other people, rather than just reflecting on experiences (as you would on phone or email). I think MMOs will continue to bring more and more people together, both in a romantic and platonic sense. I've seen it over and over as we created this movie.

Edward Castronova (Associate Professor Indiana University, Author of *Synthetic Worlds*) had an amazing theory on one possible end to the human race, which I thought I'd include here, as it pertains to the question. This is from our interview with him.

"The most negative scenario I can see is that the virtual worlds will become so alluring that we would stop being interested in physically connecting and we wouldn't make any more children. So the end of the human race would look like... we'd have these environments where the physical body would be lined to the machine, and maybe in the old days a body would have to do somethig in order to have the synthetic layer operating properly. We would say, "Look computer, I have to go to the bathroom. You could program your computer to control your character for five minutes. And then you would extend that. Even though the physical body may die, the computer can be told to run the character as the person ran him. The computer would be given the AI to actually operate the character of the deceased person. So what's going on in the virtual environment doesn't look like it's changing at all to us. You're seeing the same players, but no one knows thats the living person who played the character Galahad died three years ago. No new children are being born, so the final moment would be the last human being on earth is dying and he's still wired up, but everyone else is actually dead. He's the last person and doesn't know it, and you can imagine his heart eventually stopping, and the computer continuing the routine. With full dignity the computer disposes of the dead body and then begins to operate the avatar. Humanity is gone, but in the virtual world all that's been seen is that a computer run little boy and the old man, and the old man closes his eyes and opens them again, now he's a computer, the little boy's a computer. And thats the future of life on this earth. Its all artificial intelligence from that point forward." ♥

www.secondskinfilm.com

Attitudes to Internet use among couples:

trust & taboos

Ellen J. Helsper
Monica T. Whitty

The Internet has the potential to change our lives, reconfiguring how we keep in touch with people and possibly changing who we meet. There is evidence that a considerable number of people are meeting new people online and that they are meeting up face-to-face. The Oxford Internet Surveys (OxIS) showed, for example, that almost a quarter of Internet users have met someone online who they did not know before.

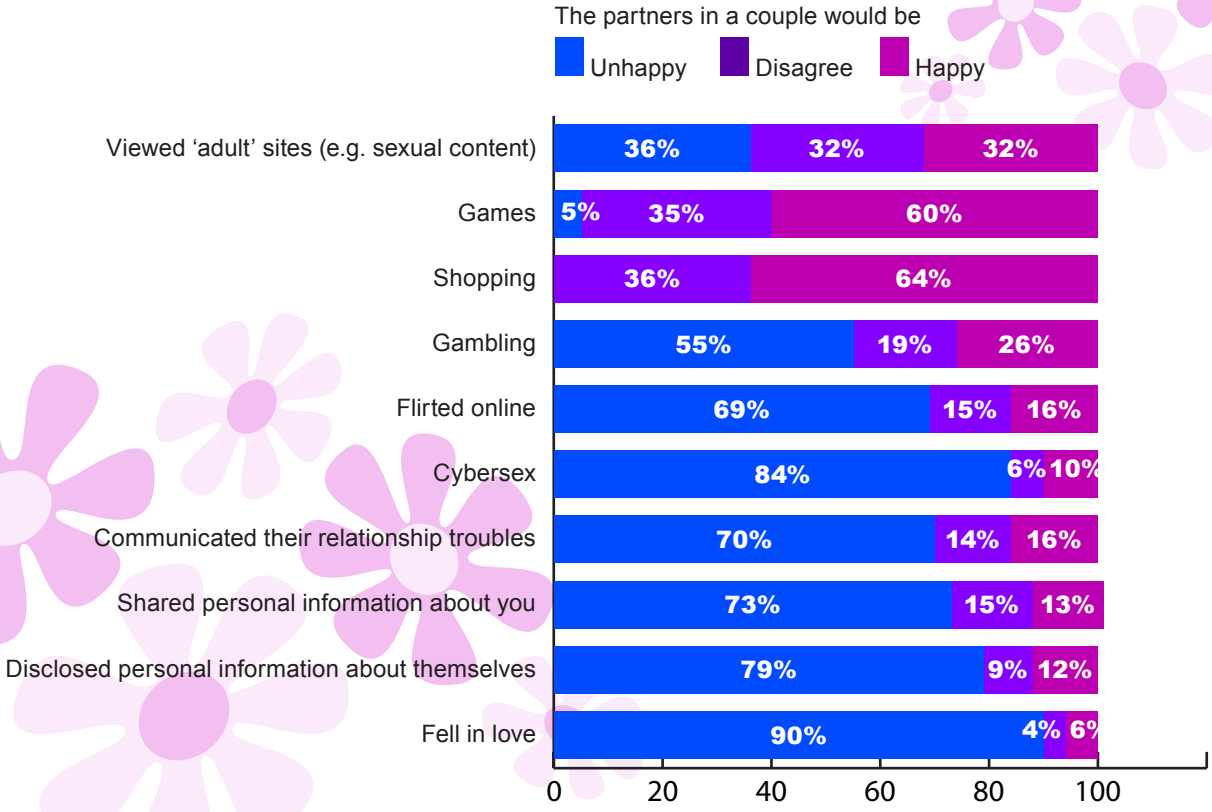
Early researchers were fairly skeptical about the benefits of online relationships arguing that there were not enough cues in interactions through computers that could convey the complex emotions needed to maintain intimate relationships. However, despite all the early negativity researchers across the globe have found ample evidence that people do make friends and initiate romantic relationships in cyberspace and often these relationships progress offline (Dutton & Helsper, 2007; McKenna, Green, & Gleason, 2002; Whitty, 2008). While we are left in little doubt that people can and do form relationships online, we know little about which role the Internet plays in intimate offline relationships. Obviously, this is important given that the Internet has become another mode of communication in many people's everyday lives.

