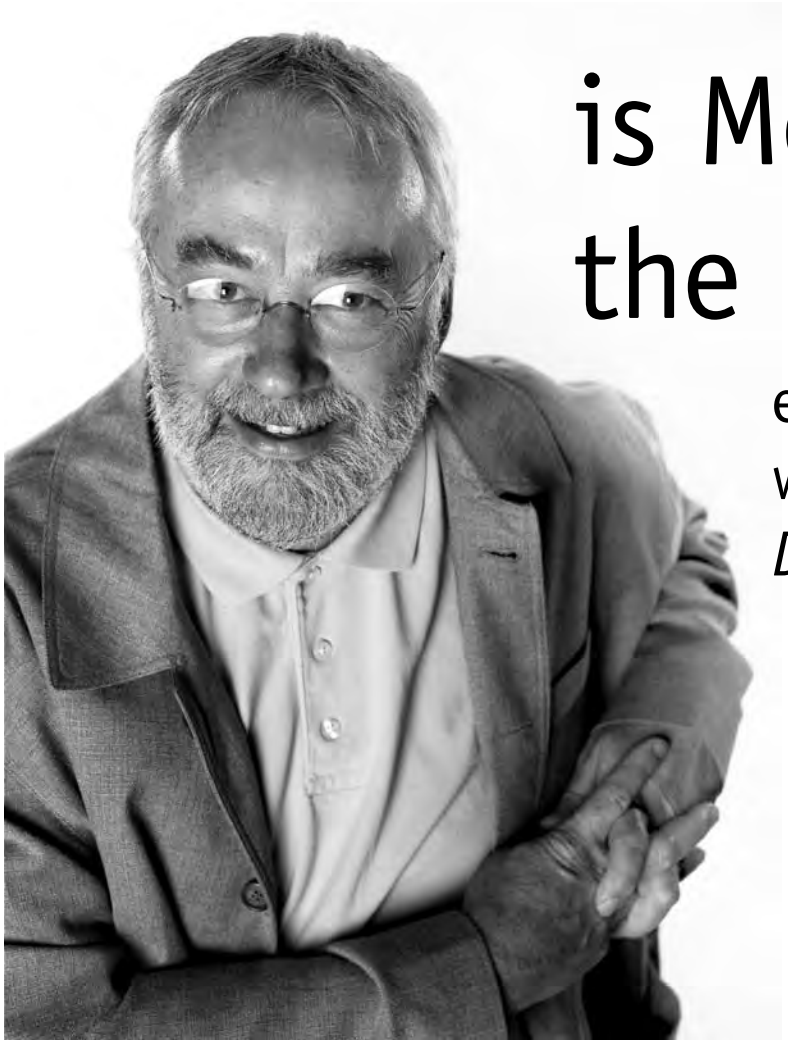
Interfaces

70 • Spring 2007

British HCI Group
www.bcs-hci.org.uk



is Moggridge the new Nielsen?

exclusive interview with the author of *Designing Interactions*

plus

3rd wave HCI
new interaction technologies
the Equator project
virtual agents

HCI 2007
HCI... but not as we know it

Published by the British HCI Group • ISSN 1351-119X
Human–Computer Interaction

View from the Chair

Andy Dearden, Communications Group Chair

The past quarter has been a busy time for communications, both for ongoing projects (such as our rebranding efforts) and with changes of personnel in important positions.

I'm sure the staff working to bring you this edition of *Interfaces* will tell you about the changes on the *Interfaces* team. Laura Cowen contributed an enormous amount in her term as editor, both in coordinating the regular production, and in commissioning excellent and enlightening content. I am sure all *Interfaces* readers will wish her well in her future career.

We have also been interviewing for a new editor to replace Ann Light, who is retiring as editor for UsabilityNews. Ann is the victim of her own success, having attracted so much funding for various research projects that she is no longer able to continue in the role at UN that she has executed so well since 2002. I hope that she will remain involved as an advisor as UN builds for the future. We have chosen a candidate for the role of UN editor, but the contract is currently subject to negotiation, so more of that next time.

Then, finally, to the rebranding! As you will remember, the British HCI Group has spent the last twelve months exploring how we might update our image so that we can explain our mission more effectively to the public, government and industry, as well as to members, practitioners and academics. A key concern from the start was that our name was such a mouthful, 'The British Human Computer Interaction Group, the HCI Specialist Group of the British Computer Society', that by the time we had introduced ourselves, our audience were already confused. Perhaps the most reasonable response would be "HCI wot's that?"

Our new approach is to put our key concern up-front. From this year we will be:

Interaction / a specialist group of the BCS.

So, now we have a shiny new logo (this one is the Black & White version), we can get on with the serious job of rebranding. Yes, that's right, the new name, the new logo are just tools to support the serious work. Now we need to refresh our main communications outputs (*Interfaces*, UsabilityNews, the website, *Interacting with Computers*, and BCS-HCINews) to take advantage of the new image. There is plenty of work that still needs doing. If you can contribute your skills and energy to one of these areas of work, then please drop me an email.

Andy Dearden
a.m.dearden@shu.ac.uk

contents

Editorial

John Knight

These are interesting times for HCI. I think as a community we are reaching a stage of maturity where we can accommodate other disciplines, but also, and more importantly, maintain a distinctive voice with our own approaches and theories.

In particular, the discussion on third wave HCI has accommodated an industry friendly sense of value through design as well as a socially desirable one through showing how HCI has worth in delivering usable products and services. OK, we need to get a bit more design and delivery focused but that is well on its way.

Do not listen to me but look around. This year started with *Time* magazine featuring a mirror on the front cover for its person of the year, i.e. You the user. They then talked about how users are becoming important players not just in technology adoption but also producing media and news. This is far beyond the sense of user centred that we are used to.

Lastly, we have a coffee table book that does a great service to our values and profession. Of course I am talking about *Designing Interactions* by Bill Moggridge. Gone are the return on investment arguments, attacks on designers and focus on performance. That is great. However, as the contributors to Bill's book note, we would not have got anywhere without the technology or the engineers. Perhaps we should not lose sight of this, and start noting the beauty of code again.

This edition is jam packed with contributions from the design end of HCI. This is to be welcomed and in particular I hope that it is a spur to the more techie end to start talking up their contribution to HCI.

In this issue we have an exclusive interview with Bill Moggridge from IDEO and a review of his book *Designing Interactions*. Tom McEwan starts the ball rolling with HCI 2007 and we have all of the regular columnists and features. In addition, Mike Waller gives an overview of an exciting site-specific piece of interactive art he is working on, and Magnus Haake and Agneta Gulz summarise their research on virtual agents. Finally, issue 70 contains an important report on the Equator project.

The Equator project exemplifies multidisciplinarity and the maturity of our community. In addition, it is about designing experiences, for real people, in real situations using technology in innovative ways. Given the current interest in our work we need to make this year's conference a milestone. So, catch the wave and to get involved in Interaction, HCI 2007 and *Interfaces*.

John Knight is a User-Experience Manager in the mobile communications industry. Before this he was Director of User-Lab at Birmingham Institute of Art and Design and has worked as a freelance designer and researcher. John is also chair of IDEC4, which will be at NordiCHI 2008.

Right to Reply

Make *Interfaces* interactive! We invite you to have your say in response to issues raised in *Interfaces* or to comment on any aspect of HCI that interests you. Submissions should be short and concise (500 words or less) and, where appropriate, should clearly indicate the article being responded to. Please send all contributions to the Editor.

To receive your own copy of *Interfaces*, join the British HCI Group by filling in the form on page 27 and sending it to the address given.

Next Issue

Interfaces welcomes submissions on any HCI-related topic, including articles, opinion pieces, book reviews and conference reports. The next deadline is **15 April**, but don't wait till then – we look forward to hearing from you.

With thanks to commissioning editors:
Interfaces reviews: John Knight, John.Knight@intiuo.com
My PhD: Martha Hause, m.l.hause@dsl.pipex.com
Profile: Alan Dix, alan@hcibook.com

Photo credits: cover & p22,23: IDEO; p6 (top) Guger Technologies; p7 (top): the Audiovisual Library of the European Commission; p14: Lancaster University; p26: Elina Halonen.

Deadline for issue 71 is 15 April 2007. Deadline for issue 72 is 15 July 2007. Electronic versions are preferred: MS Word, RTF, or plain text via email or on CD; but copy will be accepted on paper or fax.

Please send to John Knight, John.Knight@intiuo.com

Copy email submissions to Fiona Dix, *Interfaces* production editor; email: fiona.dix@hiraeth.com

PDFs of *Interfaces* issues 35–69 can be found on the British HCI Group website, www.bcs-hci.org.uk/interfaces.html

Deflections

Shaker/retail and role: HCI Reform Movements

Gilbert Cockton

A spectre is haunting HCI – the spectre of radicalism. All the powers of old HCI have entered into a holy alliance to exorcise this spectre: Psychology and Sociology, Design and Media, Scandinavian Participatorians and Brazilian Semioticians.

More Groucho than Karl as manifestos go, but HCI's Third Wave swells up quickly offshore. Still too far out to determine its shape and size when it finally hits the beach, pundits scramble to ride it as theirs alone.

At NordiCHI, Suzanne Bødker credited Liam Bannon for charting the journey from first to second wave HCI: *From Human Factors to Human Actors*. In my October 2006 column, I charted a next course along which contenders for HCI's next best thing can race: *From Human Actors to Human Satisfactors*.

We now see a race between HCI Reform Movements. Phoebe Sengers and colleagues reviewed some for Critical Computing 2005. Foundations for Phoebe and Friends' *Reflective Design* include: Participatory Design, Value Sensitive Design, Critical Design, Ludic Design, Critical Technical Practice and Reflection-in-Action. More mature *Deflections* readers will note that some are already a bit long in the tooth. Even so, they still fuel radicalism in process and product, yet it's hard to imagine them becoming mainstream while keeping their edge. More compliant contenders for HCI's Third Wave immediately mainstream themselves, especially user experience and hedonic paradigms. Rather than a Maoist reformist 'clearing up wrong thinking while uniting with comrades', user experience gently slid alongside cognitive HCI as its emotional counselling service.

I'm going to let you into a secret. There will be no single Third Wave HCI. Once we'd strolled away from Taylor Beach to wander up and down the boundless coastline of anyone anytime anywhere interaction, we were bound to see countless new waves as we rounded each headland. Along Home Bay, Identity Inlet, the Experience Estuary, Media Cove, and Ludic Links, waves break differently. Each shore line is distinct. Come back another day and it's changed again. Everyone will have their favourite view, so Third Wavicle HCI will bring extensive fissuring into creeds, cultures and camps.

Historically, HCI has moved quickly from its prehistory of design guidelines through usability engineering and on to contextual design. Previous design domains have waited several decades, even centuries, for reform movements to shift from one paradigm to another. Thomas Hauffe tracked some of these in his *Design: a Concise History*. It's fun to compare them with current HCI reform movements.

Regularity is beautiful. The utmost beauty lies in harmony. Beauty arises from practicality. Order is the origin of beauty. That which is most practical is also most beautiful. Hauffe's list of guiding Shaker design principles could readily form the basis for hedonic-utilitarian fusion, unifying Marc Hassenzahl's pragmatic and hedonic qualities with a briefer list of values than Value-Sensitive Design.

"*A devilish capitalistic botch and an enemy of mankind*" – strong stuff indeed from a man who put nice flowers on walls and curtains. William Morris's rebuke could readily be applied to the world's worst commercial interactive software, but unlike Morris, HCI cannot return to a golden age of craft production. Bigger has tended to mean better for software production. Open source could be seen as a craft analogue of commercial software, but its usability and accessibility leave much to be desired.

As Morris' Arts and Crafts movement morphed into Art Nouveau, patrons of Jugendstil saw it primarily as a strategy for improving the competitiveness of German manufacture. An antidote to capitalistic botch up was appropriated as a competitive notch up. Current value-centred approaches similarly recruit design thinking: *Can Design Save The American Economy?* asked Business Week's Bruce Nussbaum at the Institute of Design's 2005 Strategy Conference.

Nineteenth-century design reform movements advocated very diverse solutions to the ugliness of new industrial production. HCI's 21st-century Reform Movements are equally diverse. Some are driven by spiritual values, as were the Shakers. Some are driven by neutral commitment to diverse stakeholder values, such as my own worth-centred design, which accommodates values from business, art, politics, families, neighbourhoods or institutions. This focus on value over the designed artefact is rapidly taking hold in leading design thinking. Richard Eisermann, Director of Design and Innovation at UK Design Council, tells us: "When I talk about design, I try not to mention the 'd' word anymore. I try to talk about value." (www.experientia.com/interviews/eisermann).

Design purpose is taking centre stage in HCI. This purpose could come from Shaker style spirituality or the retail targets of a multimedia publisher. Interaction designers' roles reflect their design purpose. There can be an HCI third wavelet for every new design purpose that comes someone's way. Prophet or profit, role follows purpose. HCI professionals and researchers will act out an increasingly diverse range of roles, not as guardians of Design Factors, but as reflective, self-aware and committed Design Actors.

Bødker, S., 2006. When Second Wave HCI meets Third Wave Challenges.*Proc. NordiCHI 2006*, eds. A.I. Mørch, K. Morgan, T. Bratteteig, G. Ghosh, and D. Svanæs, 1–8, ACM.

Cockton, G., 2006. Designing Worth is Worth Designing. *ibid.*, 165–174.

Hassenzahl M., 2002. The effect of perceived hedonistic quality on product appealingness. *Int. J. HCI*, **13**, 479–497.

Hauffe, T., 1998. *Design: A Concise History*. Laurence King.

Sengers, P., Boehner, K., David, S., and Kaye, J.'J'., 2005. Reflective design. *Proc. 4th Conf. on Critical Computing*, eds. O.W. Bertelsen, N.O. Bouvin, P.G. Krogh, and M. Kyng,. ACM, 49–58.

