THE QUARTERLY MAGAZINE OF BCS INTERACTION GROUP

# interfaces

www.bcs-hci.org.uk

**89** WINTER 2011

## WHAT'S HOT IN HCI?

It's difficult to get consensus from our multidimensional discipline

**18** EVERYDAY COPING
An introduction to the neglected dimension of everydayness of technology use

**24** MY PHD
Why simple but effective interaction techniques for older adults are good for everyone

bcs The Chartered Institute for IT

**Professor Aaron Quigley** is the SICSA Chair of Human Computer Interaction in the School of Computer Science, University of St Andrews, Scotland, and director of SACHI, the St Andrews Computer Human Interaction research group. His research interests include surface and multi-display computing, human computer interaction, pervasive and ubiquitous computing and information visualisation. He has held academic and industry appointments in Australia, Japan, the USA, Germany, Ireland and the UK. He is Editor-In-Chief for *Computers*, and a member of the joint steering committee for UbiComp and Pervasive.

**Jean-Claude Golovine** is a Lecturer in Computer Science at Robert Gordon University, Aberdeen. His research interests include cognitive and performance modelling, optimising user interface designs with evolutionary computing and self organising maps.

**www.comp.rgu.ac.uk/docs/info/staff.php?name=jcg**

**Pedro Campos** is an Assistant Professor at the University of Madeira, Portugal, teaching Human–Computer Interaction and Requirements Engineering, and an Invited Researcher at the Visualization and Intelligent Multimodal Interfaces Group at INESC ID Lisbon. He acts as Scientific Director at WowSystems. Research interests include natural interaction for modeling, museums and cultural heritage and interaction design tools. He is a member of the IFIP 13.6 Working Group on Human Work Interaction Design, and Co-Editor-In-Chief of the International Journal on Agile and Extreme Software Development.

**Dr Gavin Sim** is a senior lecturer in computing at the University of Central Lancashire specialising in HCI and Multimedia. Although an active member of the ChiCi group his PhD involved the synthesis of domain specific heuristics to improve inspection based usability evaluation methods within computer assisted assessment applications. His primary research interests are in the area of HCI and Educational Technology focusing in the areas of evaluation methods in particular, fun, usability and the use of technology for assessment.

**is.gd/ajzMnh**

# CONTRIBUTORS

With thanks to:
**My PhD**: Shaun Lawson

**BCS membership**
To receive your own copy of *Interfaces*, join the BCS and gain access to BCS Interaction and four other Specialist Groups (see page 27).

PDFs of *Interfaces* issues 35–88 can be found on the Interaction website **www.bcs.org/content/conWebDoc/36812**

**About INTERFACES**
*Interfaces* welcomes submissions on any HCI-related topic, including articles, opinion pieces, book reviews and conference reports.

**Forthcoming theme**
*Interfaces* 90, Spring 2012: deadline: **07 January 2012**.

**Submission guidelines**
Articles should be MS Word or plain text. Send images as separate files: these must be high resolution digital originals suitable for commercial printing, cropped if desired but not resized, and if edited, saved as tiff or highest quality jpeg. Please supply photographers' credits as appropriate. Authors should please provide a 70-word biography and a high resolution head and shoulders original digital photo.

Photographers' credits will be printed if provided.

Send to Lynne Coventry, E lynne.coventry@northumbria.ac.uk, T 0191 243 7772
PaCT Lab, Northumberland Building, University of Northumbria,
Newcastle upon Tyne, NE1 8ST

*Interfaces* is published quarterly by BCS Interaction (a Specialist Group of the BCS) and is available in print and as download.  *Interfaces* is produced on a not-for-profit basis by volunteers for the good of the international HCI community. *Interfaces* editorial policy is focused on promoting HCI and its community in all facets, representing its diversity and exemplifying its professional values by promoting knowledge, understanding and awareness to the benefit of all and harm to none. Editorial decisions are based on promoting these core values with the Editor being accountable to BCS Interaction Specialist Group and BCS for the content of the magazine. As such the Editor has the right to refuse publication with recourse to BCS Interaction Specialist Group and BCS in cases of arbitration. The views and opinions expressed in *Interfaces* are strictly those of the relevant authors attributed to articles and do not necessarily represent those of BCS Interaction Specialist Group, BCS or any associated organisation. *Interfaces* does not accept responsibility for the views expressed by contributors and unless explicitly stated (where authors are publishing at the behest of an organisation or group), authors are acting in a personal capacity and expressing personal opinions that may or may not represent the views and opinions of any organisation, employer, person or group attributable to them.

This issue of *Interfaces* intended to explore what is currently 'hot' in HCI. However, this proved a difficult question.

Many factors contribute to our group's inability to respond. As the CHI review process goes into rebuttal phase and I reflect on the HCI conference reviews it is clear that our community cannot reach consensus on what is good in HCI, let alone what is 'hot'. Too often the same paper is rated as reject, borderline and accept – within the same review process. We cannot reach agreement about paper quality – debates can be rude and aggressive – reviews are based more on personal opinions than objective criteria.

These papers reflect the state of the art of HCI research – so would there be consensus on the quality and direction of HCI research? Is the problem purely one of the diverse, interdisciplinary nature of our domain? Individual pieces of research might be strong in one discipline and weak in another? It's time for each discipline to be more explicit and consistent in its evaluation criteria, or is there something more subtle going on? Maybe it's time for us all to reflect on our behaviours and motivations as reviewers.

Lynne Coventry

# CONTENTS


04 VIEWS FROM THE CHAIR
Aaron Quigley and Janet Read

06 ANDY SMITH: A TRIBUTE
Jose Abdelnour-Nocera, Ken Eason, Zhengjie Liu, Tim French, Cecilia Oyugi, Elisa del Galdo, Sunila Modi, Kerstin Roese and Liam Bannon