The 'Me, My Spouse and the Internet' study that we present here collected basic information about how many married people have met their partners online. The survey used for this study was developed in the US by eHarmony, an online relationship matching company. The survey included measures related to psychological characteristics, values and marital satisfaction. Additional questions were added for this study to allow the authors to evaluate internet use and the role of the internet in marital relationships. The Oxford Internet Institute research team wanted to learn more about couples' netiquette; that is their expectations about each others' online activities and if some online activities were seen as taboo. Furthermore, we were interested in how couples use the Internet to monitor each others' online activities.

Married couples' use of the Internet

There is a dearth of research on married couples' use of the Internet, especially with regards to their use of it to initiate, develop and maintain their relationships. We know even less about couple's expectations of each other's Internet usage. Married couples are of special interest because psychological research shows that marriage often means a significant shift in the way people experience their relationship (Barber & Axin, 1998; South & Spitze, 1994). We therefore decided to focus on married Internet users in this study, the findings might not be replicable to other contexts.

To investigate the role of the Internet in maintaining married relationships we conducted an online survey with a representative sample of 920 married couples in the UK who used the Internet. One of the things this study showed was that in the UK about six percent of married couples who use the Internet have met their partners online. The percentage of couples who first met their partner online differed, not surprisingly, according to the age of the married couple. In younger couples almost a fifth of those who participated in the study met online.



Is the Internet a Source of Conflict?

We expected that partners within married couples develop a similar set of norms and values about Internet use just as they do for other types of behavior. In general these (unspoken) rules about how to behave online are called 'netiquette'. We would expect that the similarity in ideas about what is acceptable online is greater in married couples than between two random individuals. We investigated whether this was true for two types of online infidelity (i.e.online physical and emotional infidelities) and in relation to behaviors (Gaming, Gambling, Shopping) that are considered entertaining at low levels of engagement and potentially addictive when they exceed certain levels. By asking both partners how they would feel if their partner engaged in these activities on the Internet we were able to judge whether or not the partners had similar perceptions about what was acceptable online behavior and which behavior was unacceptable.

The chart on the left shows the percentage of couples that agreed and disagreed about the acceptability of certain behaviors. Online physical (Cybersex, Flirting and Viewing Porn) and emotional (Falling in Love, Disclosing Intimate Details, and Sharing Personal Information) infidelities were clearly and not surprisingly considered less acceptable than the potentially addictive entertainment activities.

Our findings support other research (e.g., Whitty, 2003, 2005) which argues that online infidelity is considered just as serious as offline infidelity. There is more disagreement about entertainment related behaviors and how acceptable they are, but statistical analyses using kappas showed that married couples still agreed more with each other than with people outside of the relationship about the acceptability of these behaviors.

ICTs to Control Intimate Relationships

After we established that certain behaviors were considered unacceptable within a relationship we figured it would be interesting to know whether or not partners followed up on this discomfort by checking up on their partner's behaviors.

Our study showed that most couples do not monitor each other. However, in a considerable number of the couples at least one of the partners checked on their partner. In 56% of married couples there was no monitoring whatsoever, nevertheless in a substantial number of couples (17%) both partners used some form of electronic monitoring on their partner. In 27% of the couples at least one partner had checked up on the other by reading their emails, reading their SMS messages, checking their browsing history or reading their IM logs. Reading emails and SMS messages was the most common sort of monitoring of the spouse's behavior, both done by about one fifth (20%) of married couples.

Agreement and Conflict in Intimate Relationships In Relation To Netiquette

While we found that people in intimate relationships establish a set of rules that guide online behavior; however, we are yet to determine what predicts the level of monitoring and agreement about rules established between partners. None of these behaviors are completely new; partners have developed similar norms about behavior for as long as there have been intimate relationships. Similarly, steaming open envelopes and following the partner to make sure that they were indeed going to the bridge club and not having an affair are old versions of monitoring, which have not disappeared.

Relationships have always been in need of the right balance between trust and vigilance and the Internet has not changed this. What might have changed is that now there is an 'electronic trail' of the things that we do and that potentially there are more ways in which our behavior can be monitored by others. It will be interesting to see how people start negotiating their way around these issues in relationships. As we get more familiar with technology and its possibilities, one of the first things that people starting a relationship might discuss is what the limits are of the personal and private and which online behaviors are considered acceptable. It is unlikely that this currently is the case because for very few married couples the Internet was a part of their life in the early stages of their relationship.

This paper builds on a paper under review at the Journal of Social and Personal Relationships.

Helsper, E.J. & Whitty, M.(under review) Netiquette within Married Couples: Acceptable Online Behavior and Surveillance between Partners.

References

Barber, J. S., & Axinn, W. G. (1998). Gender role attitudes and marriage among young women. Sociological Quarterly, 39(1), 11-31.

Dutton, W., & Helsper, E. J. (2007). The Internet in Britain: 2007. Oxford, UK: Oxford Internet Institute, University of Oxford.

McKenna, K. Y. A., Green, A. S., & Gleason, M. E. J. (2002). Relationship Formation on the Internet: What's the Big Attraction? Journal of Social Issues, 58(1), 9-31.

South, S. J., & Spitze, G. (1994). Housework in Marital and Nonmarital Households. American Sociological Review, 59(3), 327-347.