Gilbert Cockton is Research Chair in HCI and Chair of Interactive Digital Media in the School of Computing and Technology at the University of Sunderland. His research group currently provides usability consultancy and training for the Digital Knowledge Exchange, a HEIF Centre of Knowledge Exchange. Gilbert is also a NESTA fellow, developing worth-centred approaches to interaction design.

Gilbert Cockton
University of Sunderland
gilbert.cockton@sunderland.ac.uk

Service and complexity

Russell Beale

One of the great things about writing a column is that it gives you the opportunity to reflect on more everyday things that are on the periphery of consideration, but often at the centre of life. And this column is one of those. As I write this, I am sitting with my house in total chaos as we start packing to move – the only things that still work much as they should are my wireless broadband connection and my laptop – even the desktop machines are packed away.

Of course, all the major things have been dealt with in advance of today: we have found and paid for a house to move into, informed all the utility companies and phone companies, and so on. And the internet helps – or at least, I thought it would have done. www.iammoving.com allows you to automatically inform them – sort of. Actually, it puts you in touch with companies who may want to offer you services, so if you just want to transfer electricity and so on, it's not that much use. So you revert to the websites of the companies involved, and I got to BT to move our phone account.

And they're very helpful – all doable over the phone. Also, do I want to move my broadband as well? You bet I do. Who's the provider? PlusNet. Fine – they'll contact them and will sort it all out so that it happens all on the same day. Lovely.

All that was three weeks ago. Yesterday I checked with PlusNet to make sure they were ready to move me, and they'd not heard a thing about it. So I spent all morning on the phone to BT, trying to find out what went wrong. Yes, they'd given me duff information. No, they'd not contacted PlusNet. Worse, they weren't going to do anything about it, and now, whenever I call, "We are sorry we are extremely busy, please wait for ever in a queue."

Their systems are so impenetrable that despite going to four different departments and trying different approaches, no-one could find out what had gone wrong and, worse,no-one could remedy the problem. More frustratingly, each subsequent department couldn't find any record of the previous department's conversations with me on these issues. It seems we have developed such a reliance on technologies that when things go wrong with them, no-one can see the whole picture to fix the problem, and it is not worth the company empowering people to take more drastic action since that may cause a whole host of unintended consequences. So our new systems give us an awful experience and stop companies sorting it out. Not good.

But there is another side. I got so fed up I found out the email address of the Chief Executive, and emailed him directly, putting my side of the sorry tale. And he replied, and passed the issue onto a minion to resolve. Now, whilst it's not resolved as yet (there are more problems than I care to even think about) at least one person has been empowered to act and is trying to sort out a solution for me. So the technology has helped.

And thus it always is, it seems. Technology seems to get in the way, to be a barrier, to stop us doing anything at all – it is a major hassle in our lives. But it also allows us to circumvent usual processes, to try new angles on things, and to get things done. Good and evil, in one. The problem, and the solution.

Russell Beale leads the Advanced Interaction Group in the School of Computer Science at the University of Birmingham. His research focus is on using intelligence to support user interaction. Before returning full time to academia and research in 2003, he co-founded, ran, or worked for various internet-related companies.

Russell Beale
R.Beale@cs.bham.ac.uk
Advanced Interaction Group, University of Birmingham

Future technologies

During a rather interesting discussion a senior academic once told me "I never understood multimedia anyway". He had mistakenly assumed that HCI was simply multimedia – he repeated the comment some time later just to make sure we understood that this is his view of HCI. Another similar comment came from a director of an IT company who once said (slightly paraphrased) "Why do we need HCI? Our customers will complain and we can fix the problems then". This was even more ironic as the main marketing message of this company was the usability of its many products.

To many people, in particular the two mentioned earlier, HCI is a subject which is of little relevance to them and is often nothing more than a collection of theories and methods, rarely linked to anything 'computing', and above all it is not useful. So it is that in this column I have set myself the (enviable?) task of finding out things that HCI will actually achieve in future, in particular in the field of innovating new technologies. So for the time being you put away that well-thumbed copy of 'Task Analysis Stories for Bedtime Vol. 2' along with those old carpet slippers and slightly overfull glass of Harvey's Bristol Cream as we jet off to the land which created the Moomins.

IST 2006 Finland

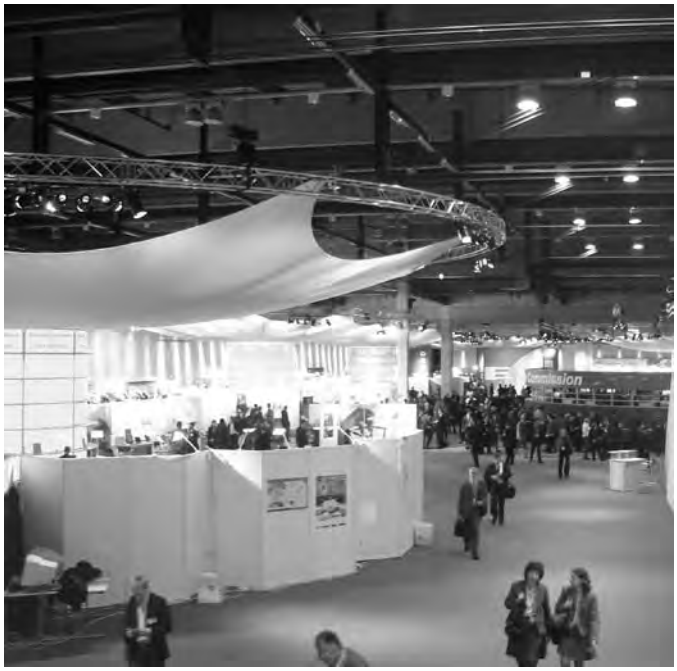


Figure 1 A view across part of the exhibit hall

Whether you were looking to wear it, look at it, think about it, feel it, run around or have a meeting to talk about it, IST 2006 in Helsinki was a good place to find out about some new and interesting interface technologies.

User interface technologies on show included a brain computer interface from Guger Technologies, which was developed as part of the EU funded Presencia project. The system can be used for both measurement and control, with the developers promising that you can move through virtual environments using the power of thought. In contrast the COGIAN project lets people play chess, control robots or

Figure 2 Presencia/Guger Technologies illustrate their Brain Computer Interface

Figure 3 The COGAIN project demonstrates how to control a robot using gaze tracking.

type, merely by using eye gaze, while the ENACTIVE project illustrated their ideas for gesture-based interaction. The Tai-Chi project demonstrated examples of their acoustic interface technologies, which transform virtually any object into a 2D or 3D touch pad; they were also celebrating winning the Best Exhibit Prize.

The PalCom project were illustrating their view of palpable computing. Palpable computing systems let users choose which devices (such as sensors and video cameras) they wish to combine in order to achieve a desired functionality. Issues relating to representing and using textiles have been growing with the HCI community for some time now and the HAPTEX

Figure 4 The HAPTEX project lets you feel virtual textiles. Image credit: the Audiovisual Library of the European Commission © European Community.

project are developing virtual reality systems that let people see and feel virtual textiles.

Mobile technologies were also on display, with the iPerG project letting users take part in a live multi-player game using mobile phones inside the exhibition area. Also on hand were projects related to CSCW. For example, the partners within the AMI Project have developed a system that provides better support for meetings either for those present or for those who were unable to attend. The AMI system captures the content of a meeting and lets people browse through it at a later date. Data which can be browsed includes the words, actions and decisions that took place.

Wandering around an exhibition hall is not always the most romantic experience but the NM2 project were on hand to bring a little sparkle to the day. They are developing tools which let end-users interact with content and personalise it to their tastes via the internet, television and mobile phone. One of their productions, Accidental Lovers, lets the public have some control over the plot within a romantic comedy and focuses on a romance between an older lady and younger man.

Figure 5 Forget Brad Pitt, this young man sporting a mixed reality visor was in demand (iPerg project).

It is often easy to get defensive about one's own career or field, in particular defending it against non-believers, but it is often more difficult to find some real-world examples of where it can make a positive impact in future years. I hope this column has shown some of the potential areas where HCI has been a critical part of the innovation process.

Tips for travelling academics 1

Although not a celebration of Finland or Russia, the Soviet style Cafe Moskova is one of the few places where the staff are paid to be cold to the customers, the decor is awful and the music is worse. But it does make for an amusing start to the evening. For something more hospitable try the tower bar in the Sokos Hotel Torni; it has some stunning views of the city and is the perfect place to try out some of the charming range of Finnish Vodkas.

Tips for travelling academics 2

Leaving Helsinki, you might be tempted to go North West to Tampere. Known as Finland's Manchester (Manse) it is home to TauCHI and the neighbouring small town of Nokia. Long, long before they had made their first phone, Nokia were based in this small town and produced batteries and tyres among other things. Also visit the Lenin and Moomin museums (that's two separate museums) and take a boat trip on one of the lakes.

Acknowledgements

The HAPTEX image is from the IST 2006 website, used by permission of the Audiovisual Library of the European Commission. The brain computer interface image was supplied by Guger Technologies. The author would like to thank the members of the various projects mentioned in this article for their assistance.

Links

HAPTEX, haptic sensing of virtual textiles: haptex.miralab.unige.ch
PalCom, Palpable Computing: www.ist-palcom.org
Brain Computer Interface: www.cs.ucl.ac.uk/research/vr/Projects/Presencia
COGAIN, Eye Gaze Interaction: www.cogain.org
ENACTIVE, gesture based interaction: www.enactivenetwork.org
Tai-Chi, Acoustic Interfaces: www.taichi.cf.ac.uk
IperG, pervasive games: www.iperg.org
AMI Project, Augmented Multi-Party Interaction: www.amiproject.org
NM2, New Media: www.ist-nm2.org
Moomins: http://en.wikipedia.org/wiki/Moomins

Rod McCall is an ERCIM Research Fellow within the Collaborative Virtual and Augmented Environments Group at Fraunhofer FIT in Germany. He held the same post at CRP – Gabriel Lippmann, Luxembourg. His research interests include mixed and virtual realities and ambient technologies.

Rod McCall
rodmc@acm.org

Reflections on the EPSRC-funded Equator Interdisciplinary Research Collaboration (IRC), 2001–2006

In 2001 the EPSRC and MRC funded 5 new interdisciplinary research collaborations (IRCs) to the order of £40 million to help information technology improve our lives. The remit was to carry out major research programmes, over a 6-year period, to harness and exploit rapid advances in IT in a diversity of areas, from hospitals to playgrounds. One of the IRCs was called Equator, led by Tom Rodden.

The vision

Equator's vision was to extend and enhance everyday activities in innovative ways through promoting the integration of the physical with the digital. This also meant uncovering and supporting the variety of possible relationships between people, the environment, artifacts and digital representations. We took a broad and eclectic approach: building and adapting technologies for a range of areas, applications and people. Examples included:

- combining physical and digital cities to promote people's understanding of the world within which they live, and enhancing wayfinding and access
- creating new forms of play, performance and entertainment, through mixing physical and digital realities, in order to promote learning, participation and creativity
- exploring how new technologies that merge the physical and the digital can support activities outside of the workplace, including maintaining family and social relationships in the home, and supporting work in the open air.

Who are we?

Equator comprises a group of leading academic researchers in the design, development and study of interactive technologies for everyday settings. The PIs are Bill Gaver (RCA, now at Goldsmiths), Steve Benford (Nottingham), Tom Rodden, (Nottingham), Adrian Friday (Lancaster), Hans Gellersen (Lancaster), Anthony Steed (UCL), David de Roure (Southampton), Henk Muller (Bristol), Matthew Chalmers (Glasgow), Yvonne Rogers (Sussex, now at the OU) and Geraldine Fitzpatrick (Sussex)[1]. The expertise of the IRC was deliberately selected to be diverse: including hardware engineering (Bristol), computer graphics (UCL), mobile multimedia systems (Lancaster, UCL), art and design (RCA), software development and system architecture (Lancaster, Nottingham, Southampton, UCL), information sciences (Glasgow) and social and cognitive sciences (Sussex, Lancaster, Nottingham).

About 200 people have worked on or have been associated with Equator; each university site having between 20 and 30 researchers during its lifetime, in the form of faculty, PhD students, research fellows and visiting scientists from outside the UK. In addition, a number of internships were set up to enable students from one site to gain experience by working at another.

1 The original PIs also included David May (Bristol), Gillian Crampton-Smith (RCA), Wendy Hall (Southampton) and Mel Slater (UCL).

Why did we call ourselves Equator?

The equator is an imaginary line that divides the earth into two hemispheres: the north and the south. The idea behind using it as the name of our IRC was to stop treating digital and physical as separate worlds, and instead to see them as two parts of the same world. Equator would work on the borderline, supporting people moving back and forth across it as easily and simply as crossing the geographical equator line. Just as sailors and travellers do not visibly notice crossing the Equator when moving from the North to the South (or vice versa), our vision was, likewise, to enable people to move between the physical and digital without noticing they were switching from one to the other.

What did we do?

An overarching goal of HCI is to make people's lives easier and more comfortable, through developing technologies and applications that can support them in their everyday activities, etc. In contrast, our objective was to explore how various combinations of the physical and digital could be designed to enhance, extend and enrich people's lives. Centrally, this involves 'adding something' that was not there before rather than improving upon the way people do things (e.g., making it easier, quicker or more efficient). But how?

During Equator's lifetime, our voyage has taken many turns, in thinking and designing for the physical and digital. To begin – following in the footsteps of Weiser's vision – many of us tried to make technology-based experiences appear 'seamless', so that moving from one to the other was effortless and smooth, requiring little if any conscious thought. We designed devices, built infrastructures and created applications that would enable people to discover things about the world and each other – which they could not have done using existing PC technologies. Early examples included: enabling visitors into a museum (that was both physical and online) to experience it together as if in the same place; a communication system that provided care home members and workers, who were geographically distributed, with increased awareness and additional support; and novel gaming experiences that enabled children and adults to discover more about elusive virtual and physical characters through interacting with them in a variety of physical–digital spaces.