10 SIMULATING INTERACTIONS
Jean-Claude Golovine, Patrik O'Brian Holt and John McCall

12 CROSSING THE BRIDGE
Pedro Campos

15 ISPR 2011
Phil Turner and Susan Turner

16 EVALUATING HEURISTICS
Gavin Sim

18 EVERYDAY COPING WITH DIGITAL TECHNOLOGY
Phil Turner

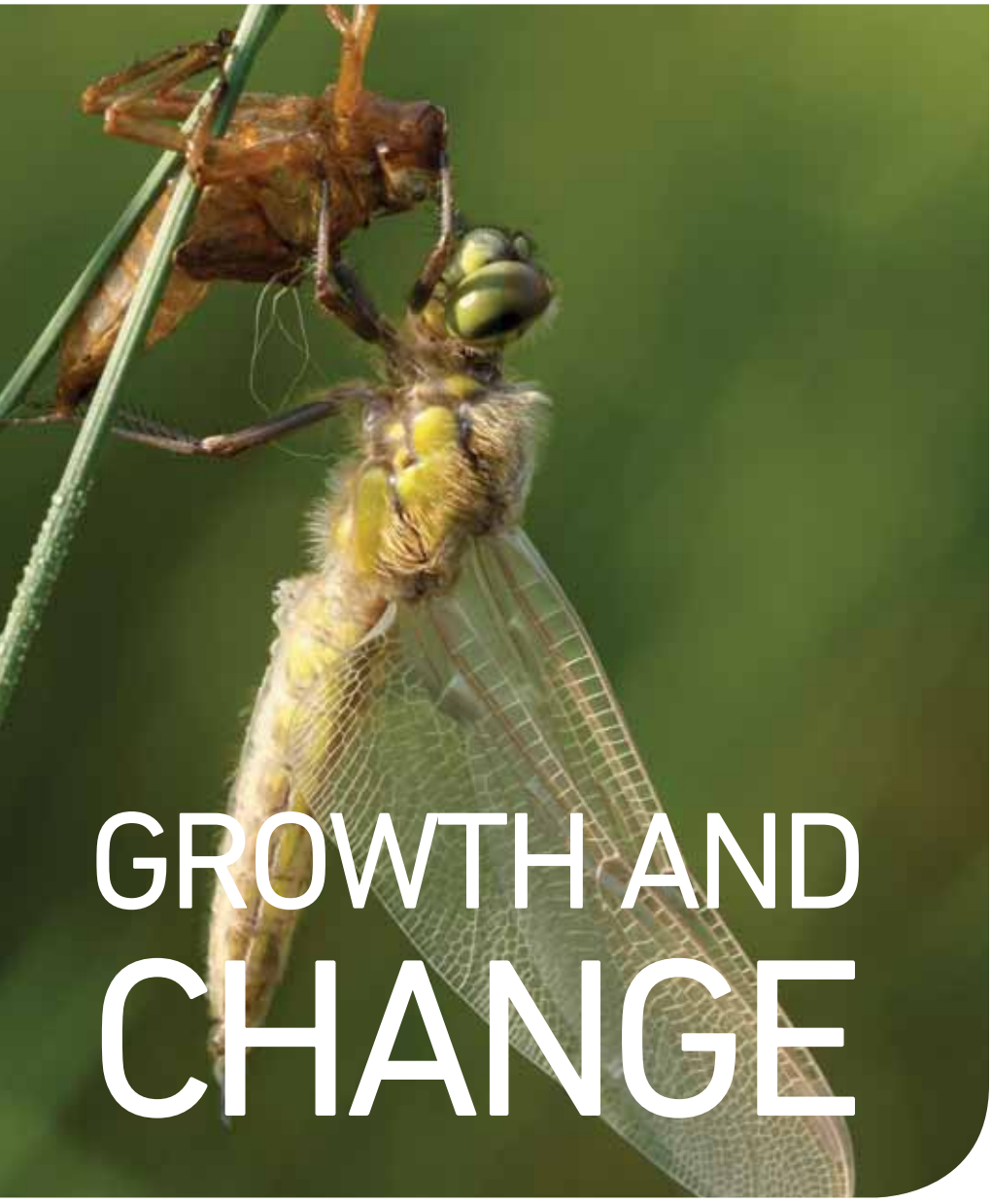
22 CALL FOR PARTICIPATION IN HCI 2012
Chris Bowers, Benjamin R. Cowan, Russell Beale and Chris Baber

24 MY PHD
Nic Hollinworth

26 INTERACTING WITH COMPUTERS
Dianne Murray

27 CALLS AND COMMUNICATIONS

28 INTERACTION COMMITTEE MEMBERS



# GROWTH AND CHANGE

**Aaron Quigley** of St Andrews University argues that as HCI moves from the GUI to ubiquitous computing, we need ambitious research to make a real impact in the future.

For the past seven decades, computers have radically changed the world we live in, as have our interactions with them. Today, people require more sophisticated interfaces as computers are platforms supporting the entire spectrum of human activity. There is not an area of human society that has not been affected by computers and the power they afford us. Computing and hence human computer interaction touches on every facet of science, art, engineering and the economy as a whole. Desktop and mobile computing have evolved as advanced interactive technologies change our view of applications, services, gaming and computing. Today we have many researchers in HCI looking at gestures, haptics, large surface interaction, touch and sensing beyond the classical desktop system.

**Increasingly interdisciplinary**

Looking to the future there are three essential issues to consider. Firstly, the future for human–computer interaction research is, by its very nature, an increasingly interdisciplinary activity. Second, we need sustained investment in human–computer interaction research at every level to ensure we unlock the potential of ever more powerful, embedded and interconnected computation. And finally, we require larger programmes of research, with more ambitious goals with national and international teams. In Scotland we now have the Scottish Informatics and Computer Science Alliance (SICSA) which is a collaboration of Scottish Universities whose goal is to develop and extend Scotland's position as a world leader in Informatics and Computer Science research. The majority of HCI research resides within the Multimodal Interaction theme which myself and Professor Stephen Brewster from the University of Glasgow, a world leader in this field, lead.

We aim to extend our collective reach by working cooperatively rather than competitively. We do this by providing mutual support, sharing facilities and by working closely with industry and government. We are also appointing and retaining world-class staff and research students in Scottish Universities. To date SICSA has appointed 30 staff and has offered more than 70 prize studentships to PhD students from around the world.

**Increasingly diverse**

Different views of computing may drive each of us in our HCI research. For some, the computer is a building block of science or the 'new microscope' enabling new forms of scientific discovery. If this is your view, then a closer examination of the work practice, information flow and points for interaction are essential. Systems and interfaces which are interwoven with user tasks rather than multi-purpose devices are the key here.

For others, the computer is simply an essential means to organise and process large amounts of information quickly. If this is also your view then new forms of interaction space are needed. And finally, for many, Ubiquitous Computing, with computation 'woven itself into the fabric of our lives, until it is indistinguishable from it', is the future. This is where I see the greatest challenges for HCI: moving from the GUI to the Ubiquitous User Interface (UUI).

With ubiquitous computational power we need ubiquitous user interfaces, to extend and enhance all human capabilities. To reach this future we need to make larger and more ambitious leaps beyond what the current market place is willing to support. The UUI will not be realised by cobbling together off-the-shelf systems sufficient for results for just the next conference paper. Without more ambitious research we are bound to a future of small incremental changes without real impact in our world.

# AND THE **EDUCATION** CHAIR


**Janet Read**, University of Central Lancashire, challenges us to give students experiences with real HCI that are both relevant and unforgettable.

*"It's getting hot in here, so take off all your clothes"*

Recently my teenage son had a birthday party. Nothing strange about that except that we left him with the house almost to himself (one of his older sisters was in residence with her boyfriend in case of emergencies), and his 40 or 50 party goers. There was a consumption of alcohol and some hairy moments which included broken hearts, a visit by the community policing function and some incidents around the ceramic hobbed range cooker.

This cooker has knobs on the front that are turned to heat the rings; and, for reasons unbeknown to my son, and to his sister, some party goers felt the need to (a) turn the knobs and (b) place their hands on the then hot surface, which resulted, not surprisingly, in burned hands. This was a repeated behaviour and my daughter had to repeatedly deal with the fallout by cooling the injured extremities – luckily the fridge had an ice maker.

**The morning after**

The day after the party, when the revellers had gone home and the house was returned to a semblance of normality, my son and daughter both realised that, had they but noticed the night before, there was a switch on the wall that would have turned the cooker off... In fact they both knew this switch was there but had forgotten about it in the heat of the activity. Luckily, they hadn't forgotten how to deal with the burns!