Whitty, M. T. (2003). Pushing the wrong buttons: Men's and women's attitudes toward online and offline infidelity. Cyberpsychology & Behavior, 6(6), 569-579.

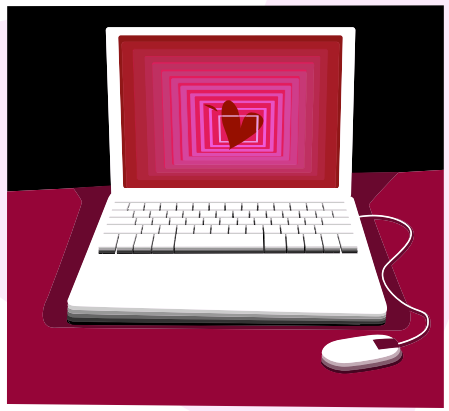
Whitty, M. T. (2005). The realness of cybercheating - Men's and women's representations of unfaithful Internet relationships. Social Science Computer Review, 23(1), 57-67.

Whitty, M. T. (2008). Liberating or debilitating? An examination of romantic relationships, sexual relationships and friendships on the Net. Computers in Human Behavior 24(5), 1837-1850.

Acknowledgements

The research presented in this paper was supported by a grant from eHarmony.com a US based online relationship matching company supporting research on the science of relationships This study is unrelated to any business development studies being conducted by eHarmony, and while sponsored by eHarmony, reflects topics of interest to the authors.

We would like to thank Monica Gerber and Bill Dutton for their contribution to the analyses and comments on this paper.



Sleeping together apart

Brian O'Keefe
Andrea C. Geis

It took roughly eight months, but we finally fell asleep video chatting. Sleeping on video chat would not seem the most natural or obvious thing to do - but of course it would depend on the person on the other end. That person is the most beautiful, most wonderful, most intelligent person I have ever met. No, I am not nattering on with some form of British sarcasm coupled with a wannabe sense of clever irony. I am simply talking about a girl - as most boys do - a girl that has and continues to impact my life in the best of ways.

This is a story about meeting a beautiful girl at a party and leaving the very next day. Sure, this kind of situation happens nearly every Saturday or Sunday morning all over the world. However, this story is not about a one-night-stand; it's about meeting someone you could deeply love, then the next day, returning to your day-to-day lifestyle across the Atlantic Ocean.

Not surprisingly, being in love prompts individuals to come up with clever ways to tell each other they are present across great distances. A simple post arriving unexpectedly at my office with Drea's handwriting on the box would tell me she was there. A bouquet of red roses waiting at her house would tell her Brian wanted to be there. Accepting an incoming call coming up as "unknown", then hearing her delicate voice, "Hey Brian!", gave me an immediate sense of her being here. And our daily emails, collected over many months, would be concrete proof that being there and here was not enough.

During the same time every Sunday afternoon and evening, we would meet for our video chat date. For anyone, video chat can be a wonderful place to see the people you care about. In our case, video chat brought about the strongest connection either of us knew about being present - no matter how removed from physical presence we may have been. Our relationship was founded on being "long distance" and regardless of our very brief physical encounter at a party; we always knew that I would return to my place across the Atlantic. As relationships often go, it was not easy. Our visual presence would usually coax a longing for something more tactile. More and more, Drea seemingly became trapped on a 2-D surface, only to be a weekly image on a computer screen.

Although being in a lover's physical presence is ideal, video chat gave us opportunities no other medium could deliver in the same way. Video chat allowed us to do what lovers often do; stare at each other without saying a word, kiss the camera goodnight, play silly screen capture games by my futile attempt to push the window open (see left picture), watch the Super Bowl TV commercials because they were not available here, or detect unique facial subtleties - like the little scar marks from running into barb wire as a child. Our time together on video chats, or the presence we gave each other visually, lasted much longer than an email, a quick chat on a costly phone, or a delivered box of gluten free oatmeal cookies; our presence lasted for as long as we wanted it to, or until one of us fell asleep. ♥

First steps:
virtual partner dancing

Andreas Schweinberger
Raphaela Groten
Jens Hölldampf

What we simply call partner dancing is probably one of the most complex and subtle forms of haptic interaction between humans. A certain kind of ambivalence seems to inhere the moves and gestures of a dancing couple, despite the seemingly rigid structure of rhythm, gender roles, and steps learnt. Even if it is the male partner who takes the lead, plans and signals the direction changes, the scheme of leader and follower is only a loose corset for dancing couples. The female partner cannot be led without response; the movements initiated by the leader immediately entail an active feedback. What looks as simple unilateral leadership reveals to be a complex interplay of mutual adaptation. When for instance both partners have to find and keep the right distance between them, the amount of pressure and tension is often a matter of 'negotiation'. Through an exchange of haptic signals the couple constantly defines its closeness in the movement. It enters into a dynamic equilibrium where the partners can even close their eyes without loosing track.

When we want to leave the real dance floors and start dancing with virtual partners in virtual environments, the recreation of this haptic exchange becomes the major challenge. A tempting visual representation certainly plays an important role, but believable haptic feedback is primordial for evoking the very special feeling of arousal, and closeness typical for dancing.

This leads us to the first step in virtual dancing: one of the physical partners needs to be replaced by a virtual model. As said, the model has to cover

both, the visual and the haptic feedback. In the following we will focus on the replacement of the haptic feedback, and in particular on the feedback of the male part.