What did we achieve?

Several of our early endeavours were viewed as ground-breaking, paving the way for new ways of conducting and conceptualising research in Ubicomp and HCI. Most notable was the development of cultural probes to gather information about people's everyday lives that were then used to inspire designs (cf. the traditional approach of specifying requirements in response to users' perceived needs); the creation of a number of frameworks for grounding and understanding the relationship between physical and digital 'couplings' (cf. traditional input–output models) and the development of infrastructures, toolkits and devices to allow non-specialist construction of physical–digital experiences, e.g., Smart-Its.

Figure 1 Sensor-based taps in the restrooms at Cincinnati airport.

However, during our initial explorations and developments we found ourselves struggling with designing seamless experiences. Our sensing technologies would often let us down – just as mobile phone users can easily lose their signal when walking around parts of a city, or hapless visitors dressed in black are unable to wash their hands when visiting the restrooms in Cincinnati airport (Figure 1). But rather than see these breaks as something to be avoided or overcome we began thinking about how to capitalise and exploit them to good effect; viewing them as opportunities to make people stop and wonder, enabling them to see the world differently. And so we began questioning whether it was necessary to make the line between the physical and digital invisible. Why not deliberately make it visible at opportune times and in so doing, draw attention to it, causing people to step back and reflect upon the relationship and interdependence between the two?

Several of us started entertaining other ways of traversing the physical and digital, and switched over to the idea of seamful rather than seamless interactions. By this we mean making the underlying mechanisms visible to people when there is uncertainty or ambiguity caused by sensor failure or error. And from this to let them appropriate the information and decide for themselves how to manage or act upon it. Consider again the ubiquitous mobile phone. Many users are unaware of when they are going to step into an area with a poor signal. If instead they were provided with ambient information of the cell being used they could choose to move from a weaker to a stronger signal by moving to a physical location that forces handover to a cell that has better network coverage.

This pivotal change in mindset had a significant impact on the way we conducted our research, the challenges we addressed and our accomplishments. An example is the development of seamful games that deliberately expose the limits and variations in the ubiquitous computing infrastructure that is being used. Specifically, these are mobile multiplayer games designed to let people use and take advantage of the limits and gaps of the infrastructure, such as wireless networks and positioning systems (Figure 2).

Another aspect of our change in thinking was to deliberately design ambiguous and even uncomfortable experiences that would provoke people into reflecting upon what they were experiencing, such as asking: what is this, why is it there, what can I do with it and how does it relate to what I am doing? Two pioneering examples were the Drift Table and the Ambient Wood projects. The Drift Table began as a collaborative

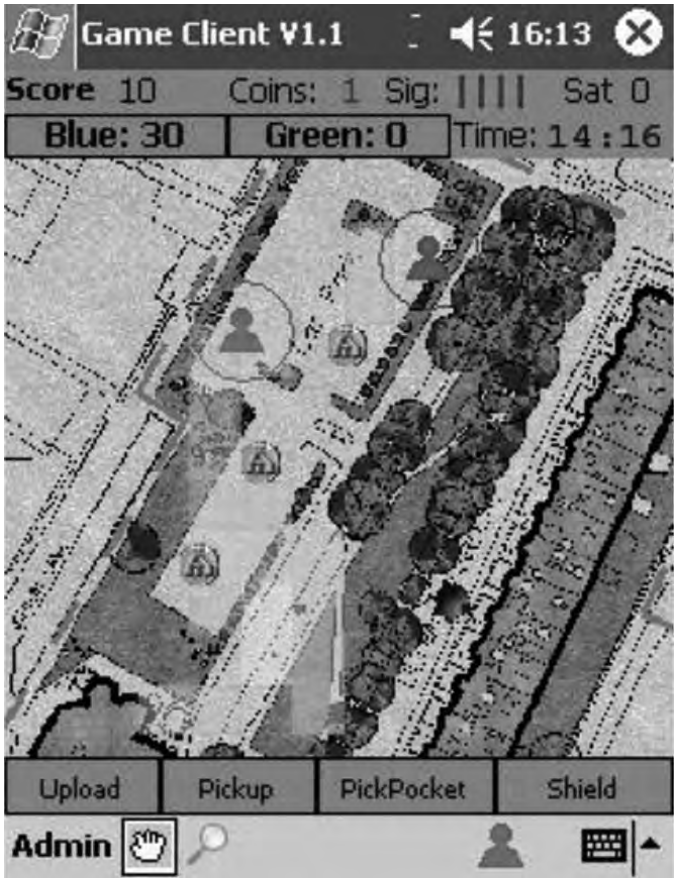


Figure 2 An example of a seamful game

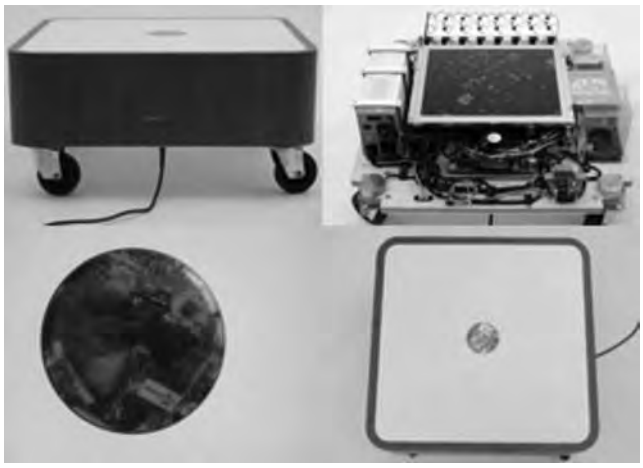


Figure 3 The Drift Table

project between a team of researchers primarily from Lancaster, the RCA and UCL. An electronic coffee table was designed that displayed slowly moving aerial photography controlled by the distribution of weight on its surface (Figure 3). This is a completely different way of viewing maps and interacting with them. It was intended to explore how technologies for the home could support ludic activities – that is, activities motivated by curiosity, exploration, and reflection rather than externally defined tasks. Similarly, the Ambient Wood project

Figure 4 The periscope designed as part of the Ambient Wood project

was a collaborative effort between Sussex, Bristol, Southampton, Nottingham and the RCA, aimed at promoting playful learning experiences. It was designed for young children (10–12 year olds) using an assortment of Ubicomp technologies to encourage more reflective learning and self-initiation in inquiry. Various wireless and sensor technologies, devices and representational media were combined, designed and choreographed to appear and be used in an 'ambient' woodland (Figure 4). Several handcrafted listening, recording and viewing devices were created to present certain kinds of digital augmentations, such as sounds of biological processes, images of organisms, and video clips of life cycles. Some of these were triggered by the children's exploratory movements; others were collected by the children, while still others were aggregated and represented as composite information visualisations of their exploratory behavior. In both projects, *in situ* studies revealed much fascination, intrigue and engagement.

Where next?

We have only really given you a flavour of the trials, tribulations and success stories of the Equator enterprise. There are many other contributions – building on our early forays – that are beginning to make their mark in the field. In retrospect, we can truly say that the privilege of having so many people from an assortment of backgrounds come together, enabled us to experiment and build a large number of experiences, infrastructures and devices at a scale and level that we could not have achieved if we had been funded to work as separate research teams. We were able to pool our resources, expertise and ideas that, arguably, have substantially pushed the envelopes of HCI and Ubicomp; legitimising new ways of informing design and spawning new areas of research. We took on board the new technological developments that were appearing at the time and showed what experiences were possible to design and implement using them – above and beyond those associated with desktop machines. We have also trained a new crop of researchers (including about 30 PhD students) who have become sensitive to and experienced at working as part of interdisciplinary research teams. As our journey ends, we look forward to seeing how they chart their voyages across the physical and digital, post-Equator.

For more on the Equator IRC and the publications arising from the work visit www.equator.ac.uk.

Anthony Steed

Bill Gaver

David de Roure

Geraldine Fitzpatrick

Henk Muller

Hans Gellersen

Adrian Friday

Matthew Chalmers

Tom Rodden

Steve Benford

Yvonne Rogers

Anthony Steed is a senior lecturer in Virtual Environments and Computer Graphics in the Department of Computer Science at UCL.

Bill Gaver is a professor of Interaction Research at Goldsmiths University of London. From 2001 to 2005 he was the PI at the RCA.

David de Roure is a professor in Computer Science at Southampton University and is a founding member of the Intelligence, Agents, Multimedia Group.

Geraldine Fitpatrick is a senior lecturer in the Department of Informatics at Sussex University. She joined Equator as a PI in 2003.

Henk Muller is a reader in the Computer Science Department at the University of Bristol.

Hans Gellersen is a professor and *Adrian Friday* is a senior lecturer in the Computing Department at Lancaster University.

Matthew Chalmers is a reader in Computer Science at the University of Glasgow.

Tom Rodden and *Steve Benford* are professors in the School of Computer Science and IT at the University of Nottingham and members of the Mixed Reality Laboratory.

Yvonne Rogers is a professor in HCI now at the Open University. She was a founding PI of Equator from 2001 to 2003 at Sussex University.

My PhD

Information fusion: a new requirement for effective decision-making?

Maria Nilsson

edited by Martha Hause

"we are awash in data but starved for information"
Tien 2003, p 104

I guess everyone has experienced this feeling, to some extent, from the very small decision of choosing a restaurant to the more complex decision situations involving heterogeneous groups of people cooperating towards a common goal. The problem is the same: we perceive a lot of data from all around, yet, somehow, we are starved of information. Not surprisingly, this problem will not magically vanish and become any easier, considering the current development of advanced technology, enabling us to access even more information in real-time. Imagine my surprise when realising that there might be a solution to my problem, i.e. 'information fusion' (IF). Consider this: instead of just filtering the information, as you normally do, you fuse the information (thus, preventing information loss, taking HCI to a new level). Indeed, there is a whole community focusing on 'information fusion', i.e. the combination of information from different sources in such a way that a human decision-maker may be supported to make better decisions.

Looking ahead, it is clear that information fusion systems will play an ever larger role in our world, working for, and incorporating with, users. Interestingly, reviewing information fusion literature reveals that, to date, information fusion has benefited from substantial research efforts in fusion algorithms and techniques; however, much research remains to be conducted, especially concerning HCI and user related issues.

In fact, my encounter with information fusion research has made me realise that there are exciting challenges to overcome concerning the exploitation of fusion to support users. For instance, there is a lack of research considering issues such as how to visualise the information in such a way as to be usable. The individual must also be able to trust the system and not become overwhelmed by the information provided by it. Furthermore, when several individuals access the same system, how can they get the same situational awareness from the vast array of information provided by the system?

The lack of HCI and user perspective in information fusion is surprising, especially as it is widely acknowledged within IF that systems are built to support the user in decision-making activities. Indeed, all too often, we encounter a general lack of awareness of HCI in these more computationally oriented disciplines, especially in terms of the possible utilisation of the user (e.g. mixed-initiative interaction). Hence the potential for contribution that HCI can make is rich.

The overall goal of my research, however, is to provide an understanding of how information fusion systems could be used to enhance our decision-making processes, and, similarly, how the user could be involved in order to enhance the effectiveness of such systems: in other words, create a theoretical framework/principles which could then be used when designing future IF systems.

I am in the first of five years of research, so no extended empirical research has yet been performed. Future research will be specified further and I will investigate different application domains using information fusion systems, with the aim of capturing the user interaction/decision-making process. The focus is to capture the interrelationship between the information fusion system, individual users, and the organisational context, thus providing information that enables future systems to become more effective. In detail, the approach is to extract concepts from the literature (e.g., information fusion models) concerning the decision-making process; i.e. create a theoretical framework of concepts. This could then be applied in empirical studies of information fusion systems in different domains. The theoretical framework would answer questions such as: How are IF systems used today? How are users involved in the design of IF systems, i.e. how is the interaction/decision-making process exploited? In practicality, a distributed cognition approach will be used in the empirical studies for identifying both the possible mapping to the created framework and the possible existence of new concepts, which may be added (cf. Nilsson and Ziemke, 2006, and Nilsson, 2006). Indeed, there is promising research to look forward to.

References

Nilsson, M., 2006. Rethinking HCI for Information Fusion and Decision Support. In: *Proceedings of HCI 2006*, vol. 2, 225–227.

Nilsson, M. & Ziemke, T., 2006. Rethinking Level 5: Distributed Cognition and Information Fusion. In: *IEEE Proceedings of the 9th International Conference on Information Fusion*.

Tien, J.M., 2003. Toward a Decision Informatics Paradigm: A Real-time, Information-based, Approach to Decision-making. *IEEE Transactions on Systems, Man and Cybernetics-Part C*.

Acknowledgements

The research outlined is part of the Information Fusion Research Program at the University of Skovde (www.infofusion.se) supported by the Swedish Knowledge Foundation together with 15 industrial partners.

Maria Nilsson
*Supervisor **Prof. Tom Ziemke***
School of Humanities and Informatics
University of Skovde
Sweden
maria.nilsson@his.se

Martha Hause
m.l.hause@dsl.pipex.com

Virtual Pedagogical Agents:
Stylisation for engagement

Virtual Pedagogical Agents

Virtual characters are long established within computer games and entertainment. Recently they have also started appearing on websites and in chat forums. In parallel to this, *virtual pedagogical agents* (*VPAs*), i.e. computer generated characters in pedagogical roles, populate cyberspace in increasing numbers. One may encounter them as virtual teachers, mentors or learning companions from nursery to university; as virtual medical counsellors and exercise coaches; or in edutainment and infotainment settings. Game characters and chatbots on the other hand can be considered pre-scripted and user controlled; VPAs are generally modelled upon pedagogical theories and implemented through artificial intelligence.