So what on earth has this got to do with HCI, and what might it have to do with HCI education? It tells us something about what we should tell our students and what we should worry about them learning. HCI is all about making things better, about avoiding users getting 'burned', about keeping users safe, and about making interfaces easy to use. In this space, HCI education has traditionally focused on delivering a wide range of information to undergraduates in a 'one size fits all' course.

In that model we have tended to be concerned with giving our students, in a telling sense, a scattering of knowledge in the hope that some is remembered. That scattered knowledge is a little like the wall switch for the cooker – it sits in the peripheries of our minds and, when the going gets exciting, or the heat rises, it is forgotten. It goes without saying that what we tell our students is much less likely to be remembered than what they have experienced and learned.

**We have all been burned**

So, this brings us to the cold water treatment of the burned hand. There can hardly be a human in the country who would not instinctively reach for cold water at the sign of a burn. There is no need to remember this, it is known, and it is known because everyone has experienced it – we have all been burned. In HCI, then, what would our burned hand experience be that we would give our students, so that forever more, no matter how confusing the environment was, no matter how much confusion there was, no matter to what extent the memory was impaired, they would remember what to do and would do the right thing.

If we wanted them to learn just one HCI gem, what would it be and in what context would we present it? It is perhaps time for us to think about making the HCI we teach our students so hot and so relevant that what they see and what they experience endures forever.

**Taking on the challenge**

So – what is the worst that could happen? How about we went to the cash machine and when we pressed the wrong button we lost all our money? What about if we had the wrong interface on a life support machine? How about if we saved a file in the wrong format and we lost our job?

Making HCI real requires us to understand the consequences of bad HCI and getting these consequences to our students, and being able to almost re-run the consequence with the addition of an intervention, or fix the consequence with the application of a repair job, which could be very beneficial to students.

So... the challenge is out there to all the readers of this column; and it is a challenge we will pose at HCI2012 in Birmingham – what is the hot stove of HCI, what is the wall switch, and what is the cold water?


# ANDY SMITH: A TRIBUTE

Colleagues and friends remember **Professor Andy Smith**, founder of the Centre for Internationalisation and Usability at The University of West London, who led a team of researchers working in Europe, Africa and Asia until his death in June 2011.

**Pioneering cross-cultural usability**

Andy Smith was a pioneer in cultural usability research. Cross-cultural usability is about making global products useful and usable to local users. For instance understanding how global websites should be designed to be an effective means of communication between a global website owner and a local user [1]. His more recent work also focused on cultural aspects of software engineering in contexts such as off shoring in India [2]. He founded the Centre for Internationalisation and Usability at The University of West London, which currently holds a team of researchers working in this field with partners in Europe, Africa, Latin-America and Asia.

As the influence of web based communications expanded, people realised that they needed to understand, and address the needs of a culturally diverse user base. When communicating to and with people across regional, linguistic and country boundaries, the user requirements are strongly influenced by their local cultural perspective. This has also had a direct effect on increased cultural differences in design and development teams, which Andy said also had to be addressed to improve quality of the product and user experience.

Cross-cultural usability is also about understanding the issues and problems arising when carrying out usability evaluations within culturally diverse populations. Usability evaluation techniques have traditionally been developed within Western cultures, and make assumptions about willingness of people to take part and express critical views about a prototype. However, studies which Andy was involved with showed that these established Western methods are less effective with users from other cultures [3]. The work of Andy and his colleagues suggested that the reasons for this ineffectiveness are the consequences of deep-rooted differences in personal interactions in different cultures. His research provided evidence from countries including China, India and Africa.

Personally, I worked with Andy in different projects and modes over the last ten years, commercially and academically, even before we joined University of West London. He was not only a mentor and colleague, but also a very good friend. As you will notice from the lines below, Andy is described as a bright and organised academic, but the most important reason for which he will be remembered is that he was very good at bringing people together. He leaves behind a network of friendships passionate about a common research goal, which, no doubt, will keep being developed. That is his main legacy.

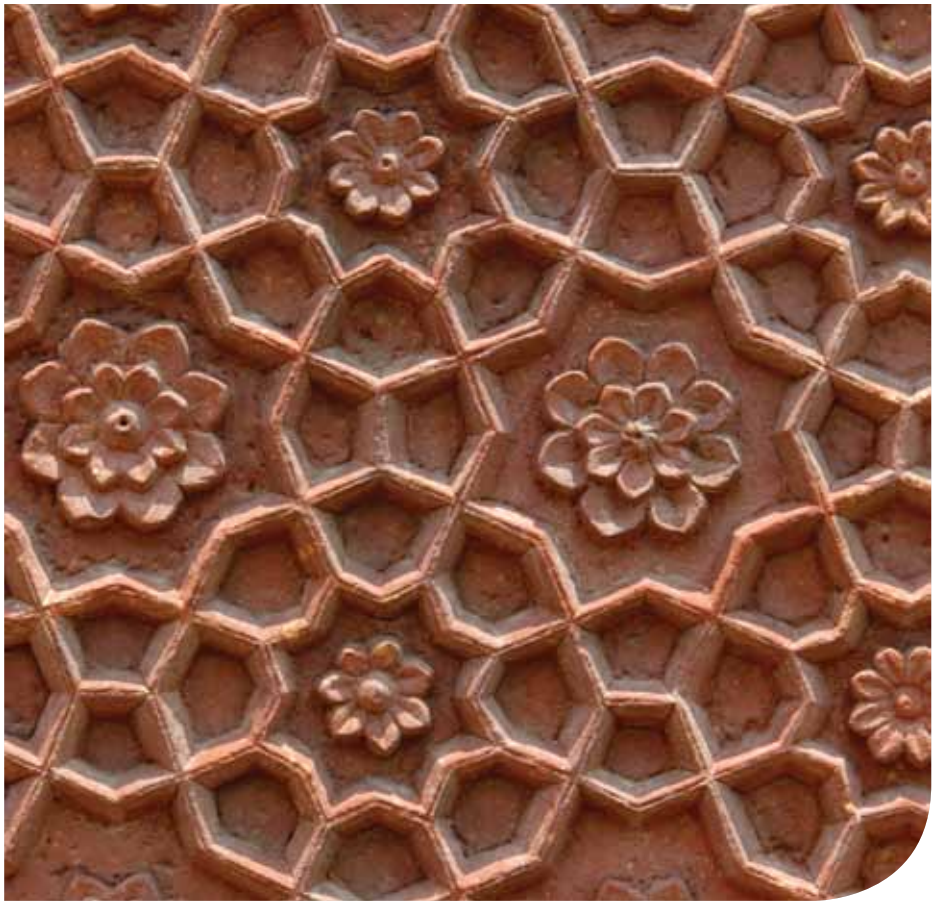
***Jose Abdelnour-Nocera**, Centre for Internationalisation and Usability, University of West London.*

**Enthusiasm for HCI**

When he undertook the MSc in Interactive Computing Systems Design at Loughborough in 1992, Andy was already an experienced computing professional but the course really fired his enthusiasm for HCI. I had the pleasure of supervising his project (for which he gained a distinction). It was a survey of user-centred design

which convinced him that usability was not being addressed systematically in the ordinary practice of systems design. What impressed me was his recognition that, to be usable, a system needed to map onto the rich user and task context of its application. In 1997 he published his book 'Human Computer Factors' for which he and I developed the Plumbest plc case study as a running theme to show how every stage of design had to relate to the organisational context of the users. Subsequently, exploring the context of HCI took Andy into the realms of cultural and international determinants of usability. Andy had the courage to accept the confusion and variability of the many different worlds of users and the ability to find practical ways of dealing with the issues this raises for the design of usable systems. It was a privilege to know him and he will be sorely missed.