But before creating the virtual model of a dancer and connecting it with a real partner, one needs to establish appropriate channels and interfaces between the real and the virtual dance floor to transmit the various sensory cues. Here researchers still have to deal with a major bottleneck: While for what we see and hear the doorway stands wide open, we still spot through a key-hole for what we mean to touch. At present, the capacities of visual and acoustic displays still go far beyond of those of their counterparts in haptics. So the main question is how and by which means we can create direct personal contact when one of the partners does not exist physically.

One approach to replace the human counterpart is to use a mobile platform equipped with two haptic force-feedback arms. The platform becomes the media between the real dancer and the virtual model enabling the bi-directional flow of haptic information. It dynamically acts and reacts as embodiment of the virtual model.

But how can this platform learn to dance and even guide the female partner? In a first approach the trajectories of the male hands are recorded while two real persons are dancing. The figure below shows the recorded position data for the female (red) and the male (blue). The crucial points of the recording are the hand contacts. In the following step their trajectories are implemented on the platform which allows replaying the positions exactly. As the male partner will be replaced by the platform during the replay of the interaction, only his hands are of interest.

By simply replaying positions, the virtual male partner (platform) is able to render exactly the different sequences of the dance and to provide haptic feedback to a real female partner holding its “hands”. The main drawback of this solution is the fact that no interaction in form of bilateral information exchange takes place. The model does not react, thus it does not adapt the trajectories of the hands in respect of the female’s actions.

In the second phase step, the model of a responsive virtual dancing partner is constructed from the recorded data. Therefore, the movements of the dance are put into an abstract description. Following the exact positions, as described in the replay before, is no longer necessary. The dancing figures set a general framework for where to move and at what time. How the movements are actually performed depends on the forces exchanged between the model and female partner. Both partners, real and virtual, jointly follow the movements according to the rhythm of the music.

As the virtual model takes the lead, it also has to play the more active role: it has to initiate the changes between the dancing figures and announce them to the partner. Moreover, it must be able to handle unforeseen situations, such as a mistaken command or irregularities in the step sequence. In the ideal case, the interaction between platform and human is equivalent to the felt naturalness and fluidity of the real interaction. The robot platform becomes haptically ‘transparent’ to the human user.

However, the platform also sets a certain number of physical constraints to the interaction. Its ‘anatomy’ conditions the number of contacts between the real and the virtual partner. In intimate dancing, like a waltz, the partners feel at least three contacts: the hand, the hip and the shoulder. Conveying this feeling of closeness and intimacy in a virtual environment still is a major challenge. As the body of the platform is not humanlike, the focus had to be put on dances which involve two-hand holding rather then the intimate dancing posture. This constraint rules out a large majority of the usual standard dances. On the other hand, the platform clearly supports the dynamic aspect of the arm movements. Therefore, a specific dance had to be found, where the partners keep distance but stay in permanent contact over their hands. After a long selection process the DiscoFox was chosen, a free variation of the Foxtrott from the late 60ies, where the partners hold each other by their hands following a sequence of basic steps.

Swinging with this platform is still far from the experience of the real dance floor. A lot more has to be learnt about the exchanged signals in basic haptic interaction. This knowledge will further enhance the capacities of the platform for displaying more flexible trajectories adapted to its female partner.

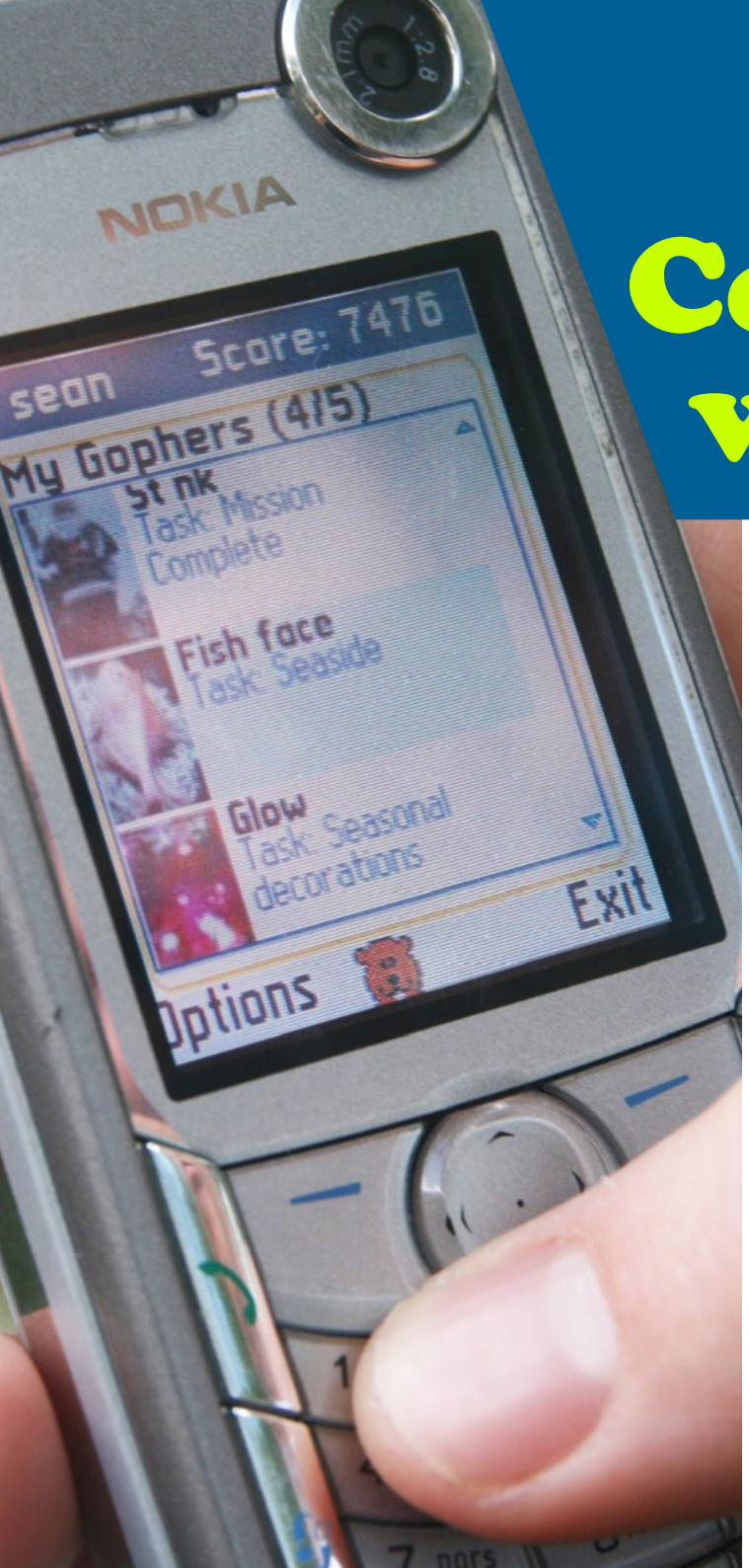
In the final scenario, acoustic and visual feedback over headphones and HMD will complete the multi-modal experience. Once the bulky structure of the platform is visually masked by the avatar of an attractive dance instructor, it’s the fluidity of the movement that makes the difference. Then, dancing with our favourite star could be an exciting prospect, in particular when it is not only a question of seeing and hearing.