Figure 1 Virtual Pedagogical Agents: AutoTutor (University of Memphis) and characters from FearNot (VICTEC/ eCIRCUS).

Engagement

Along with the development of computer generated characters in general, VPAs have been extensively researched with respect to artificial intelligence, pedagogical strategies, natural language, gestures and facial expressions. A central motive for this research is to enhance learning in students. Several potential benefits in adding a VPA to a digital learning environment have been proposed and to some extent also demonstrated [1]. One of the most established benefits of VPAs is their potential to make the user experience of a program *more engaging*, e.g. [2]. And if a learning environment is found engaging – i.e. experienced as involving, interesting or as having impact – users are likely to become more active, stay on longer and produce more.

Look

Given the importance of engagement, surprisingly little attention has been paid to the *appearance or look* of VPAs. Whereas visual *dynamic* qualities like facial expressions have been extensively researched, the underlying *static* visual appearance in terms of facial shape, body, costume, graphical style, etc., has been more or less neglected. This is surprising, considering the importance paid to these basic visual qualities within advertisements, theatre, film and not least animated film, where the *visual appearance* of characters is assumed to considerably affect people's expectations, attitudes, understanding and motivation [3]. This is also the case in interaction between human beings, something that is thoroughly studied and documented within academic fields including social psychology.

Design aspects

The neglect of basic visual properties in VPAs is also reflected in the absence of corresponding design guidelines. In an attempt to establish a ground for more detailed guidelines we propose three basic design dimensions comprising:

1. *Degree of humanness*: a VPA may be modelled upon humans, animals (or other creatures) or non-living objects, or some combination of these entities.
2. *Basic physical properties (shape and colour)*: such as body-type, face, skin, hair, clothes and various attributes. Representations of age, gender and ethnicity can be reflected in these properties.
3. *Graphical style*: artistic and aesthetic qualities that can be described in several ways. Two dimensions of VPAs are suggested, comprising:
   Detailedness vs. simplification: a colour photo may be referred to as detailed, but can also be reduced to a simplified two-colour photo. Note, though, that in comparison to 'naturalism vs. stylisation' below both are naturalistic representations (cf. Figure 2).
   Naturalism vs. stylisation: This is a complex dimension without any simple linear relationship especially as stylisation spans a wide range of expressions. Consider a character from *The Sims* representing near naturalism to a Picasso-styled face or a *Peanuts* inspired face representing different stylised expressions (Figure 2).

It should also be noted that *3D* does not equal visual naturalism / realism but is rather an aspect of graphical style. To illustrate, a 2D black-and-white photo is a far more naturalistic representation than a 3D rendered low polygon computer game environment.

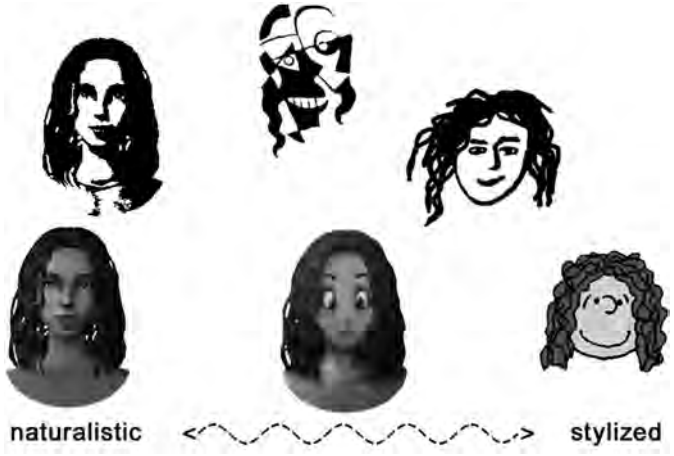


Figure 2 Graphical style: naturalism vs. stylisation.

Stylisation and engagement

We will now elaborate on the *degree of naturalism* and its relation to engagement. First we present and comment on two main arguments for *visual naturalism* as a means to increase engagement. To make the text more readable we do not use the term engagement consistently but also use related concepts such as involvement, presence, and subjective relation.

Argument 1: Presence and immersion

Some researchers argue that *visual naturalism* increases involvement and the sense of presence in a digital environment. For instance, in the domain of computer games there is

> … a desire to attain more and more realistic virtual worlds and characters […] the reduction of the absolute difference between real and virtual environments leads to an *increase of presence and of immersion*. [4, p.218].

Against these lines of reasoning goes another argument based upon the Disney notion of *suspension of disbelief*. In order to be immersed and engaged in a story and characters that are not real but 'only' fantasy, one must suspend one's disbelief. Now, this can in several cases be more easily accomplished with the use of stylised characters since these are not expected to *behave and act* naturalistically in the way that humans do, whereas a visual appearance that naturalistically resembles a human being evokes more constrained expectations. Visual realism awakens people's awareness of reality and makes them more critical and disbelieving [4].

Argument 2: Subjective and personal relations and identification

An important motive for introducing VPAs is their potential to take advantage of natural human social affordances. This opens possibilities to recreate pedagogically valuable phenomena in the human–human context, such as emotional support, identification and role modelling. In turn, these phenomena may increase *involvement* and *engagement* in learning activities and environments.

One pedagogically central phenomenon with respect to social affordances is how human teachers, instructors, and mentors can function as role models. But the efficiency of a role model is known to increase when a student experiences *similarity* with the role model. Therefore, it is argued, the preconditions for role modelling must be superior if a character *looks really* like a human being. The above lines of reasoning have an intuitive appeal, but empirical evidence does not support it. On the contrary, it seems even easier for people to experience and form social relationships to, and identify with, stylised characters. Our own studies [5] indicate that when learners are allowed to make a choice between (i) visually more naturalistic vs. more stylised VPAs and between (ii) task oriented vs. more socially oriented VPAs, there is a significant *correlation* between the preferences for social communication and visually stylised VPAs. In a recent study, more targeted at issues of identification, learners were allowed to choose their avatar among more visually naturalistic (Sims-style) and more stylised (Manga-style) characters (see the two leftmost characters in Figure 2). Here, learners' comments on the two visual styles indicated greater affordances for *identification* with stylised characters. For example: "I prefer these [stylised ones]; there is more left for your own imagination here – you can express your personality or whatever you have inside."; "Well, these, the Manga ones, are more for your heart, because they really concern personality."

An interpretation of the results is that stylised VPAs are more easily conceived of as social and personal as well as being easier to identify with than visually naturalistic VPAs. This interpretation is in line with McCloud's thesis [6] that it is easier in the case of an iconic (stylised) character to add from one's own personal and subjective experiences. A naturalistic (realistic) character is a visual and socio-emotional fact, which does not leave much for a user to fill in. It is objectively there, whereas an iconised (stylised) agent invites elaboration by the user, being "… an empty shell that we inhabit." [6, p.36].

Additional support in the same direction comes from Nowak & Biocca's study [7] on relatively naturalistic vs. heavily stylised characters in VR-environments. Here users rated the stylised characters significantly higher than the naturalistic ones as to their experience of a *psychological connection with the character*, in terms of co-presence and social presence.

A final argument in favour of stylisation to increase the potential for identification and engagement is that stylisation offers a greater and more flexible design space with which to meet individual variations in users. In gamer communities, where players themselves contribute to the design of characters, a remarkable diversity is observed. In the case of *visual naturalism*, however, such creatures may easily be experienced as disturbing or bewildering. This may open up for more explorative and engaged aspects of identification – something that may, in turn, be beneficial for the pedagogical tasks at hand.

Conclusion

In the design of the appearance or look of VPAs we argue that the design space of stylisation (compared to a naturalistic approach) offers a greater potential for different aspects of engagement and may increase learners' active participation in terms of intellectual as well as socio-emotional engagement. As a general guideline, this will certainly produce more questions than answers in practical design cases, and there are of course several circumstances where a naturalistic design is preferred. Clearly there is a need for further research in order to fully exploit the possibilities of VPAs.

References

[1] Gulz, A., 2004. Benefits of virtual characters in computer based learning environments: Claims and evidence. *Int. J. of Artificial Intelligence in Education*, **14**, 313–334.

[2] Dehn, D., & van Mulken, S., 2000. The impact of animated interface agents: a review of empirical research. *Int. J. of Human–Computer Studies*, **52**, 1–22.

[3] Gulz, A. & Haake, M., 2006. Design of animated pedagogical agents – a look at their look. *Int. J. of Human–Computer Studies*, **64**(4), 281–394.

[4] Wages, R., Grunvogel. S. M., & Grutzmacher, B., 2004. How realistic is realism? Considerations on the aesthetics of computer games. *Lecture Notes in Computer Science*, 3166/2004, Springer-Verlag, 216–225.

[5] Gulz, A., & Haake, M., 2005. Social and visual style in virtual pedagogical agents. *Workshop Proc. Adapting the Interaction Style to Affective Factors, 10th Int. Conf. on User Modelling.*

[6] McCloud, S., 1993. *Understanding Comics: The Invisible Art*. Harper Perennial, New York, NY.

[7] Nowak, K., & Biocca, F., 2004. The effect of the agency and anthropomorphism on users' sense of telepresence, copresence, and social presence in virtual environments. *Presence*, **12**(5), 481–494.

Magnus Haake
Dept. of Design Sciences, Lund University, Sweden
magnus.haake@design.lth.se
Agneta Gulz
Div. of Cognitive Science, Lund University, Sweden
agneta.gulz@lucs.lu.se

HCI conferences, but not as we know them

A personal musing on HCI2007, Lancaster 3 – 7 September 2007

HCI2007: HCI, but not as we know it, the 21st British HCI conference, takes place in around six months' time in Lancaster University. More specifically, it will happen in their amazing high-tech facility, InfoLab21, which looks and feels like it arrived on the overnight shuttle from Futuroscope.

I've only been there once but it's a real buzz to be in. I could sense that people must feel attracted to work there, and it's a great location for our 'coming-of-age' conference. Our theme this year is also appropriate – encouraging us to find HCI in products and processes where we least expect it. Sometimes this is because of HCI people, and other times it's despite them! (I recall a late night debate a few years ago at conference about whether all the great HCI developments were by non-HCI people … but you can carry that debate on outside this column).

The rest of this piece is dedicated to encouraging all of you to find a way to get yourselves to Lancaster 3rd – 7th September, and, just to grab your eyes, hearts and minds, *Interfaces* can exclusively reveal that the deadline for full papers, tutorials and workshops has been extended to **31st March** (from the originally announced deadline of 23rd February). Why? The committee have been reviewing the sequence of events leading up to the publication of the proceedings, and reached the conclusion that the same high quality publication can be done with a 5-month lead time rather than the somewhat pedantic 7–8 months of yesteryear. (You'd think with modern technology we could get it down to three months but there's a bunch of old fogies my age and older who still remember fondly the days of linotype and molten lead).

Anyway, now that we've established that you still have time to submit, let's explore why you'd want to, and start with our long tradition of quality headliners.

Keynotes

This is the first conference of the inter*action* era of our group. It's particularly appropriate that the first two keynotes announced for the conference are indeed people who put the action into interaction (and indeed cause HCI to appear in novel locations). **Professor Stephen Payne**, of the School of Informatics at the University of Manchester, will be known to most readers of *Interfaces*, but this one had to forage for information on numerous websites and skim-read some of his publications to realise that he's an authority on, erm, skim-reading and information foraging. His current foci of interest are how we self-manage time across tasks and texts and the technology and interplay between social relations and cognitive performance as small groups collaborate. Since this is written a week after the deadline for *Interfaces* for an impressively patient (but let's not push it) editor, and has depended on information from others on the conference committee, I would say I and many others in the group will benefit hugely from Steve's insights.

The second keynote became a Californian Brit long before Posh & Becks found it on the map. **Elizabeth Churchill** of Yahoo! Research did her PhD at Cambridge after a Sussex MSc, and ended up in Palo Alto for almost 10 years before recently shifting to Yahoo!. Her website (**elizabethchurchill.com**) lists the C words that form the basis of her work – 'community, communication, collaboration, coordination, consensus, competition, compassion, creativity'. Skim-reading and foraging again, to disguise my ignorance, I found myself drawn into interesting papers on interaction with large screens in public spaces. As the price and the durability of this technology makes it ever more affordable, we will need to tap into the experience and wisdom of innovators like Elizabeth, to ensure HCI knowledge is not ignored as the technology becomes more prevalent.

So what will I miss if I'm not at Lancaster?

I'm glad you asked – it gives me a chance to spin this conference user's story.

After the excesses of organising HCI2005, I missed almost all of HCI2006, though I'd been at the previous five conferences. Of late, reading the trickle of accounts in *Interfaces*, UsabilityNews and elsewhere, I'm beginning to sense what I missed. Though now I'm back in my familiar role helping publicise the conference, this ephemeral perspective may be useful to those of you who have not been to recent conferences, or those who have never been, in realising why your conference ought to be high up your wish list. It really is *your* conference.

Sadly 'wish-list' is the right word nowadays. My School will almost definitely pay for me to attend a conference like HCI2007 if I have a full paper in the proceedings. They'd probably pay if I hadn't gone anywhere else this year and had a short paper or two, and an organisational overview or interactive experience or maybe a panel participation. They'd

The conference is a complicated financial beast. Students tend to be admitted at 'marginal cost' of around £200 – ie the actual cost of their catering, copy of the proceedings, etc. But there is another £40–50,000 required to run the annual conference – to cover the cost of producing the proceedings, the publicity and website, social programme, travel expenses for the keynotes and programme committee meetings, student volunteers and doctoral consortium. Workshops, tutorials and one-day tickets in a successful year contribute a little beyond marginal cost, but not much – at best one-third of the above total. Sponsorship is now a receding memory – there is no longer a queue of people with cash to offer in return for a logo on the back of the CFP and the programme. The exhibition makes huge demands of the volunteer committee's time, but offers the difference between loss and break-even. The remainder is paid by an average (over the last 4 years) of 100 three-day delegates, paying between £400 and £500 (depending on when they book and membership status). So essentially this 'noble one hundred' pay an extra £200–300 each so that the event can happen. So that a few dozen high quality papers reach the HCI community here and abroad.

rarely pay otherwise, which is a shame, yet I am sure these constraints apply in almost every other university. Two heads of Computing have told me they couldn't justify sending themselves, never mind their staff members! (And I won't say who, not even in late night session at Lancaster. They're on the conference committee though).