***Ken Eason**, Emeritus Professor at Loughborough University. Andy's former HCI mentor.*



**Promoting collaboration**

I felt deeply saddened and sorry when learning that Andy Smith passed away in June this year. He made a great contribution to international HCI by promoting collaboration between European and Asian researchers. He helped HCI to develop in China by exploring the impact of culture on both design and evaluation, recognising both the similarities and the differences between people around the globe. HCI colleagues in China lost a respected friend.

Andy and I met for the first time in January 2003, when he visited the Sino-European Usability Center. We discussed and agreed a joint proposal to the EU for the Sino-European System Usability Networking (SESUN) initiative, which was finally approved in 2004. This undoubtedly gave us great encouragement when we were experiencing various resistances in promoting usability in China.

In the ensuing years, 2005–2007, under Andy's leadership, seven institutions from the EU and China worked together on the SESUN project. We organised five seminar tours all around China that attracted thousands of attendees from industry and academia, and conducted research on culture factors and the UCD process. All of these have made outstanding contributions. In the years when usability as a field had just started in China, many people from industry and academia actually began to know about this concept through our work and started their career in usability and HCI.

In the years working with Andy, my impression is that he was amiable, kind-hearted, lenient and considerate for others. Perhaps it is because of these qualities that he could gather and work well with so many partners in making such a big contribution to HCI's growing up in Asia. Being a veteran of HCI in China and the adjunct chair for developing worlds at ACM SIGCHI, I shall take Andy as a model in pursuing the business he had not finished.

***Zhengjie Liu**, Director Sino-European Usability Center, Dalian Maritime University, China. Research Partner.*

**Down-to-earth style**

Andy and I first met in the early 1990s and we later worked closely together at Luton College of HE (which later became Luton University), now Bedfordshire University. We then closely collaborated (he as co-founder, myself as humble Usability Consultant!) on several 'real-world' projects for 'blue-chip' clients of Optimum Web Ltd. It was Andy who first inspired both myself and our MSc students to relate theory to practice in usability engineering. That is, to engage on the application and commercial value side of things, not just look through an academic lens. Thus, commercial 'jobs' for Optimum Web Ltd led to many academic papers on cross-cultural design, whilst a small pilot study for a major UK Building Society web site for Optimum Web led me eventually to complete my own PhD in E-Trust at Reading University. Similarly, joint supervision of a PhD student on E-culture led to commercially applicable projects with clients.

Andy could be quite a demanding person to work with (he didn't suffer fools gladly!) but was above all a really warm human being who thrived on challenge and who always engaged others in a direct manner. I shall miss his humour, his down-to-earth style and above all his passion for all things 'HCI'. He made HCI @ Luton and @ Optimum Web 'real', cutting edge and a nice little 'earner'. I wish we could all tick those same boxes eh?

***Tim French**, Senior Lecturer, University of Bedfordshire. Colleague at University of Luton.*

**Dedicated support**

Professor Andy Smith was the ideal teacher any student would have dreamt of. His timely help and dedicated support while I carried out my PhD research and wrote up my thesis was second to none! He made my PhD journey so much easier as I could talk to him anytime especially when I had those nagging questions at the back of mind. He made me write journal papers even when I did not want to do so (in hindsight, I am so glad he made me do so)!

He took the risk and trusted me enough by giving me extra responsibilities within the department like teaching HCI which overall made me more alert and organised. Specifically, he supported me while I was in the field collecting data, when analysing that data and when finally putting it all together. Although it looked such a daunting task – without Andy's help I'm not sure I would have seen the end of my PhD research. Despite this account being a very personal experience with Andy, I'm sure I speak for many students whom he supervised.

***Cecilia Oyugi**, University of West London. Andy's PhD student.*

**Fuelling creativity**

I met Andy while working as a consultant for Optimum Web in London. When we met, we had very different approaches to consultancy, me being more industry focused and Andy more academic. As we worked together and I had an opportunity to get to know Andy better, my appreciation and respect for him and his work grew greatly. He re-opened my eyes to the importance of academic work to practitioners and how it can fuel the creativity in which we apply user experience methods in industry. Andy was a master at this.

We shared an interest in cultural design and Andy provided me with the opportunity to travel to India on the IESUP Programme. I also had the opportunity to work with Andy on IWIPS over the years, most recently when TVU hosted the workshop in London in 2010.

Andy's contribution to HCI is immense; he was active internationally and brought the discipline to many countries. He provided guidance, support and friendship to many people, and fostered the development of the HCI discipline across the world. It was a privilege to have had the opportunity to work with Andy and to be able to call him a colleague and most of all a friend. He will be missed by many.

***Elisa del Galdo**, Director, del Galdo Consulting, UK. Colleague.*

**Quality of warmth**

I felt deeply shocked and saddened when I learned about Andy Smith's sudden death in June this year. We first met in the early 1990s at Luton University (now called Bedfordshire University). We taught a module together called Information Systems and Users. The experience with teaching with Andy was wonderful as he was so passionate about usability and I felt I learnt so much from him. This module led him to write his book on Human Factors.

Andy was a very kind-hearted understanding person; he loved undertaking and pursuing research in usability. He had a brilliant quality of warmth, friendliness and he always tried to integrate people. Recently, Andy gave me inspiration to do my PhD on a part-time basis; I will always be grateful to him for that. Many colleagues and friends will miss him greatly.

***Sunila Modi**, Senior Lecturer, University of Westminster. Colleague.*

**Special humour**

Honestly, I was shocked to hear that Andy Smith had passed away. The HCI

community lost a great international networker. Professor Andy Smith was at all times a quiet but fundamental father figure for my work. I met him several time in different projects. One of the nice experiences was as external examiner for one of his PhD students at the University of Luton. Andy was soooo nervous, much more than the candidate. But if you knew Andy: the exam was well prepared and the candidate had also learned very well.

My memories are of his personal engagement to support the junior scientists and his individual relationships with each of them, but with the typical British distance. Andy was an excellent project manager and made things possible, things you could never believe before. He enabled us to think about HCI as a global challenge. Andy, I will miss your special humour after a hard working day.

***Kerstin Roese**, TU Kaiserslautern and Siemens AG, Germany. Research Partner.*

**Generous spirit**

I had the pleasure of working with Andy on both the EU–Asia IESUP (Indo-European Systems Usability Partnership) and SESUN (Sino-European Systems Usability Network) proposals and subsequent projects. Andy was a superb project coordinator, well organised yet easygoing, and our adventures on the two projects, as we toured India and China giving talks and meeting faculty, students, government and business people, over several years, were fascinating and instructive.