Technische Universität München – Institute for Automatic Control Engineering

Acknowledgements

Research work carried out by the Integrated Project IMMERSENCE supported by the 6th Framework Program of the European Commission (FP6-IST-27141)

www.immersence.info



Connecting with Gophers

Sean Casey

Shaun Lawson

The LiSC Social Computing research centre at the University of Lincoln, UK is focussed on how society and individuals interact with technology and the impact such interactions have. We are particularly interested in mobile devices and locative services, pervasive and serious gaming, interaction with robotic and ambient devices and also in how special populations (including older people and people with Asperger's Syndrome) might use technology in different ways. The work draws on social psychology and other sciences which attempt to provide theoretical explanations for social interactions between humans, creatures and digital devices and media. Here we discuss the Gopher Game; a pervasive, social computing experience based around user-generated content, which was recently developed and trialled at LiSC.

Gophers are digital agents which people can interact with using mobile phones. Using cell phone location, these creatures are given a physical presence within an urban environment. As players travel around the city, they are encouraged to pick up nearby gophers and participate in their user-assigned tasks. Players must engage with the gophers using situated user-generated content, comprising of camera phone images, text messages and geospatial tags, to help complete tasks and progress in the game. The experience aimed to investigate the exchange of user generated content in pervasive entertainments, but the implementation of this study raised some important questions about ownership in these settings.

Establishing a Sense of Ownership

Attachment to digital game characters is not a new concept and can exist where users have crafted and moulded the creature over time, whether it is an in-game avatar in a massively multiplayer world, or a new life form generated in Spore [3]. The bond between player and character is made particularly powerful in Gophers by

the pervasive nature of the agents. Gophers are present with the player throughout their everyday lives and real world experiences in a player's life are reinterpreted and shared with the gopher in the form of situated photos and text. Each gopher stores these interactions in a private web log, which can be seen as a parallel narrative co-existing with the narrative of a player's life. The blogs, accessible by those who have encountered the agent, allow users to continue monitoring 'old gophers' long after they have finished interacting with them, allowing for a continued sense of ownership.

A sense of connectedness between users and gophers can stem from a number of foundations in the game. Firstly, players may routinely cross paths with a particular gopher, sensing its presence on their handset. Alternatively, a player may choose to invest effort in a gopher, by picking it up and providing content to help with its task. Finally, a player might invest some time creating their own gopher, providing it with a personalised task, name and image and releasing it into the world. Each of these scenarios can help build a sense of connectedness between player and gopher. Because each gopher has a single narrative associated with it, they can only reside in one location and on one device at any time and this connected relationship between a single player and gopher can be interpreted as a form of 'ownership'. The use of the player's mobile phone as a conduit for interaction – a highly personal device in itself, further promotes these feelings of ownership.

Tasks that occur in the real world require physical actions from the player to achieve them – for example, travelling to a certain place, finding out some new information – to an extent, the task could be said to drive a player's real world narrative. This reciprocal relationship between players and characters is much more akin to the strong social ties we maintain in real life. Adding to this relationship, a gopher responds to player interactions with a piece of relevant content from its past experiences, offering a two sided dialogue; this content is retained for the rest of the time the gopher is active, so in effect a gopher's 'personality' is built from the amalgamation of all its past experiences. Making your mark on a gopher in this way is akin to marking a location with a graffiti tag. To allow these connections to continue after a gopher's task is complete (and avoid the disappointment of death associated with virtual pets), a player is able to 'retask' it by assigning a new mission.

Shared ownership is also an important part of play in Gophers. Tasks often require effort or specific knowledge from multiple players to be successfully completed – this can lead to ownership being spread across multiple contributing users. This can make it difficult for a user to recapture a gopher they interacted with in the past and means that many gophers will have been owned by multiple players across several locations. These player-character relationships have the potential to create a tension of ownership between new and old owners, but can also be harnessed to create a more competitive, or social play field. A common play style in early revisions of the game was to collect gophers as a commodity which could be traded; to reduce this and encourage a more shared ownership, a boredom threshold forces the possession with the player to break after a certain time of interaction – once the period has been reached, the gopher leaves the phone.