So … it's hard but not impossible to justify the budget. A few of you are brilliant or lucky enough to be grant-recipients and have a specific budget for conferences. For you I have a special message … "Brothers and Sisters!! You owe it to the rest of us to prioritise HCI2007!" (see conference financials box above). For the rest of us there is no option but to start writing and to submit before the deadline (see next section).

But what will you miss if you are not *at conference*. There are normally around 100 items in the conference, and you should manage to see 20–30 of them. If you're not there you miss the chance for a pretty intensive literature review or two. You miss the debates in panels where you begin to see the way the wind is changing and the tectonic plates are shifting. You miss the social events where you suddenly find yourself cheek by jowl in a restaurant with someone whose work you've always admired. You miss the camaraderie of late night drinks in a hall of residence kitchen with Russell Beale (at least I'm sure it's usually him), as you defend HCI's corner in computing's overcrowded 'national curriculum'.

You miss the moment of quiet contemplation in an unexpectedly beautiful part of someone else's campus as summer turns to autumn. Even South Bank. Most of all you miss the chairs (or Russell – he keeps popping up) making a fool of themselves at the conference dinner. You miss the effect that a cooked breakfast and the Purple Press has on a somewhat overstressed digestive system at 8am. You miss the Vice-Chancellor, or Pro-VC, or Pro-pro-VC struggling to convince you that they know what HCI is in the welcome speech, and the leader of the local council welcoming you to a town hall reception with a bad joke about how, unlike their kids/wife/dog, they can't operate/understand computers but they understand that this conference will somehow help fix this.

You miss the chance to solicit, or pitch to become, external examiners. You miss a coffee-time chat with a student on the doctoral consortium who, you realise as the conversation develops, ought to be talking to your PhD student. Wandering around the exhibition you pick up a textbook you hadn't heard of that turns out to be perfect for the new module the head of department has just bounced you into teaching. The friendly woman from one of the publishers' stands hands you a review copy and introduces you to one of the authors, who gives you a website with ready-made lecture slides.

On one of the social evenings you end up carousing with an old friend who's now in Austria, a Dane who's now in France, and a German who now lives five minutes from your campus and is working for a company you've been wanting to work with. Together you plot to take over the western world from Gilbert Cockton, but settle for putting an FP7 bid together by the end of the month.

OK I'm sold, how do I get there?

Given the stratospheric nature of keynotes, a full paper represents the pinnacle of ambitions for most of us in this conference. In an RAE year, management *will* find the money to allow you to give a full paper at HCI, because it is so competitive. Not many people make it. I never have, though each year I get a little closer.

The acceptance rate varies from 25% to 33% in any given year. The papers are reviewed blind by 3–5 HCI experts from around the world. We have around 300 reviewers on our books (you can see a list of past reviewers on the website). We receive papers from around 25 countries, and typically around half of the accepted ones are from the UK. Each paper gets a rating between 1 (low) and 5 (high) by the reviewers, and the reviews are then meta-reviewed, all anonymously. A paper generally has to average more than 3.5 to be considered, and more than 4 to be relatively sure of acceptance – a tall order. The programme committee convenes over a two-day period to select the best, sometimes in heated exchanges! What remains is substantial, and a match for any conference.

You have until 31st March. I hope you'll submit and I hope you're accepted. Even if you're not, the quality of the reviews is usually excellent, and provides much of what you need to refine the paper for a journal, or to carve out a short paper or two from it. The deadline for the short papers and a number of specialist categories is not until May, so you'd then have a second chance to submit.

See you in Lancaster in 3rd September. I'll be 'L' three weeks later so help me celebrate the end of my youth and to recognise *HCI, but not as we know it*.

Tom McEwan, Napier University
t.mcewan@napier.ac.uk

Playing at HCI

Figure 1 Keith Waters. 1987. A model of the Statue of Liberty animated using Fortran subroutines developed by John Vince. Waters was the Centre's first PhD student. For several years the Centre was principally concerned with computer animation, but most of its work now relates in some way to interaction.

The Lansdown Centre for Electronic Arts is a university research centre, but situated within an art school. While concerned with human interaction with systems, not much of its work has been formally evaluative. Nevertheless this article may contribute to the discussion of two different educational traditions, as well as, I hope, introducing interesting projects. Our research is closely tied into teaching, and we encourage all students to see themselves as researchers – of some kind – who are as likely as staff to create new knowledge.

Founded in 1985, the Centre is concerned with the creative and critical use of digital and electronic technologies, in particular with media which have become ubiquitous, physical and multimodal. Whereas early work in the Centre focused on the one-way processes of computer graphics – which took so long to compute that they could not respond in real time – most of the Centre's work now deals with interactivity in some form. The MA Design for Interactive Media, still thriving, began in 1992: with the Web in its infancy, the emphasis was originally on the possibilities of CD-ROM. In 1996, Sonic Arts arrived, exploring the aesthetics of sound and music technologies at undergraduate as well as postgraduate levels:

Figure 2 Anthony McGaw, Davie McGirr and Tim Warren. 1994. Part of the display of an 'intelligent refrigerator' conceived as the centre of the electronic home, by students on the MA Design for Interactive Media. Our interpretation of media has always been a broad one.

much of this work is interactive. Most recently, a traditional approach to video has been replaced by integrated Film, Video and Interactive Arts. Ten PhD students are researching topics including non-speech vocal input (Figure 4), algorithmic composition, automated cinematography for interactivity, and the save option in videogames. Most are engaged in hybrid PhDs, which include a significant creative project.

The emphasis of the work is on designing and making. I have never felt that that old accusation 'a solution looking for a problem' is a sound one, and research in the Centre is driven as much by the possibilities of technologies, as by need. Surely many inventions have resulted from such 'playing around' rather than from problem-solving? Historically, quite wrong predictions were made about technologies including electric lighting, the telegraph and the phonograph, as one of my favourite books (Marvin 2003) records. Bill Gaver has pointed out that in 'ludic design' even the designer may not know what users will do with the designed system (Gaver 2004).

Recent projects include a soundscape by Nye Parry for the National Maritime Museum's *Nelson and Napoleon* exhibition, in which multiple channels of different sounds were experienced as the listener moved through the space. Nic Sandiland's *Remote Dancing* at the Royal Festival Hall allowed the visitor to dance with, and in a sense choreograph, a dance partner in screen-space. Ralf Nuhn's *Uncaged* also played at the borders of screen-space and real space (Figure 3). Education-oriented projects have also emphasised making: the *Vertex* project with my colleague Magnus Moar enabled primary school children to build their own virtual worlds; Helen Bendon is exploring how making narratives – stories and films – can support communication within and beyond big corporations. Play is itself of course important to us, for example in *'Ere be Dragons* where live heart rate and GPS data are used in a pervasive artwork/game (Boyd Davis et al 2006a), and *Smell Me,* which used computer-controlled odour as a substantive element of gameplay (Boyd Davis et al 2006b).

So, making is at the heart of what we do, but what marks out our work from most other departments where art and design are combined with technology is our interest in evaluation. Suppose that a benefit of playful open design is that it can take us into areas of the design space that might not otherwise be discovered; how do we know that what we find there is of value? Some kind of rigour is called for. Alan Dix's call to

Figure 3 Ralf Nuhn. 2004. A visitor interacts with *Bubblelabub*, part of Nuhn's exhibition *Uncaged* at the V&A Museum of Childhood in London. As the visitor squeezes the bar, the on-screen figure is seen to blow into a tube; at the same time, bubbles appear in the real flask of water. The exhibits playfully problematise the relationship between the on-screen and physical worlds.

combine childlike playfulness with more adult-like rationality is a nice way of characterising a solution (Dix 2003). There is no doubt in my mind that we are still trying to find the best in two cultures here. One of our alumni, now teaching, emailed me in distress to say that her computing students only accept things as True or False – they like model answers, and expect the same in design – while her design students love to make the screen look fancy, but ignore accessibility and usability. Though art–science projects are fashionable, I see little evidence that most artists understand – or, more importantly, want to understand – the challenging, questioning, undermining approach of good science. If I myself had not had the luck to work in a Centre with colleagues from science and maths backgrounds, and particularly with John Lansdown, the wise multidisciplinary individual after whom the place is now named, I would probably share some damaging assumptions.

Nowadays, we like to be part of the HCI discourse – our papers have been presented at HCI, CHI, HCII – both for what we can learn and what we can contribute. When I first came across HCI in the early 1990s, its simple model of design did not resemble any I knew – and why was *pleasure* never discussed? Fortunately, whatever the risk of disintegration highlighted by Yvonne Rogers (*Interfaces* 64), HCI is now a broader church, open to more varied discourses, than in those days. When I first met Richard Hull of HP's UK research labs, he put clearly the value to him of artists: they take the system you have designed and make unreasonable demands of it, perhaps by misusing it as much as using it. Having bought an eye-tracker partly to undertake conventional evaluations, the first thing my colleagues have done is to interface it to Adobe Director so we can use it as an input device to control and modify media!

References

Boyd Davis, S., Moar, M., Jacobs, R., Watkins, M., Riddoch C., and Cooke., K., 2006. 'Ere be Dragons: Heartfelt Gaming. *Digital Creativity* **17** (3) 2006, ISSN 1462-6268, 157–162.

Figure 4 Sama'a al Hashimi. 2006. *sssSnake* exploits a neglected area of vocal input, responding not to words but to other parameters of vocalisation. By making different sounds, two players control the snake and the coin. Europrix Top Talent Award 2006.

Figure 5 Boyd Davis, Moar, Jacobs and Watkins. 2006. '*Ere be Dragons* is a pervasive game which, uniquely, uses live heart-rate data. A landscape forms on the pocket PC reflecting both location and physical performance.

Boyd Davis, S., Davies, G., Haddad, R., and Lai, M-K., 2006. Smell Me: Engaging with an Interactive Olfactory Game. *People and Computers XX – Engage. Proc. HCI 2006*. N. Bryan-Kinns, A. Blandford, P. Curzon, and L. Nigay, Eds. 11–15 September 2006, Queen Mary, University of London. Springer. ISBN 1-84628-588-7. 25–40.

Dix, A., 2003. Being playful: learning from children. *Proceedings of the 2003 Conference on Interaction Design and Children* (Preston, England, July 01 – 03, 2003). S. MacFarlane, T. Nicol, J. Read, and L. Snape, Eds. IDC '03. ACM Press, New York, NY, 3–9.

Gaver, W. W., Bowers, J., Boucher, A., Gellersen, H., Pennington, S., Schmidt, A., Steed, A., Villars, N., and Walker, B., 2004. The drift table: designing for ludic engagement. *CHI '04 Extended Abstracts on Human Factors in Computing Systems* (Vienna, Austria, April 24–29, 2004). CHI '04. ACM Press, New York, NY, 885–900.

Marvin, C., 1988. *When Old Technologies Were New – thinking about communications in the late nineteenth century*. Oxford University Press.

Originally a textile designer, Stephen Boyd Davis has worked and taught in digital media since 1984. At Middlesex he founded with colleagues one of the first Masters programmes in the world dealing with interactive media. Graduates of the programme have influenced interactive media worldwide and won many awards. Stephen runs the Lansdown Centre, a University Research Centre dedicated to innovative work in digital media. He shares the Centre's commitment to continuous innovation – but also sets new media practices in wider historical contexts. His aim has always been to inquire radically into the possibilities of media and technologies, exploiting their special properties to the full.

Stephen Boyd Davis
Head, Centre for Electronic Arts, Middlesex University
s.boyd-davis@mdx.ac.uk

A practitioner's perspective from Germany

Germany has a longstanding and solid reputation in a wide range of design fields, and especially a renowned tradition of excellence in engineering and architecture. In both disciplines, German products are synonymous with high-quality manufacture and good functional design. This tradition was exemplified by the Bauhaus and their ethos of combining fine arts with outstanding craftsmanship. This synthesis created beautiful yet functional products that even after more than eighty years fascinate the eye, and also fulfil the usability requirements of being effective, efficient and satisfactory.

Like most of Europe, German industry faced severe problems after the Second World War. Apart from the physical regeneration, many of its leading designers had left the country for America and many of its design schools had been closed. Despite these setbacks, German industry re-emerged as a global player in the post-war boom, with its solid reputation intact. Part of this success was built by integrating sophisticated technology with compelling brands such as Braun and MAN in consumer and industrial products.

Moving to the present day, Germany ought to be a rich market for usability, user experience and human factors professionals. Our foreign trade statistics prove that the old slogan 'Made in Germany' still sells (at least outside our nation), because it promises manufacturing quality in every sense – from durability and feature distinction to ease of use. In order to deliver this wider concept of quality, German industry needs to adopt a more user-centric approach, and there are clear signs that demand for the services of usability professionals is increasing.

The usability market

The largest dedicated German usability organisation (the German Chapter of the UPA) has a membership of almost five hundred members. This number has been achieved by steady growth since 2002 when it started with around forty members. The growth of the Chapter mirrors the increasing interest in the subject and also an emerging sustainable profession within my country. Despite the impressive relative growth, however, 500 German usability professionals may be too few to build the market for their services, at least compared to other related professions[1].