I particularly remember some of the delightful experiences we had on our travels, many shared with Jan Gulliksen, from Uppsala University in Sweden. Andy was a generous spirit who made everyone he came in contact with feel at ease. He cared deeply about making a worthwhile contribution to the development of HCI in these countries, yet he was also sensitive to how local needs and concerns needed to be incorporated into our approaches.

We had occasional academic differences on how to approach the topic of 'cultural' usability, yet this never got in the way of our friendship. I am deeply saddened at his premature and sudden passing, but I am buoyed by my remembrance of some of the very happy moments we shared, as we travelled across India and China. It was a privilege to have been there together, just as it was a privilege to have become, not just a colleague, but, over time, his friend.

***Liam Bannon**, Adjunct Professor, University of Limerick, Ireland; Hon. Professor of HCI, Aarhus University, Denmark; Visiting Professor, University College, Cork, Ireland. Research Partner.*


## REFERENCES


1 Smith, A., Dunckley, L., French, T., Minocha, S., & Chang, Y. (2004). A process model for developing usable cross-cultural websites. *Interacting with Computers*, **16**(1), 63–91.

2 Lee, D., Smith, A., and Mortimer, M. (2011). Cultural differences affecting quality and productivity in Western/Asian offshore software development. *Proceedings of India HCI 2011*. Bangalore April 2011.

3 Smith A. (2011). Issues in adapting evaluation methods for global usability, in I. Douglas and Z Liu, (Eds.), *Global Usability*, Human–Computer Interaction Series, Springer, ISBN: 978-0-85729-303.

4 Smith, A. (1997). *Human-Computer Factors: A Study of Users and Information Systems.* McGraw-Hill.

# SIMULATING INTERACTIONS

**Jean-Claude Golovine**, **Patrik O'Brian Holt** and **John McCall**, of the IDEAS Research Institute at Robert Gordon University, Aberdeen, discuss a research project on optimising user interface design with Cognitive Architectures and Genetic Algorithms.

Cognitive Architectures such as ACT-R (Adaptive Control of Thought – Rational) are valuable computational platforms for research involving modelling and predictive evaluation. While user simulation may not be able to replace the use of human users, there seems little doubt that such approaches can make contributions in areas that involve discrete, well-defined tasks, e.g. key strokes or control tasks (ROVs).

**Cognitive and performance modelling**

The Cognitive Engineering Research Group at Robert Gordon University in Aberdeen uses ACT-R as the basis for a number of research projects involving both cognitive and performance modelling. One project has posed the question of whether it might be possible to apply ACT-R and related technology to automatically optimise the layout of user interfaces. Here, optimisation refers to achieving the shortest reaction times (latencies) and fewest errors for a given task domain.

**TOISE**

This research has developed a variant of ACT-R called TOISE (**T**oolkit for **O**ptimisation of **I**nterface **S**ystems through


***Figure 1*** *Bell's Standard Keypad*

**E**volution). The architecture uses ACT-R functionality as its core but a Genetic Algorithm (GA) function has been added. The potential novelty of this combination is that the GA uses ACT-R as a human simulator whilst the GA replaces an expensive and incremental human-driven design approach with a relatively rapid and inexpensive meta-heuristic search of a much wider design space.

### Human factors

An example of TOISE can be shown through some relatively simple initial experiments conducted to test the system. In the 1960s Bell Telephones conducted detailed human factors experiments to determine the best layout for push button telephones in terms of speed of dial and errors. An example of the Bell layout is shown in figure 1.

Aspects of the research carried out by Bell were replicated using TOISE in two stages. In the first stage human users typed 10 local phone numbers and their interactions were recorded using a software recorder shown in figure 2.

The second stage involved importing the recordings into the GA module for layout optimisation. See figure 3.

The results show that TOISE was able to reproduce the Bell keypad layout but then went further to fit the solution to the specific telephone numbers used in the experiment.

### Conclusion

The main conclusion is that the TOISE system demonstrates that it is possible to automatically optimise user interface layouts that produce 'best' performances in terms of speed and errors. These findings apply to user interfaces that can be described as involving well-structured discrete tasks but it remains to be seen whether this approach can be applied to more general interfaces. This research is currently being carried out.

Preliminary results from TOISE have been published:

Golovine, J-C., McCall, J., and O'Brian Holt, P. (2010). Evolving Interface Designs to Minimize User Task Times as Simulated in a Cognitive Architecture. *WCCI 2010 IEEE World Congress on Computational Intelligence.* July 18–23 2010, CCIB, Barcelona, Spain.

Source for the original BELL study:

Deininger, R., (1960). Human Factors Engineering Studies of the Design and Use of the Pushbutton Telephone Sets, *Technical Journal*, **Volume 4**, Number 4, July 1960.

The TOISE system demonstrates that it is possible to automatically optimise user interface layouts that produce 'best' performances in terms of speed and errors.