Managing Ownership

A sense of ownership towards gophers is an important influence to how users socially interact using agents within these experiences; complete ownership of these entities by single players will lead to individualistic, non-social interaction styles and a sparse, uninteresting digital landscape to explore. Conversely, lack of ownership where gophers are equally distributed amongst players is also bad – a setup where players are not concerned about the outcome of their tasks would lead to rarely completed tasks and a lack of personalisation/character to the gopher's experiences. To achieve a thriving community of digital agents, these feelings of ownership are an important commodity which needs to be a carefully balanced part of the gameplay.

Future Initiatives

The gopher game was trialled in 2007 and revealed important insights into how designers can make use of situated, user-generated content to promote sociality and collaboration in mobile settings. Continued development of these concepts are being used in the development of future social games in LiSC, such as Familiars [2].

References

[1] Casey, S., Kirman, B., Rowland, D., The Gopher Game: A Social, Mobile, Locative Game with User Generated Content and Peer Review, (2007), Proceedings of the 2007 conference on Advances in Computer Entertainment (ACE).

[2] Familiars, (http://familiars.eu)

[3] Spore (2008). Electronic Arts, (http://www.spore.com)

Can you see what I know?

On September 23rd and 24th 2008, the Virtual Knowledge Studio for the Humanities & Social Sciences, one of the research centres of the Royal Netherlands Academy of Arts and Sciences, organized a special workshop in Amsterdam during PICNIC08 about visualization of knowledge. This PICNIC Special focused on making interests in knowledge visible and on the implications of failure by design. When creating and orchestrating mediated presence, it is mostly the visualization of data that is experienced. In these visualizations certain interests are magnified, while others are put in the background. Moreover, visualization often excludes the representation of uncertainties and ambiguities while failure by design is a vital dynamic of many processes. Taking the perspective that knowledge production evolves in social interaction, presence technologies face the challenge of facilitating expressions and exchanges of many kinds of pleasant and unpleasant knowledge produced by people: cognitive, emotional, physical, social and tacit.

To develop our understanding and harvest new approaches to these questions, around 60 people gathered at the cross media event PICNIC 2008. Scientists, academics, designers, business people and artists collaboratively explored the theme in a workshop with the title Can you see what I know? This article is a short impression of experiences and outcomes of this workshop that was held on the Westergasfabriek terrain in Amsterdam.

Caroline Nevejan, Paul Wouters, Anne Beaulieu, Ernst Thoutenhoofd, Charles van den Heuvel

Organization: Jeannette Haagsma
Images: Kofi Aidoo, Clifford Tatum

Inspiration

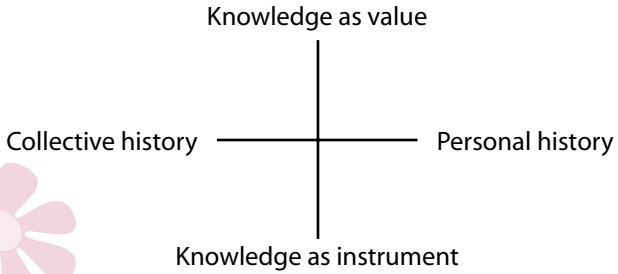
Everyday life is becoming more and more mixed with technologies used for knowledge production. People are adept at a variety of technologies that enable them to meet, interact and share information. In the workshop participants explored how these new dynamics in personal and professional activities affect knowledge. How is knowledge created, with whom is it shared? Where is knowledge shaped, and for what purposes? When is knowledge shared, and with what consequences? In these cognitive/technical practices, can I see what you know? How do we know what we know? Which knowledge is not shared when using technology? What is the position of technology in the exclusion or attrition of particular knowledge configurations?

The many ways in which existing knowledge can be made visible have a direct bearing on how new knowledge can be generated and shared. In the workshop we focused on two key problems:

- How interests are made visible and thereby recognizable?
- How to deal with, and accommodate, failure and uncertainty?

Both problems are crucial for further development of the Web as a medium for creating and sharing knowledge. Presently, interests are often made invisible. This holds both for interests that have been built implicitly into knowledge products and for interests knowledge producers and users may have. This invisibility makes it difficult to assess the value of particular statements, products or research programmes. It supports exaggerated claims of universality of knowledge and seamlessness of networks, where awareness of seams and context may be more fertile. The second problem, failure, refers to the potentially productive role of things that go wrong and the explicit recognition of uncertainty as a useful moment for engaging reflexivity in research and design. It is obvious that unsuccessful experiments, unexpected outcomes, and unanticipated responses have been critical in the creation of genuinely new concepts and objects. Yet, most information environments and products are built on the (shaky) pillars of success and certainty. As a result, it is difficult to accommodate fiascos, unexpected developments and uncertainty, although these are happening all the time. We wish to explore design and research strategies that explicitly embrace failure, expecting that this might open up novel forms of engaging knowledge technologies.

The dynamics of knowledge are shaped by the interaction between two dimensions as illustrated in the following matrix (see illustration below). The first dimension refers to the goals of knowledge production: is knowledge a value in itself or is it in the first instance an instrument for other purposes? The second dimension refers to the "owner" of knowledge: is it an attribute of a community or group or is knowledge primarily a personal matter? In new forms of knowledge representation on the Web, we witness interesting novel interactions along these two axes. In the workshop we explored how the two key questions can be developed by positioning possible design strategies in this analytical matrix.