So one might describe the German usability professional as a species that is still small in number, but with an interesting growth potential. At this point, two main questions come to mind: What does the typical German usability professional look like? And what kind of work do they do? The latest official German usability market report [4], carried out by the GC-UPA in 2003, offers some answers to these questions despite being based on a small sample. Nevertheless it is the only professional market research so far to focus exclusively on usability in Germany[2] and, according to this analysis, a typical usability professional (UP) could be characterised as:

- German
- male
- 30 to 35 years of age
- Employed in a usability/HCI or R&D department of a mid-sized IT, service or industrial organisation established later than 1995. Practitioners working in market research, web design or quality assurance departments were comparatively few at this time, as were specialised usability consultancies.
- Located in northern or southern Germany
- Annual gross income of €47000 (+/–13000), and not unhappy with it! By today's standards, the average income in Germany is still lower than in Britain.
- Possesses eight years' professional experience (usability plus other experience) in two to three different companies. Marketable factors were seen in terms of years of practical experience and academic qualifications.
- Of non-usability professional origin (e.g. psychology), with a self-initiated specialisation in usability.
- Knowledge was mainly gained by self-study or 'on the job', with some basic job-related academic human factors skills
- Carrying out usability-related job tasks included design, usability testing, and expert analysis for software products, web sites or mobile devices. Testing was mainly done without fixed usability labs.

From my perspective, this report paints a positive picture of the German usability market in 2003. Despite a long academic tradition in ergonomics/human factors research, a standardised 'usability-only' career that could be studied at a number of different academic institutions did not exist. This situation has only recently changed. In terms of usability engineering maturity as stated in DIN EN ISO 13407 [6], 'producing design solutions' and 'evaluating design solutions against (user and other) requirements' is the core, and in many cases the only, user-focused quality measure applied within product development. To 'understand and specify the context of use', e.g. in the form of user requirements engineering, task analysis and conceptual design, is still not widely adopted. Indeed, many respondents of the survey did not even know the meaning of focus groups and were unfamiliar with standardised questionnaires such as SUMI [7] and the German ErgoNorm [8]. Also, some basic design techniques such as card sorting were not widespread. Once again, this has not changed until recently[3].

Usability within German industrial design, i.e. the design of products and prototypes with physical interfaces, was an undeveloped area. The one exception, in 2003, was mobile phones. With the collapse of Siemens/Benq Mobile, however,

1 The Association of German Engineers (VDI) [2] has about 5000 members; the Association of German Professional Psychologists (BDP) [3] even more at 13000.

2 GC-UPA is currently preparing a follow-up study for the second half of 2007.

3 The reason for the latter may be that traditionally many German companies still rely on 'classical' market research if it comes down to the question "What does the market need?", and 'classical' engineering for the question "How do we have to build/construct/manufacture it?". And, of course, web design agencies staffed by graphic designers, not interaction design experts, are delivering web designs.
But this – still unbroken – tradition may lead into a usability dead end. According to the GC-UPA study, classical market research departments and/or companies, for example, did not seem to be typical contemporary employers of usability professionals – at least in 2003. The question arises: why not? And if so, why the German industry expected (still expects?) valid usability tests or user requirement analysis to be delivered by classical market research? The same question could be asked in the engineering and web design fields.

this sector has significantly contracted[4] and future surveys will show whether this loss can be compensated for by the growth of usability-oriented engineering in other sectors.

The future

As the 2003 survey suggested, the 'typical' practitioner was employed in a non-usability organisation. Due to the historically stable growth of the German economy (and usability market?) one might expect the importance of usability consultants, working freelance or in larger specialised consulting firms, to have grown. So let us now take a closer look at this particular market segment, once again based on the 2003 data. According to the GC-UPA report, the profile of a 'typical' outsourced usability project carried out by a specialised service company looked like this:

- Based on a fixed price
- Value of €34300 (+/–23400)
- Involved usability testing, task analysis, expert evaluations or prototyping

Almost four years have passed since the last German usability market report. In the meantime, the German economy has continued to grow. Within my own work, I have witnessed a new development: even non-usability project staff care about the topic. Usability departments inside companies are more established and are gaining internal influence. Sometimes even management boards of big enterprises are now aware that usability should play a role for them in business strategy. As an example of the growing interest in usability, eleven German cities participated in the second World Usability Day. This involved all kinds of local events [9] including speeches, discussions, workshops and demonstrations throughout the country.

Has Germany transformed itself into usability paradise? Not yet, but the situation is definitely improving. For one thing, rising demand has led to a shortage of high-quality usability practitioners. Yes, there is a growing interest in usability, although academically grounded and experienced usability experts are still hard to find. Indeed, general interest does not translate into the ability to apply the right methods in a professional way when needed, even if many people are claiming to do so for marketing reasons.

Given current demand, it is no wonder that many people claim to be usability consultants. Keep in mind that easily available, standardised usability education and knowledge are still lacking, and the quality of these services almost inevitably must vary, although this is a problem not confined to Germany[5]. Add to this that increased demand means that clients are now more familiar with usability processes and want more than just testing. In other words: from my perspective, the quality of usability services is now broader than at the time of the first GC-UPA market report.

Nevertheless, requirements engineering and task analysis are still absent from the portfolios of most usability service providers (and market research companies!). And the situation that most web and software designers still have a background in graphic design or computer sciences, rather than user interface ergonomics and/or interaction design, continues. The same also applies to hardware design.

Conclusion

The international competition will not sleep – the UK and USA already have mature usability markets, and China and India will be next in competing within broad export-oriented industries. In order to keep an edge, Germany will have to incorporate more usability of a substantially higher quality into its products as a distinctive factor if it does not want to fall behind. So I am pretty sure that the usability race is on now in Germany and I am eager to see where it leads us to in the future.

References

[1] GC-UPA: German Chapter of the Usability Professionals Association www.gc-upa.de/ (German only)

[2] VDI: The Association of German Engineers www.vdi.de/vdi/english/index.php

[3] BDP: The Association of German Professional Psychologists www.bdp-verband.org/bdp/verband/englisch.shtml

[4] GC-UPA e. V.: Branchenreport und Honorarspiegel 2003 www.gc-upa.de/files/upa_report_fn.pdf (German only)

[5] UK UPA: UK UPA salary survey http://ukupa.org.uk/resources/archives/000122.html

[6] DIN EN ISO 13407: Human-centred design processes for interactive systems www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=21197

[7] SUMI: Software Usability Measurement Inventory http://sumi.ucc.ie/

[8] ErgoNorm: Ein Verfahren zur Konformitätsprüfung von Software auf der Grundlage von DIN EN ISO 9241 Teile 10 und 11 www.ergonomic.de/files/abschlussbericht_de_lang.pdf (German only)

[9] GC-UPA: World Usability Day Deutschland www.worldusabilityday.de/ (German only)

[10] UK UPA: Key questions to ask your usability testing supplier http://ukupa.org.uk/resources/key_questions.pdf

Ralph Hinderberger from Germany is founder, owner and principal of User Experience Management, an independent usability consultancy and service provider located in Dusseldorf, Germany. He is a board member of the GC-UPA, and co-author of the German usability handbook 'Usability praktisch umsetzen' (How to apply usability the practical way – Carl Hanser Publishers, Munich). For more details, please refer to the company web site www.ue-management.com.
Email: ralph.hinderberger@ue-management.com

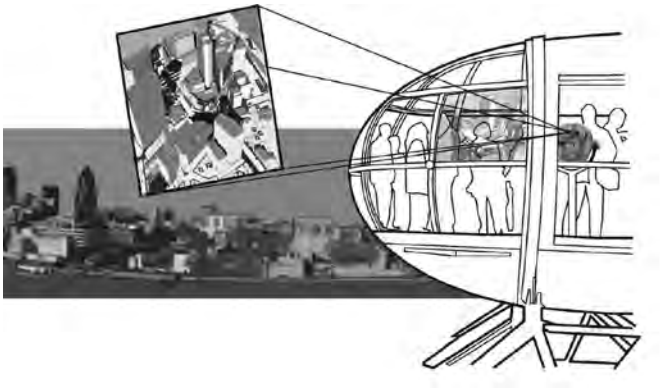
Dr Maria del Carmen Martinez from Argentina is co-founder, co-owner and the second principal of User Experience Management. She is also a GC-UPA board member, and supported two publicly sponsored projects: 'MobilMedia' as a member of the 'Usability Task Force', and 'Virtual Software Competence Centre VSEK' as a member of the industrial advisory board.
Email: dr.maria.martinez@ue-management.com

4 Historically, the German automotive sector does not rely on 'usability' but on 'ergonomics', i.e. placing a strong emphasis on making cars safe and comfortable for the driver on an isolated functional product level. The establishment of usability engineering as an important part of the overall product development lifecycle seems to be a comparatively new development, not to mention using user requirements as a driving force for research on completely new or radically different products.

5 The UK Usability Professionals Association [10] has published guidelines on how to select professional usability testing partners. The reason for doing so should be obvious.

‘Re-Presencing A Denser Now’
Scopic devices for the London EYE

Mike Waller and Terrence Rosenberg



Project summary

‘Re-Presencing A Denser Now’ is part of a wider research programme. This programme is a set of explorations into media spaces – the reconfiguration of geographical, social, economic and political spaces and the role of new technologies of communication. It is an interdisciplinary group, spanning media studies, screen studies, sociology, anthropology, design and computing, and not only studies media spaces but also designs them to better understand their future potential. These research projects will be based at Goldsmiths, University of London, and will run over the next five years. The programme successfully gained £1.25m funding from the Leverhulme Trust.

This particular project within the programme ‘Re-Presencing a Denser Now’ was introduced with a paper at the International Design and Engagability Conference within NordiCHI in October 2006. The paper set up a critical background for the design of conceptual prototypes of digital viewing devices for locations like the pods of the Millennium Wheel (London Eye). The project will develop various ideas for interactive media devices that will reproduce views of the London cityscape as mediatised scenes that play with representations of the past, the live present and possible futures. The antecedents of this project are the slot-machine binoculars installed on the pier, the public telescope and the camera obscura.

The proposed scopic devices will act both as a window through which one can view, and also as a screen onto which one can project, the spaces of the city. By using a number of constellated technologies we can derive a quilt of information that will enable the devices to re-presence events. From the pod, users of the device will be able to look into the city and move across and through its spaces, gathering views of its streets, buildings and events from various perspectives and from different times. There will be new types of speculative objects that will be placed within the city to generate, capture and transform content to add to the re-presenced view.

End-user mobile technologies are being used to capture scenes, aurally and visually, and relay information to the device’s database utilising existing telecommunication networks in combination with readers and broadcast devices installed in the urban spaces for the project. We will also be using video telemetry based virtual models from a commercial sponsor in combination with the ‘actual’ real-time views to enable different constructions and deconstructions of the view. One may also, by using the model, peel away buildings or the fabric of buildings to reveal spaces that can’t usually be seen from the Eye. This project will open a series of discourses around emergent technology. We hope these debates will help shape and direct the project whilst informing our design practice and locating the research within the complexities of everyday society and culture.

The full paper is available from:

Proceedings of the 3rd International Design and Engagability Conference (Idec) October 2006
Edited by J Knight, J.G. Sheridan and C Tortensson

ISBN 0-9554295-0-1

Mike Waller and Terrence Rosenberg
Department of Design
Goldsmiths, University of London
http://www.goldsmiths.ac.uk/research/

Idec 3 also included the following papers:

Engaging Users for a Better Work Experience by Izabel Barros, Dave Lathrop and Bruce Simoneaux
Unveiling People’s Inner Needs, Desires and Fantasies to Help Forecast Future Interaction Experiences by O. Tomico et al.
Designing for Engagement in a Simulation Game for Learning by Cecilia Katzeff and Carin Torstensson
Visual Design of Virtual Pedagogical Agents: Naturalism versus Stylization in Static Appearance by Agneta Gulz and Magnus Haake
Engaging Experiences with Emotional Virtual Therapists by Chris Creed and Russell Beale
Engagement in Users – a New Approach to Open Source Development by Lene Nielsen et al.
Engaging Students in Active Learning: a Virtual Environment by Sue Barnes and Viv Bell
Is Mobile TV Engaging? by Anxo Roibás
Real Pong and Virtual Tennis – Hybrid Spaces in Everyday Life are Possible by Joost van Eupen et al.
Think Local: Merging Online and Real Life Communities by Frank Jesgarz et al.
Re-Presencing a Denser Now by Terry Rosenberg and Mike Waller
Urban Navigation and the Pedestrian by Andrew Furman
Digital Art: Towards Ambient Engagement by John Knight
Video Storytelling as an Experiential Database for Volunteer Festival Workers by Cecilia Katzeff and Vanessa Ware
Person-Centred Design Methodology as an Instrument to Create New Products by Denise Dantas and Leda Gomes.

Experiencing design
Early responders

Robert St Amant

Everyone likes a responsive machine, one that reacts quickly to what needs to be done, in the best case behaving almost as if it anticipates one's actions. Unfortunately, it turns out that responsiveness is a double-edged sword.

> In a cafeteria the other day, I was standing at the tiny check-out counter to buy lunch. The checker waved my sandwich package in front of the automatic scanner (beep), put the package down, and took my money. As she handed me my sandwich, though, the scanner beeped again. It had re-read the package label and rung up another charge for it on the cash register. The checker needed to pull a key from her pocket, unlock the register, enter a password, and re-scan the package to undo the transaction.

> The button to activate the camera and take pictures on my cell phone is on the side, for easy access. When the phone is in my pocket, though, banging against my keys and such, this button can easily be pressed by accident. I recently had to delete 27 photographs that had been taken of the inside of my pocket. This took me 108 key presses. Once the phone is in 'Picture Gallery' mode, here's what you need to do for each picture:

> 1. Bring up a menu.
> 2. Select the sixth choice, 'Erase'. (The menu only shows three choices at one time, but if you know its number you can select a choice, without scrolling, by pressing the appropriate key.)
> 3. Answer the question, 'Erase picture?'. The default is always 'No', so you need to press the arrow key to highlight 'Yes' and then press the 'Select' key.