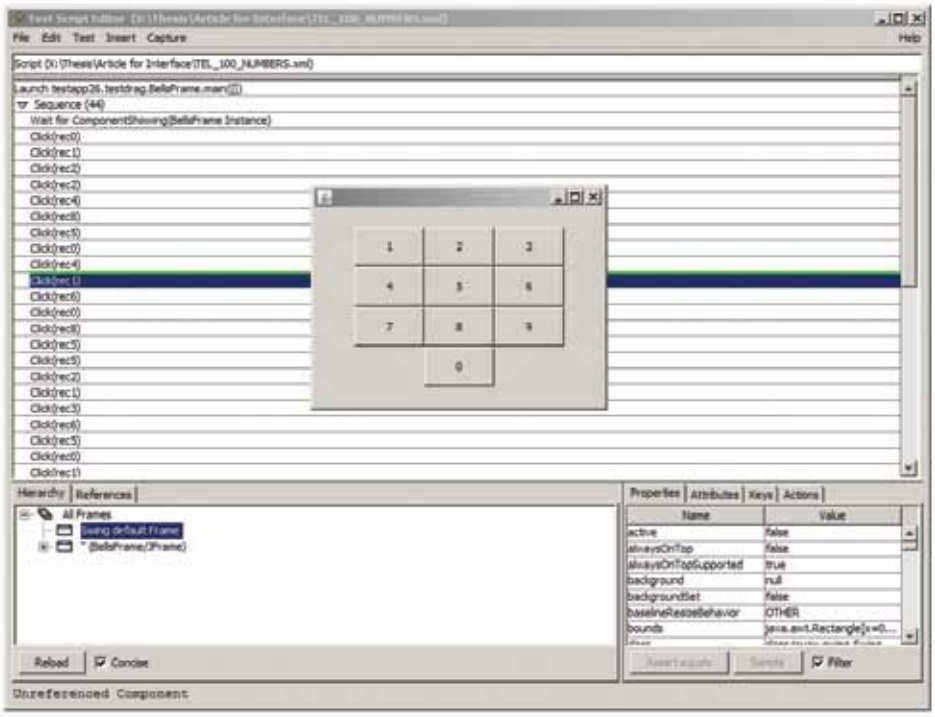


***Figure 2*** *Human interaction recorder*

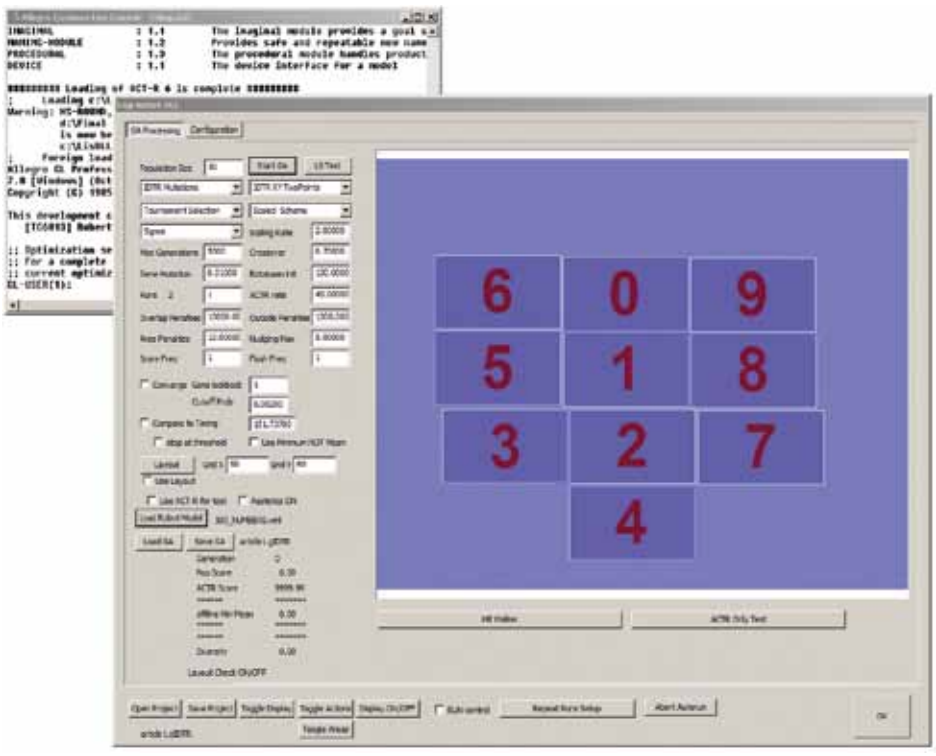
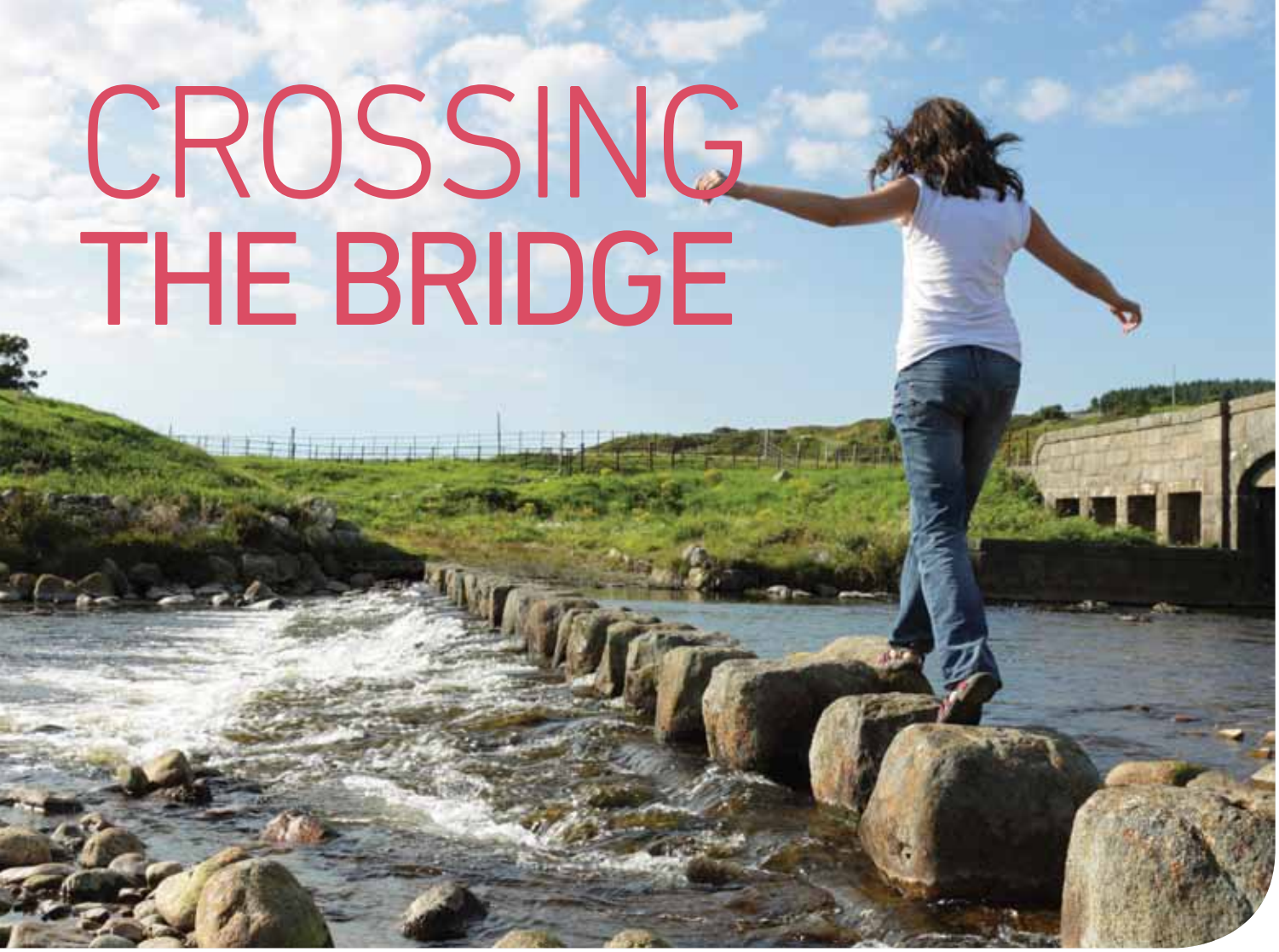


***Figure 3*** *Evo-Cognitive solution*

# CROSSING THE BRIDGE



**Pedro Campos**, University of Madeira, argues that most approaches to bridging HCI research and practice are not succeeding, and offers some effective guidelines to help interaction designers cross the divide.

While I write these lines, my two-year-old daughter is completely immersed in her multi-touch iPad, proudly and easily skipping through less interesting content and occasionally challenging herself by popping up a couple of word puzzle apps. She learned to scroll and navigate through hundreds of videos and baby-learning apps well before she could even pronounce a word. Right now, she is delighted watching digital content about her two most intriguing *creatures*: cats and babies.