The Workshop

The workshop methodology was built upon the experience of two previous projects, CO-OP and (UN)Common ground, in which artists, designers, business people, academics and scientists successfully collaborated (Brickwood, C., Ferran, B., Garcia, D., & Putnam, T. (Eds.). 2007, Zijlmans, K., & Van den Zwijnenberg, Rob (Eds.). 2007). Inspired by keynote presentations, workshop participants collaborated in small teams of different disciplines for several hours.

The first keynote was delivered by Garrick Jones, who explored interdisciplinary collaboration while his words were simultaneously visualized by support acts performed by seven "scribes": one drawing, one googling, one producing models of interaction, one using a speech recognition application creating tagclouds, one using a wacom tablet and the remaining two support acts sketching on paper hung from the wall. Next to these seven scribes, Garrick also illustrated his presentation words with a PowerPoint presentation. The second keynote was delivered by Tara McPherson, who showed and explained the making of *Vectors*. This a multimodal academic journal in which scholars and artists collaborate in multimedia not only to present research but also to create new methodologies. In doing so they are merging form and content to enact a second-order examination of the mediation of everyday life.

During the first day more specific presentations around failure and visibility of interest were held by Bas Raijmakers, Eric Kluitenberg, Kitty Zijlmans and Esther Polak, while the teams were analytically exploring dilemmas and artistically drawing and building 'issue-scapes' and regularly presenting their work to each other. Issue-scapes are 3D models of the dilemmas and perspectives that the teams developed. They returned the next phase of the workshop as tools for thinking catalysts. Around the issue-scapes new collaborations and research proposals evolved.

Outcomes

When discussing the issue-scapes it became apparent that taking a cultural perspective on knowledge production made it actually easier to collaborate between disciplines. It was noticed that none of the issue-scapes reflected utopias of knowledge production, but rather presented 'limited autonomy' and 'trusted environment' as starting points for analysis and design. All issue-scapes were reflecting (or trying to deal with) the messy mess of infrastructures as they are predominantly perceived today. One of the issue-scapes, on 'frog methodology', suggested that when having to deal with complex situations it may be more interesting to focus on facilitating a travel trajectory through complexities instead of 'mapping them flat'. Another issue-scape asked attention for the visualization of slow processes, in which effects are hard to sense, like climate change. It was argued that visualization of interest, in terms of the stakes involved, actually affects the ways in which these interests are lived. In nearly all issue-scapes, sweet candies were used and participants agreed that the creation of 'goodies' and 'sweetspots' is vital in any knowledge system for it to function. At the end of the workshop, several projects and collaborations were identified: Architecture of interaction of intercultural communication; Visualizing and experiencing medical imaging; Sensory judgement of risky proposals; An idea collider; Strategies of bad intentions; Food transparency; Modelling versus iterative processes.

Over the next few months these ideas will be pursued and possibly turn into research projects. If you are interested to participate and/or learn more about *Can you see what I know*, please contact the Virtual Knowledge Studio in Amsterdam, the Netherlands.

References

Brickwood, C., Ferran, B., Garcia, D., & Putnam, T. (Eds.). (2007). (Un)common ground - creative encounters between sectors and disciplines. Amsterdam: BIS Publishers.

Zijlmans, K., & Van den Zwijnenberg, Rob (Eds.). (2007). CO-OPS - interterritorial explorations in art and science. The Hague: NWO.

Websites:

http://www.virtualknowledgestudio.nl
http://www.vectors.org
http://cyswik.blogspot.com/
http://www.picnicnetwork.org/page/22293/en

events

Interact 2009

August 24-28, 2009

Uppsala, Sweden

The twelfth IFIP conference on Human-Computer interaction. The theme of the INTERACT 2009 conference addresses the issue of continuity between theory and practice in Human-Computer research. The main focus is on research that is reflected in real-world applications.

Suggested topics for contributions are (but not limited to): Intelligent Environments, End User Development, Usability Evaluation, HCI and Web 2.0, Context-dependent systems, Multi-Modal Interfaces, Tangible Interfaces, Ubiquitous Computing, Human Error and Safety, Visualisation Techniques, Multi-User Interaction/ Co-operation

www.interact2009.com

Stimulate Collaborate. Create.

SIGGRAPH 2009

New Orleans, Louisiana, USA

Conference: 3-7 August

Exhibition: 4-6 August

Now in its 36th year, the SIGGRAPH conference is the premier international event on computer graphics and interactive techniques. SIGGRAPH 2009 is expected to draw an estimated 25,000 professionals from five continents to New Orleans, Louisiana.

www.siggraph.org/s2009

CHI 2009

Digital Life New World

April 4-9, Boston, USA

Computing is reaching into all parts of modern life. CHI 2009 will be the showcase for the technologies, designs and ideas that will form the new world of digital life. There are many exciting new ways in which computing can improve life in many parts of the world. CHI 2009 will be the place to see that happen.

CHI 2009 will be held in Boston, MA, USA. Many of the pioneering computer companies had their home in the Boston area. It is also the home of some of the great computing research universities.

www.chi2009.org

IMMERSCOM 2009

2nd International Conference on IMMERSIVE TELECOMMUNICATIONS

May 27-29, University of California, Berkeley, USA

The aim of IMMERSCOM is to promote multi- and cross-disciplinary research on capturing, processing, analyzing, coding, communication and rendering of rich audio-visual content in order to enable remote immersive experiences of people, objects and environments. The body of technologies that enable such immersive experiences is collectively referred to as Immersive Telecommunications Technologies. Applications of these technologies are varied, and include tele-presence, industrial automation, health care, education, and entertainment. Many of these are beginning to be viewed as green technologies.