We can find comparable examples in conventional computer hardware, along with ways to repair potential usability problems. For example, on the trackpads of some laptops, a tap with the finger is interpreted as a click. I can adjust the sensitivity of my trackpad so that it ignores 'accidental' taps, which might happen when I first touch the trackpad, with perhaps too much vigour. There is also a software element to addressing this problem: applications should be designed such that a single inadvertent click does not have disastrous consequences.

We find further examples of overly responsive behaviour in software, independent of hardware. My web browser automatically completes the addresses of web pages that I type, based on my browsing history. Unfortunately, it sometimes happens that I type in a top-level address, such as www.amazon.com, and the system automatically extends the address to the last page at Amazon that I have visited. I can avoid the automatic completion if I type the address and hit the return key quickly enough, but that is hardly a perfect solution. On the other hand, automatic completion is so useful that I would regret having to turn it off. Similarly, in creating a layout of graphics and text, I sometimes want to place an object almost but not quite in alignment with another. Unless I first turn off the snap-to-object or snap-to-grid mode, the software automatically repositions the object I am dragging to a place it thinks is appropriate but I do not. (A quick jiggle of the mouse, as a 'waving off' gesture, seems a natural way to temporarily suspend the mode, but I'm not aware of any application that implements this.) In both of these software examples, a few extra steps are need to reach the results I'd like to have.

We can resolve these kinds of usability problems in different ways. We might treat them all as issues of commensurate effort: we ensure that inadvertent user actions or overly eager system responses can be reversed without great effort. More directly, we might think about eliminating pro-active system behaviour and put guards in place so that unintended actions happen less often; this can be problematic, as the first two real-world examples show, and there is a balance between the cost of carrying out a correct action and the value of preventing an incorrect action.

So, the critical lesson to be learned from all this is that responsiveness in a system, responsiveness that leads to user actions being carried out as quickly and efficiently as possible, has tradeoffs. Designers must understand the context in which a system will be used well enough to know when immediate responses are warranted and when they are likely to result in more effort than not. I'm not aware of a single conceptual framework that can pull all of these examples together and explain how they should be resolved. It may be best to end with a real-world example of how to solve the accidental-button-pressing problem:

> I have an iRiver that I use to listen to books on tape. The device fits in a protective case that covers all but the top edge, and it has a strap that snaps closed over that. To pause the device, I have to get the device off my belt (or out of my purse), unsnap the strap, pull the device out of the case, and press the pause button (which is on the face of the device in the lower third, so I have to remove it from the case completely) twice. Which means that I have to use both hands and an additional surface, because I need somewhere to put the case, one hand to hold the device, and one to press the button.

Problem solved?

Robert St Amant is an associate professor in the computer science department at North Carolina State University. The work in his lab is a blend of human–computer interaction and artificial intelligence, with an emphasis on planning concepts. He's interested in building intelligent tools to help users with complex tasks.

Robert St Amant
www.ncsu.edu/~stamant

Interfaces Reviews

As this is my last edition as Reviews Editor I thought it would be good to do something slightly different. Doing something different was helped by the publication of *Designing Interactions* by Bill Moggridge. It has already created quite a stir and is unlike any other book on Interaction Design. *Creative Review* have featured a whole edition on it and suddenly I am not so quiet about what I do. According to Donald Norman,

> This will be *the* book – the book that summarises how the technology of interaction came into being and prescribes how it will advance in the future. Written by the designer who was there, who helped make it happen, who pioneered the digital revolution. Essential, exciting, and a delight for both eyes and mind.

Uncommonly I agree with one half of the Nielsen-Norman Group. Because it is my swansong I thought I should take the opportunity to note a few grudges I have with HCI books along the way in this review.

Designing Interactions
Bill Moggridge
The MIT Press, 2006
Hardback, 816 pp.
Illustrated: colour
List price £22.95
ISBN: 978-0262134743

I went to a comedy night before I got a copy of *Designing Interactions*. The comedian asked if anyone had come a long way. I said Germany (this was in North London). He asked whereabouts in Germany and what my job was. This has happened before and maybe it has happened to you. Whenever anyone asks what I do my mind goes blank. What do I do? Am I a researcher, a designer, a Usability Professional – I am not happy with any of them.

The audience was getting restless and all of a sudden the word ergonomist popped into my head. I thought, oh so that is what I do and people have heard of ergonomics and it sounds important. "What does an ergonomist do?", was the reply. The point is if I had had a copy of this great book I could have immediately said that "I design interactions and it's very trendy and has books written about it like this really good one".

The first thing you notice about this book is its size. At over 800 pages it must be one of the biggest design books ever. This is partly explained by it only being oversize A5, but even so it is a doorstopper. Second thing that you notice is that it is crammed with full colour pictures and looks very trendy and attractive. The nearest equivalent would be a coffee table book on Apple. This is a book that people will want to buy, and will potentially open a new audience for our work. In addition, its design alone will alter people's perceptions about our community – I would suggest in a very positive way.

Behind the gloss is some important and rare content. I would say this book will do more for HCI than a bucket load of Nielsen diatribes. While the HCI community has been doing some soul searching, this book neatly encapsulates what we do – research and design – and makes it relevant to industry and consumers alike. In addition, despite talking a lot about design it is much nearer to a traditional HCI approach than appearances might suggest. Interaction Design takes the traditional focus of product and industrial design but integrates user-centric methods of development and even takes ideation into account. Thus we are offered a distinctive and desirable product that delivers not just usability but great products and services that people want to buy and companies want to sell.

Unlike traditional design disciplines, interaction is not limited to product typologies. Services, games, as well as phones and a plethora of other things are all suitable areas for interaction design. Furthermore, in dealing with interaction this new discipline is also not limited to the product or to the service but the whole user experience.

The book looks good and applies understated but well-considered design principles throughout. For example, the structure is historical, which is immediately intuitive and takes the reader on a journey rather than through a business plan or ABC. This is not a book that dumbs down what we do or pretends that usability is easy: Moggridge makes us think.

The historical approach is also useful

for introducing people, some of whom will be well known and others not. Included are Doug Engelbart, Bill Gaver, Hiroshi Ishii, John Elenby, Brenda Laurel and Fiona Raby. It was good to see some of the people involved in the early days of interface design, and that many of these were humble technicians and programmers. The Engelbart chapter is brilliant and describes 'The demo that changed the world' with original photos and screen shots of early interactive devices.

The historical flow goes through some key products. The development of the first laptop is described. The invention of the mouse and the decision to use a desktop metaphor explained. The book comes right up to date and includes everything from gesture recognition to tangible user interfaces. The end of the book is devoted to design methods so there are also some useful practical outcomes to be gleaned from reading it.

I have to say something negative, so here it is: the book's home is a strange place between California and Kensington. The Mid-Atlantic tone is sometimes a bit offputting: "Living in the valley through the Internet boom and bust was quite interesting, mostly for my students who became CEOs of companies overnight…" (p. 299). I am being flippant: the only serious omission is the lack of representation from the Nordic countries and in particular the Participatory Design movement. But let's not get pedantic, this is a really important book and one we should encourage people to read. It might be just what the third wave is looking for.

Background to the interview

I get to read quite a lot of design and HCI books so one of the first things I wanted to know about *Designing Interactions* was why it had come out now and what was the intention behind it. The book looks and feels very different from most (probably all) of the competition, so was it a response to the more academic and commercial books on the subject that tend to be mutually exclusive in either writing for a business or research readership? I was also interested in how the structure and approach were decided. Few, if any, HCI books take a historical or product approach even though this has a very intuitive appeal that is enriched by the personalities of those involved.

Bill has included a lot of people in the book and not just as references or gurus. I was interested how he came to choose them, especially as many of them will be in print for the first time while other well-known figures are consigned to footnotes. The book is a convincing argument for good design based on integrated user research rather than either a focus just on traditional design concerns or a total research approach. I was interested in how these two aspects reflected the values of the author.

I know many *Interfaces* readers will be teaching, and so, given Bill's background in Art and Design education, I wanted to know how his approach translates into programmes and curricula, if indeed it does, and what we can learn from the dual focus on design and research in our teaching and learning work. In recent years I have noted the rise in ethical consumerism and become interested in how this translates into design, and in particular whether it offers an alternative and positive mode of Interaction Design. I was intrigued if this resonated with Bill and whether there are opportunities to pose value-based design as a better and nicer way of promoting what we do. Lastly, in the spirit of third wave HCI I thought it would be good to get an objective view on our community so I wanted to know what message Bill had for the HCI community.

***JK* Why has the book come out now?**

BM Interaction design is a young field with not much written about it so far, but it is mature enough to merit the publication of a book that gives a general account of the field. I wanted to create not just a book, but also a complementary DVD and website. As a designer I always start with people and what they want from the design, so the book reflects this in terms of aesthetics, with full colour and lots of images. The DVD allows viewers to get a sense of the personality of the people involved in the book by watching the interviews on video. There is also a website where one can browse for interviews and chapter content, as well as being able to download the chapter of the week without having to buy the book, including both PDFs of the pages and QuickTimes of the videos.

***JK* How did you decide on the format?**

BM The book is a living history of those who have made a contribution to interaction design. In the early chapters, this includes originators and inventors. The middle chapters are about particular subject areas, such as play and the Internet. The latter part looks at the future and offers some conjecture on where the discipline is going, followed by a final chapter that gives an account of the methods and process that we use at IDEO.

***JK* How did you select the contributors?**

BM I looked for people who had done something original or had an interesting point of view, including some key contributors who are unknown outside of the interaction design community. Fortunately, all of these people are still alive, so I was able to interview several creators of the first of a kind, such as Douglas Engelbart who invented the mouse. I interviewed the Google founders in 2002 before there was any talk of them getting famous. Larry Page came along to the video recording studio looking like a normal person, but Sergey Brin arrived on his roller blades, wearing a crumpled Google tee-shirt. By the time the book was published it was all very different, with Google a public company that everyone knows about. In this sense the book captures a period when interaction design is reaching a wider audience and having a huge impact.

***JK* How does the book reflect your interests?**

BM I want to tell stories about design. The first stage in my career was as a designer. As IDEO grew, I spent more of my time managing design teams. Now I am hoping to explain the contribution of design to a wider audience. The interviews in the book reveal how design happens and what are the motivations and values involved in doing it. I hope to communicate to people that good interaction design is carefully researched and explain how this happens.

***JK* How should interaction design be taught?**

BM Design disciplines share a common creative process of design thinking, synthesis, creating and envisioning alternatives, intuitive choices, visualisation, prototyping and so on. The difference between them is the stuff that the designer needs to know about; for example, an industrial designer needs to know about manufacturing processes and business practices, an architect needs to know about building methods and spaces at an environmental scale, and an interaction designer needs to know about the structure of software and users' conceptual models. The teaching methods for all these kinds of design are based on projects, where students learn-by-doing in a studio environment.

***JK* What are your views on ethical design?**

BM I have always been interested in designing things for people to use and enjoy, whether those things are everyday objects in our homes, new technologies that we interact with, the spaces around us, or the experiences that we encounter. This leads to an ethical design philosophy that focuses on people, using methods to identify design opportunities by revealing people's latent needs, behaviours, and desires, and by realising new ways to serve and support them. When you take this design approach, you inevitably find yourself needing to design the parts of the experience that are enabled by digital technology, hence interaction design. Sustainability is another prevalent ethical issue where interaction design has an advantage over physical design, as electronic technology allows us to design software, systems and services that reside in virtual space, avoiding the challenges of needing to specify materials, when the designer has very little control over most of the product lifecycle.

***JK* What is your message for the HCI community**

BM We have been talking about interaction design in the context of the creation of the aesthetic, subjective and qualitative aspects of a design solution, the kind of design that you learn at an art school. There is a broader and more mature kind of interaction design that includes the work of HCI professionals, computer scientists, software engineers, cognitive psychologists, sociologists and cultural anthropologists. These are the people who think first of the performance aspects of the design, developing solutions that are usable and work well. They think objectively with scientific expertise, understanding the functionality of man–machine systems. This is essential for all designs, particularly those that we use in a work situation, where we want to be productive and efficient. For the products and services that we interact with in our private lives, we also want to enjoy the experiences in an aesthetic and subjective sense; it is in this consumer realm that both kinds of interaction design come together. My message to the HCI community is to collaborate more closely with art school based interaction designers, to be ready to create designs that enhance lifestyles, are easy to learn and enjoyable to use.

Win a copy of *Designing Interactions*

Simply answer the following question and email to John Knight, john.knight@intiuo.com.

What is the name of the inventor of the mouse, interviewed by Bill Moggridge in the book?

OK so thanks…

to all the publishers for sending me books and to the reviewers who have volunteered their time. As with *Interfaces* as a whole, we rely on the participation of the community and I would encourage all of you to get involved.

Please contact Shailey Minocha (the new Reviews Editor) if you want to review a book, have seen an interesting one you think should be reviewed or if you have published one yourself recently.

Dr. Shailey Minocha
S.Minocha@open.ac.uk

Faculty of Maths & Computing,
Department of Computing,
Open University, Walton Hall,
Milton Keynes MK7 6AA, UK

Get involved and contribute to *Interfaces*

- Do you *disagree* with something in *Interfaces*?
- Would you like *more coverage* of a certain topic?
- Have you just completed a *great piece of research* that you want to share?
- Have you been to a *conference* that you can report on?
- Are you at the end of a *project* that the rest of the HCI community would like to know more about?
- Have you read a *brilliant book* more people should know of?
- Do you think *your department* has done great work and the HCI community would be interested in it?