By simply watching this scenario – now so familiar to me – I cannot help but reflect upon the vast amount of research that I have read, in my own profession as an HCI professor and researcher. Especially the publications related to multi-touch interactive surfaces. From that reflection, one pattern quickly emerges: HCI research related to multi-touch has been completely focused on large-scale displays – forty-inch and larger. It is difficult not to think about the irony of the situation: hundreds of HCI researchers spread throughout the world, writing sophisticated papers, ranging from multi-user multi-touch approaches for ultra-high-resolution collaborative workspaces to distinguishing multiple smart-phone interactions on multi-touch walls using tilt correlations. They seem to have overlooked the possibility of a relatively small multi-touch device, such as the iPad, being able to revolutionise the way people interact with digital media.

This simple observation perfectly illustrates the widely touted *HCI research–industry gap*, possibly proving that the research-oriented reasoning doesn't apply in the industrial environment. And since HCI is a 'real world'-oriented research field, this could be equivalent to having Newton's laws not working in industrial settings.

## Crossing the research–practice divide

Before plunging into detail, let me first define what I mean by the research–practice divide. On one hand, applied research is concerned with the practical application of science. On the other hand, practitioners who are interested in exploiting research results have their mind set towards bringing innovative ideas to market. It has been argued that the identification of breakthrough ideas at the very forefront of the innovation process is a key factor in the creation of substantial innovation [1]. However, the managerial process of breakthrough innovations, as well as their inhibitive factors, remains far from being understood [1].

Although there are many approaches to crossing this divide, ranging from scientific papers studying the problem up to funding programmes promoting a higher interplay between industry and academia, the fact is that most approaches are not succeeding. Don Norman recently advocated for the creation of a discipline called translational development [2], capable of translating between 'the abstractions of research and the practicalities of practice'.

## Learning from our mistakes

Quite often we are faced with success stories, both in the industrial world of corporate press releases and the academic world of 'publish-or-perish' policies, in the form of journal papers that analyse and describe experiments with a strong focus on the successful results. However, in a recent interview published in *Wired* magazine, Fred Brooks stated:

> You can learn more from failure than success. In failure you're forced to find out what part did not work. But in success you can believe everything you did was great, when in fact some parts may not have worked at all.

Certainly, both academics and practitioners have their success and failure stories (hopefully more of the former).

While in the past I have analysed and described some case studies with a focus on the most successful ones [3], it now becomes more useful to reflect upon failures, following along the lines mentioned by Fred Brooks. Through my own experience, studying failures seems to effectively lead to a better policy, thus increasing success rates in the long run. This idea is widely touted, but rarely followed. Therefore, based on industrial experience from over fifty different interactive installations projects, during the last three years, coupled with academic experiences from several large applied R&D projects, I will set out to analyse and share some of the issues and risks faced by interaction design practitioners working in interactive installations.

**Handling people's expectations**

We live in a society full of expectations, and I have recently argued that today's expectations are higher than ever. This leads to increased pressure on interaction designers, since their work is more focused at the frontier between humans and machines. And, as we all know, high expectations means a high risk for the project team.

In an applied HCI research project, my team designed and installed an interactive mirror for a shoe shop. The client's expectations included: The shoe shoppers would step inside an RFID-tagged shoe and watch themselves inserted into a real time virtual scenery related to the type of shoe they were trying on. Our design had the following characteristics: As a shopper walks around the experimenting floor, the shoe's RFID tag is read by the reader, then the model's attributes are fetched from the product database, sent to the multimedia server which displays two synchronised scenarios: one for two top-down projections and one for the front, 'mirror-like' view.

The 'mirror-like' front view displays the shopper in real time and places her on virtual scenery by using a motion detection and silhouette extraction algorithm. This algorithm adapts to the different lighting conditions at the shop – usually brighter during the day and darker at dusk and night. The top-down projections are views of the streets or sidewalks that are typical of the city the virtual scenery replicates. For instance, a shopper tried on a shoe model that had a design inspired by modern life in Tokyo. Therefore, our interactive mirror displayed scenery based around Tokyo's neon signs and bright buildings. Simultaneously, the floor projections displayed a Tokyo sidewalk with Japanese signs and warnings, as well as other visual elements, and interactivity was added by displaying neon lights over the floor according to the shopper's position.

At final installation, the solution didn't fulfill the client's expectations. Post-project analysis suggested that one of the reasons why this happened was simply because their expectations were too high. Fortunately, the the shoe shoppers liked the installation and their expression of satisfaction helped defend the project's solutions.

I have been lucky enough to work around several practitioners' issues and risky situations in this field, and my team has been working towards compiling sets of guidelines based on both successful and not so successful projects. Based on this experience, we crafted a set of guidelines to help interaction designers survive and do well when expectations are increasingly getting higher.

> They seem to have overlooked the possibility of a relatively small multi-touch device, such as the iPad, being able to revolutionise the way people interact with digital media.

- **Make the vision stand out**
  This guideline is based on the story of the bricklayers who were asked what they were doing. The first one said he was laying bricks. The second said he was building a wall. And the third said he was building a cathedral. To remind practitioners that they are 'building a cathedral' it is a good idea

to hang exhibition posters that feature interactive installations, photos of the visitors, and, for instance, give away free tickets, whenever applicable, so that engineers and designers can experience the installations the exact same way clients and users do. For instance, in the most recent installation (the shoe store we described before), we asked the team to take their wives and girlfriends to the interactive shoe store and gave away a free voucher as well as free entrance to the store's pre-opening party.

- **Make the interaction model easy to grasp**
  One of the most interesting conclusions drawn from post-project analysis is the importance of the interaction model and how it is learned and reapplied. If there is too much innovation put on a given interactive product, then that product could be difficult to learn at first. There is, naturally, a dichotomy between the usability and innovation of any given interactive product. However, if the team is explicitly focused on making the interaction model easy to grasp, this dichotomy will not become too harmful for the product's usability. Our shoe store example is paradigmatic: users control the digital contents in the interactive mirror by simply putting shoes on and walking around the store.
- **Support collaborative activities as feedback mechanisms**
  Another issue that drives the development team is the observation of the visitors' and users' behaviours, particularly finding out how collaborative activities can be supported as feedback mechanisms to enhance engagement and learning motivation. As an example, in game-driven installations social interaction reaches much higher levels than in other installations. That collaboration clearly enhances the level of users' engagement. At the same time, we believe that the social interaction was increased by that same engagement, working as a feedback mechanism, feeding the interaction and also being fed by it, reaching levels of focus that can support the formation of new conceptual models, thus enacting a reflective learning.
- **Know the customer from the client**
  Interactive installations are meant to be fun, enriching and enticing to everyday customers. A successful installation will attract more customers and more business, therefore making your client happy. The focus should be on your client's customers and not on your clients. A good defence mechanism to support design decisions is to convincingly and accurately document the customers' satisfaction and deliver that documentation to your client with a partnership attitude. Collecting evidence such as happy customers' photos, videos of people interacting with the installations, even surveys or informal interviews, can be useful to convince your client, especially if cross-checked with sales or other business figures. In other words, *Please your client's clients*.
- **Carefully manage client expectations**
  One way to achieve this is to present the client with realistic architectural designs of how the interactive installation will look at the end of the project. If we provide the client with a visual scale and 3D layout, the idea can be conveyed to in a way that all stakeholders can get a feel of how the physical space will be used for the installations, just like in architectural programs. In the absence of tools, mockups or 3D preview videos of the installations should be shown to the client, taking great care to check if expectations are well understood.