Topics under the scope of the conference include but are not limited to: Scene Capture for Immersive Communication; Interfaces for Immersive Experiences; Computer Vision and Scene Understanding supporting Immersive Communication; Multimedia Coding for Immersive Communication; Networking/Communication for Immersive Applications; Applications, Systems, and Architectures

www.immerscom.org

IT Revolutions 2008

17th -19th December, 2008, Venice, Italy

In December 2008 (17-19th, Venice, Italy) IT Revolutions will bring together funding agencies and government representatives from around the world - with companies and the most visionary academic contributors to the IT Revolutions - to set the future directions in:

ensuring a smooth transition while enabling IT to unleash its full power in serving the world. The premier conference of the Institutefor Computer Sciences, Social-Informatics and Telecommunications (ICST) - IT Revolutions - will account yearly on the progress made in

building critical mass for the radical shift towards an IT-driven future while ensuring that we embark responsibly onto the momentum that will be turning the world around.

The Conference is clustered around major Themes concerned with the disconnect between old and new ways reshaping critical aspects of our world at this turning point – in search for innovative solutions that can capitalize on the impact of the tumultuous IT enabled transformations.

Championed by a prominent leader each Theme will evaluate where we are on the path to turnover, as this requires coordinated efforts, government S&T representatives, and; research funding agencies from all continents will address the major areas of concern in dedicated panels whose deliberations will be published as joint recommendations

Ensure a smooth transition

Exploring the core elements needed to encourage sustainable change as new systems are introduced and grounded in the practice environment. Motivational factors, incentives to embrace the change as well as alignment with the societal needs will be debated in panels and workshops with industry and academia including funding agency and government representatives.

Point to the Future

Foresight presentations from most visionary contributors to the major areas will push the limits of the achievable through keynotes and position papers that underline factors enabling the IT revolution to redesign the world economy and society.

Position Papers debating the paradox as it relates to a Theme, are solicited. We seek technical papers clearly identifying how the specific contributions fit to an overall working solution. All submitted papers and posters will be rigorously reviewed by the committee set up by the Theme Chairs. Conference language is English. All paper submissions will be handled electronically. Please visit the conference website for submission details related to each Theme.

Publication:

The peer reviewed position papers will be published by Springer in the series of Lecture Notes of ICST (LNICST). In addition, the recommendations and guidelines resulted from the Forum deliberations will be published by ICST. At least one listed author on the final paper must register for and attend the IT Revolutions Forum.

Exhibit:

In addition to the Workshops and Panels – industry will have the opportunity to expose their latest products and present to corporate attendees, industries and the highest level of academics, forging the way for the IT Revolution in society.

For further information please contact ICST at:

exhibition@icst.org

events

Presence in the news

Hi def viewing - real or hyper-real?

"If TV is like a drug, as some say, then I think HDTV must be like crystal meth, delivering a rush of hyper-clarity and sharpness straight to the head."

The Boston Globe, June 2008 *(link)*

Virtual weddings

"Cyber-marriage is the latest entrant in the search for online bliss as hundreds of thousands of young online devotees are sampling virtual marriages and family life. The phenomenon has become so popular in China that it even has a name: wanghun. Whether it's for real or for fun, how much of this marriage role-playing simulation is enough -- and when does it go too far?"

Internet Evolution, June 2008 *(link)*

Online volunteering

"A new army of 'virtual volunteers' is helping charities reach out to young people to offer advice or persuade others to give their time in a more practical way. Volunteers give their services online in what one charity says is an exciting way forward for organisations that can struggle to find enough people with time to commit."

The Guardian, June 2008 *(link)*

You're never too old for virtual love

"Like a small but growing number of older Japanese singles, Kawamura (65) has turned to an online matchmaking service in search of someone to share his "second life".

'My horizons have widened and my life is richer because I can make friends,' said Kawamura, who is now dating three women, two of whom are nine years his junior and one who is 62."

The Star online, June 2008 *(link)*

Poor earning virtual gaming gold

"Nearly 500,000 people in developing nations earn a wage making virtual goods in online games to sell to players, a study has found."

BBC technology news, August 2008 *(link)*

Virtual Boyfriends for Japanese Girls

"In Japan, girls are crazy over virtual boyfriends. Webkare (Web Boyfriend in Japanese), a mix between a social network and dating simulation site, is Nippon's newest web sensation."

Washington Post.com, September 2008 *(link)*

Major new arts, technology and science venue opens

The Experimental Media and Performing Arts Center (EMPAC) in New York state is a place and a program where the arts, technology and science will challenge and transform each other. Founded by Rensselaer Polytechnic Institute, the nation's oldest technological university, EMPAC draws strength from being part of a great research university. It will offer artists, visiting scholars, researchers, engineers, designers, and audiences opportunities that are available nowhere else under a single roof, providing unsurpassed facilities for creative exploration as well as for research in fields ranging from visualization to immersive environments to large-scale interactive simulations. EMPAC operates nationally and internationally, attracting creators from around the world, and sending new artworks and innovative ideas onto the global stage. Linked to a massive supercomputer, EMPAC's potential for art and science spans the physical and virtual worlds and the spaces in between.

http://empac.rpi.edu *(link)*

Spot the Cave

In the last issue of Keho we gave away a free cut-out-and-keep cave for you to carry out your own lo-fi presence experiments. Over the summer these caves have been travelling the globe in the name of academic inquiry. Here are some photos from their experments.