If you would like to contribute to *Interfaces* please contact us by email john.knight@intiuo.co.uk

HCI 2007

Full Paper deadline now extended to
31st March 2007

3 – 7 September 2007
Lancaster University

Deadline for Full Papers, Workshops and Tutorials: 31st March 2007

Download the Call for Papers at
www.hci2007.org/downloads/HCI2007_CFP_first.pdf

Call for Papers

ASSETS 2007
Ninth International ACM SIGACCESS Conference on Computers and Accessibility
October 14-17, 2007
Tempe, AZ, USA

The ASSETS series of conferences explores the potential for Computer and Information Technologies to enhance the lives of individuals with disabilities and those around them.

submission deadline **25 May 2007**

www.acm.org/sigaccess/assets07/

Call for Participation

GALA 2007
Gathering of Animated Lifelike Agents
at the 7th International Conference on Intelligent Virtual Agents
IVA 2007 • 17 – 19 September, in Paris

Submission categories
Race Reporter
Animated Lifelike Agent Application
Animated Lifelike Agent Creation

open to students from any university

submission deadline **15 May 2007**

http://hmi.ewi.utwente.nl/gala/

Call for Papers

Special Issue on Mobility:
Understanding mobile use and users
International Journal of Human–Computer Studies

This Special Issue seeks to foster a scientific understanding of the three related topics: (1) mobility, (2) mobile users, and (3) mobile use. The purpose is to provide a timely review of research efforts on the topic.

Co-Editors
Antti Oulasvirta • antti.oulasvirta@hiit.fi
Stephen Brewster • stephen@dcs.gla.ac.uk

submission deadline **30 May 2007**

http://www.hiit.fi/~oulasvir/scipubs/call.pdf

John Knight talks to Alan Dix

I work in user experience in the mobile phone industry. I originally studied fine art and have had a couple of exhibitions in recent years. I have always worked in the creative industries and spent a long time in print and publishing where I developed a love for the smell of ink on paper. I also saw at first hand how technology could be used for good and bad (remember Wapping?). This got me interested in how technology can improve people's work and led to me to study HCI at Guildhall. From there I ran User-Lab for six years. I love music especially Northern Soul, which I continue to go crazy about every time I hear it. I currently work in Germany but home is Brixton, Ricky or Finland.

Related websites
http://www.nothingness.org/SI
http://virtual.finland.fi
http://www.newuntouchables.com
http://worldofknight.blogspot.com

The Three Cities exhibition: Watford, Nanterre and Mainz, 1st March to 5th May 2007 at Watford Museum, has new works by John

What is your idea of happiness?
Cider, sauna and summer cottage with my girlfriend Elina

What is your greatest fear?
Long-term painful illness

With which historical figure do you most identify?
Guy Debord

Which living person do you most admire?
Apart from my mother? Muhammad Yunus or Paul Smith.

What is the trait you most deplore in yourself?
Wanting and waiting for approval

What is the trait you most deplore in others?
Flakiness

What vehicles do you own?
A Raleigh Caprice and a Mountain Bike

What is your greatest extravagance?
Taxis

What makes you feel most depressed?
Lack of care and consideration for others and not realising the impact of individual actions in design, politics, customer care and public transport. I am a curmudgeon in short.

What objects do you always carry with you?
A notebook

What do you most dislike about your appearance?
Pretentiousness

What is your most unappealing habit?
Changing

What is your favourite smell?
Oil on canvas – ink on paper

What is your favourite word?
Sprudel

What is your favourite building?
FNAC, Les Halles, Paris

What is your favourite journey?
London Bridge to Marylebone High Street via Covent Garden and SOHO by foot

What or who is the greatest love of your life?
Northern – black, gritty passion from Wigan and Blackpool

Which living person do you most despise?
The homophobe who tried to kill me

On what occasions do you lie?
When it's the most plausible option

Which words or phrases do you over-use?
Anyway

What is your greatest regret?
Only getting one 'O' level at school

When and where were you happiest?
When DJing went well

How do you relax?
Not at all well

What single thing would improve the quality of your life?
A workshop, i.e a studio, nothing to do with Post-It notes thanks very much

Which talent would you most like to have?
To paradiddle well

What would your motto be?
"Keep on keeping on" by N.F. Porter

What keeps you awake at night?
Papers, pictures and projects

How would you like to die?
When it's OK with everyone else

How would you like to be remembered?
As a tribune of the people

British HCI Group – Application Form 2006–2007 ***Please print or type***

www.bcs-hci.org.uk

Contact Details (Give a personal contact when asking for Corporate Membership)

Title ..... First Name ..... Last Name .....

Work Address.....

.....

Tel. .....Fax. .....

E-mail.....

Nature of the work you do: .....

Home Address.....

.....

Please send mailings to: my work address ☐; my home address ☐.

Membership Status

Current British HCI Group Membership No. (if applicable).....

Current British BCS Membership No. (if applicable) .....

Student status (if applicable, e.g. Bachelors, Masters, Doctorate) .....

Professional Interests (please indicate up to six areas of professional interest)

.....

.....

Membership Directory

Do you wish your contact details and professional interests to be listed in the Membership Directory sent to all members of the group? (We will NOT use your home address, unless that is all you have given us.) Yes ☐ No ☐

Getting Involved…

We are always looking for people interested in contributing to HCI group activities by, writing for *Interfaces* magazine, helping run the annual conference or joining the executive. If you are able to contribute in this way or if you have ideas for 1-day meetings or new activities please contact Janet Read (JCRead@uclan.ac.uk)

Data Protection Act

The data on this form will be treated as confidential to the BCS. Names and address may be used, under our strict control, for mailings judged by the British HCI Group Executive to be of value to the membership.

Membership Fees 2006 – 2007

BCS Member £30 ☐ Non BCS Member £35 ☐ Student £10 ☐ Corporate £235 ☐

Associate Member of BCS and BHCIG £70 ☐

Corporate membership entitles the organisation to 8 copies of *Interfaces* and other mailings; membership rate for any 4 individuals at British HCI Group events, as well as a free one-page entry in the membership handbook.

Journal Subscription to 'Interacting with Computers'

The HCI Group manages a journal, *Interacting with Computers*, published quarterly by Elsevier Science. Members may subscribe to this journal at a reduced rate (£55.00). Vol 19:1 is published in the winter of 2006/2007.

Please send me Vol. 19 (2006/2007) of *Interacting with Computers (£55.00)* £ .....

Please send me Vols 17 & 18 of *Interacting with Computers (£105)* £ .....

Please send me a free sample issue ☐

Payment

Please send me a Direct Debit Mandate ☐, *or*

Please enter the total amount for membership and subscriptions £ .....

I enclose a cheque/postal order (in Pounds Sterling only please), made payable to **British HCI Group**, *or*

Please debit my Access/Visa/Mastercard

Card number ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ Expiry ☐☐/☐☐

The information provided on this form is to my knowledge correct and I agree to the conditions stated.

Signature: ..... Date: .....

Card holder's name and address if different from above:

.....

.....

.....

Send completed forms and cheques to:

HCI Membership, British Computer Society,
First Floor, Block D, North Star House, North Star Avenue, Swindon, UK, SN2 1FA
(Tel.+44(0)1793 417417)
Queries about membership can also be e-mailed to: hci@bcs.org.uk

The British HCI Group is served by Sub-groups comprising representatives from a broad range of academic and industrial centres of HCI interest. The Sub-groups are committed to promoting the education and practice of HCI and to supporting HCI people in industry and academia. For contact details of the persons in each Sub-group, please select from the following:

Officers and Sub-groups

CHAIRS AND OFFICERS GROUP
Chair **Russell Beale**
Vice Chair **Catriona Campbell**
Ex-Chair **Gilbert Cockton**
Treasurer **Ian Benest**
Secretary **Adrian Williamson**
Communications Sub-group Chair
Andy Dearden
Education & Practice Sub-group Chair
William Wong
Events Sub-group Chair **Anxo Cejeiro Roibás**
Membership Sub-group Chair
Janet Read
Research (Acting Chair) **Dianne Murray**
Chair of Student Representatives **vacant**

Communications Sub-group
Chair Andy Dearden
Interfaces magazine editor vacant
PR & Marketing Nick Bryan-Kinns
Catriona Campbell, Amir Naghsh (webmaster)
UsabilityNews
Chair of Advisors Nick Bryan-Kinns
Editor vacant
Advisors Gerred Blyth, Jarinee Chattratichart
Rod McCall
Website, listserv and online services
Jesmond Allen, Gerred Blyth
Internal
Peter Wild

Education & Practice Sub-group
Chair William Wong
HCI Accreditation Scheme Jonathan Earthy
Alan Dix, Barbara McManus

Research Sub-group
Chair (Acting) Dianne Murray
Alan Dix, Dale Richards

Membership Sub-group
Chair Janet Read
India/China Liaison Andy Smith
Organisational Liaison Dave England
SIGCHI Liaison Peter Wild
IFIP Liaison Phil Gray
BCS Liaison Barbara McManus
Regional Liaison Daniel Cunliffe

Events Sub-group
Chair Anxo Cejeiro Roibás
Conference Planning Fintan Culwin
European Conference Liaison & Planning vacant
HCI2007 Chairs Tom Ormerod & Corina Sas
HCI2006 Chair Nick Bryan-Kinns
Meetings Officers Colin Venters
Fausto J Sainz Salces (SR)

British HCI Group committee members (alphabetical listing)

Jesmond Allen • tel 01179 020301 • mob 09731 731757 • jesmond@jesmondo.co.uk

Russell Beale • University of Birmingham • tel 0121 414 3729 • fax 0121 414 4281 • R.Beale@cs.bham.ac.uk

Ian Benest • University of York • tel 01904 432736 • fax 01904 432767 • ian.benest@cs.york.ac.uk

Gerred Blyth • Amberlight Ltd • tel 0870 7399900 • gerred@amber-light.co.uk

Nick Bryan-Kinns • Queen Mary University • tel 020 7882 7845 • nickbk@dcs.qmul.ac.uk

Catriona Campbell • Foviance • tel 0207 843 6700 • fax 0207 843 6701
catriona@theusabilitycompany.com

Jarinee Chattratichart • Kingston University • J.Chattratichart@kingston.ac.uk

Gilbert Cockton • University of Sunderland • tel 0191 515 3394 • fax 0191 515 2781
Gilbert.Cockton@sunderland.ac.uk

Fintan Culwin • South Bank University • tel 020 7815 7434 • fax 020 7815 7499 • fintan@sbu.ac.uk

Daniel Cunliffe • University of Glamorgan • tel 01443 483694 • fax 01443 482715 • djcunlif@glam.ac.uk

Andy Dearden • Sheffield Hallam University • tel 0114 225 2916 • fax 0114 225 3161
a.m.dearden@shu.ac.uk

Alan Dix • Lancaster University • tel 07887 743446 • fax 01524 510492 • alan@hcibook.com

Jonathan Earthy • Lloyd's Register • tel 020 7423 1422 • fax 020 7423 2304 • jonathan.earthy@lr.org

Dave England • Liverpool John Moores University • tel 0151 231 2271 • fax 0151 207 4594
d.england@livjm.ac.uk

Phil Gray • University of Glasgow • pdg@dcs.gla.ac.uk

Martha Hause • m.l.hause@dsl.pipex.com

Kate Ho • University of Edinburgh • tel 0131 650 4412 • K.L.Ho@sms.ed.ac.uk

John Knight • John.Knight@intiuo.com

Rod McCall • Fraunhofer FIT • rodmc@acm.org

Tom McEwan • Napier University • tel 0131 455 2793 • fax 0131 455 2727 • t.mcewan@napier.ac.uk

Barbara McManus • University of Central Lancashire • tel 01772 893288 • fax 01772 892913
bmcmanus@uclan.ac.uk

Dianne Murray • tel 0208 943 3784 • fax 0208 943 3377 • dianne@soi.city.ac.uk

Amir M Naghsh • Sheffield Hallam University • tel 0114 225 3195 • A.Naghsh@shu.ac.uk

Dale Richards • QinetiQ Ltd, FST • tel 01252 393896 • fax 01252 392720 • drichards@qinetiq.com

Janet Read • University of Central Lancashire • 01772 893285 • jcread@uclan.ac.uk

Anxo Cejeiro Roibás • University of Brighton • tel 01273 642458 • fax 01273 642405
a.c.roibas@bton.ac.uk

Fausto J. Sainz Salces • Liverpool John Moores University • tel 0151 231 2082 • fax 0151207 4594
cmsfsain@livjm.ac.uk

Andy Smith • Thames Valley University • tel 01753 697565 • fax 01753 697750 • andy.smith@tvu.ac.uk

Colin Venters • University of Manchester • tel 0161 275 1384 • c.venters@ncess.ac.uk

Robert Ward • r.d.ward@hud.ac.uk

Peter Wild • University of Cambridge • pw308@cam.ac.uk

Adrian Williamson • Graham Technology plc • tel 0141 533 4000
Adrian.Williamson@GrahamTechnology.com

William Wong • Middlesex University • tel 0208 411 5000 • fax 0208 411 5215 • w.wong@mdx.ac.uk

KEY
Bold entries indicate members of the Chairs and Officers Group
SR: student representative

Interfaces magazine
Editor (Acting) John Knight
Content Editor John Knight
Reviews Editor Shailey Minocha
MyPhd Editor Martha Hause
Profile Editor Alan Dix
Production Editor Fiona Dix

Relevant URLs
British HCI Group: www.bcs-hci.org.uk
UsabilityNews: www.usabilitynews.com
HCI2007: www.hci2007.org

Editor Interacting with Computers
Dianne Murray

BCS Contacts
Rachel Browning, Rachel.Browning@hq.bcs.org.uk
+44(0) 1793 417416

The British Computer Society
First Floor, Block D, North Star House
North Star Avenue, Swindon, UK, SN2 1FA

Tel: +44(0) 1793 417417
Fax: +44(0) 1793 480270
Email: hci@bcs.org.uk