In the fast evolving world of interactive technologies, it is as difficult to find silver bullets as it has been since the inception of computers many years ago. Indeed, excellent design, more than process, is the work of excellent designers. Thus to promote good design it becomes paramount to encourage younger generations of students to 'reach for the stars' in everything they design or develop, hiring the best and rewarding them well, to compete globally in the digital media and interactive landscapes.

## REFERENCES


1 He, X., Probert, D.R., and Phaal, R. (2008). Funnel or tunnel? A tough journey for breakthrough innovations In: *4th IEEE International Conference on Management of Innovation & Technology (ICMIT08)*, 21–24 September 2008.

2 Norman, D. (2011). The Research–Practice Gap. *ACM Interactions* (to appear).

3 Campos, P. (2009). Sparking Innovation at Interactive Digital Media Companies. In *Proceedings of the 2009 Conference on Designing Pleasurable Products and Interfaces, DPPI'09*.

# ISPR 2011

**Phil Turner** and **Susan Turner** report on the 13th Annual International Society for Presence Research conference, hosted by Edinburgh Napier University, 26–28 October 2011.

Delegates to the ISPR 2011 conference were drawn from Australia, USA, Singapore, Sweden, Poland, Belgium, Germany and a couple from the UK.

**Trajectories**

The conference was opened with a keynote address from Steve Benford (University of Nottingham). Steve gave a lively and very well-received talk which linked his work on trajectories with presence. Steve brought a fresh relevance from his work to many of the delegates who diligently began to include the concept into their own presentations.

Our second keynote presentation was given by Giuseppe Riva (Milan University) who argued for a new account of presence based on intuition (intuitive thinking) and motor behaviour. This account was a well reasoned synthesis of psychological and neurological evidence with the writings of a Nobel Laureate.

**Interaction and debate**

Turning now to the papers themselves: the focus of the reported research has changed quite dramatically in the 10 years (or so) of the conference series. Studies of telepresence *per se* were conspicuously absent, being replaced with reports of applied presence, social presence, presence and psychology, presence and measurement and presence theory. It may be fair to observe that this may have been the widest scope of any presence conference ever – the absence of telepresence not withstanding. Perhaps consistent with this, the conference was typified by an unusual level of interaction and debate.

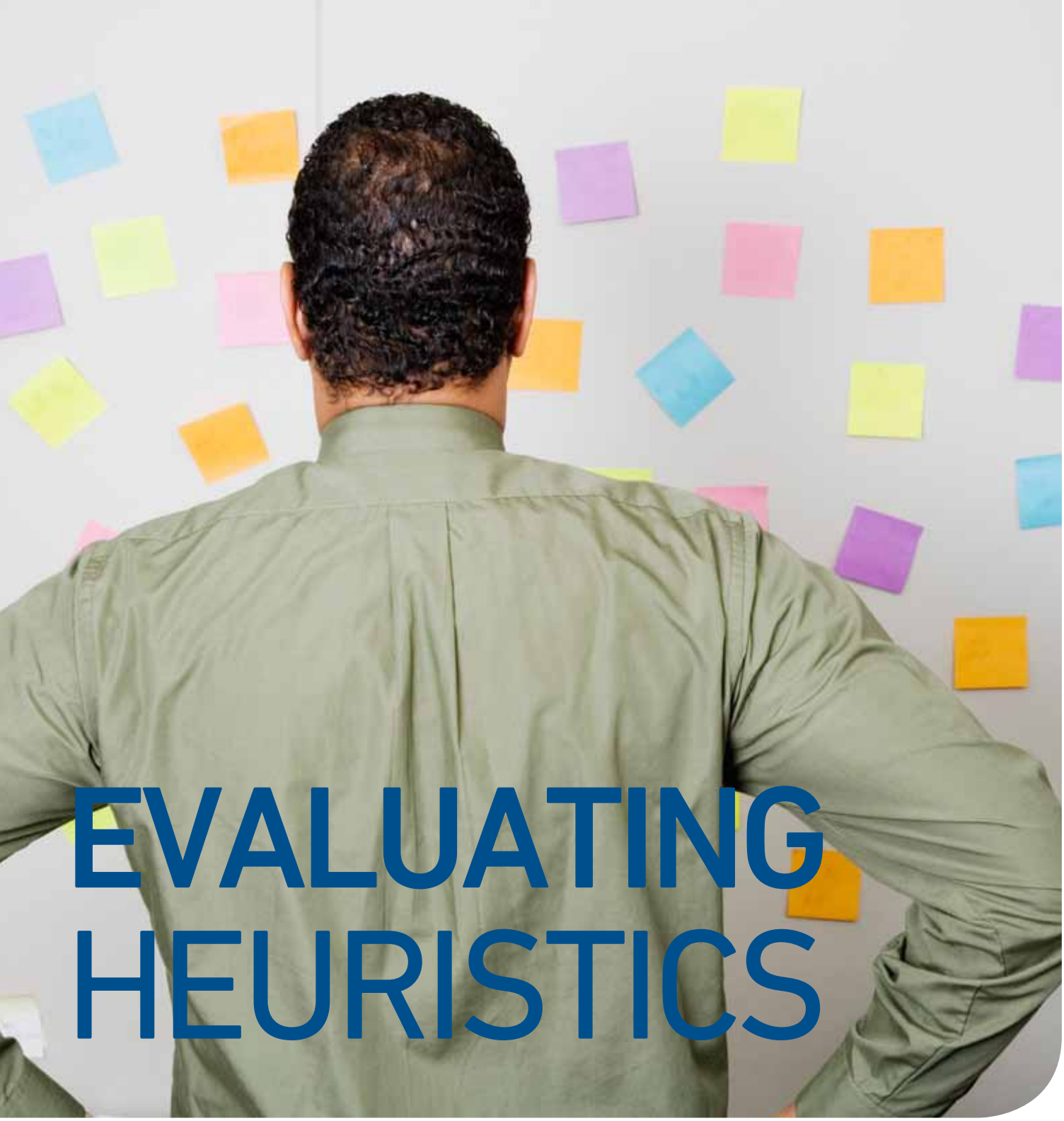
**Three themes**

Three particular themes stand out: presence and media; presence and ethics and presence theory. Presence is filled with the same range of frequently used and ill-defined terms as user experience (UX) research. Correspondingly there were numerous papers on measures of the extent to which people engaged in; were involved in; were immersed in and, of course, felt present in movies, games, virtual reality, and 3D TV. In this respect there is a substantial but, for the moment, ill-defined overlap between presence and UX. Both disciplines can learn from the other.

At first sight, ethics and presence may seem an odd combination but, for example, presence is a necessary condition for the successful application of various forms of cybertherapy. However the most captivating talk in this vein was in the area of historical reconstruction. The London Charter (no, we hadn't heard of it either) is an agreement to reproduce historical sites – such as Pompei – based on the best available information and no more. The speaker on this talked about the temptation to fill recreated historical sites with everything from gladiators doing their thing to painting virtual walls too vividly and there not being enough dirt, grime and bird droppings to be convincing – and hence able to sustain a sense of presence.

Finally, to theory: the cognitive sciences, phenomenology and (inevitably) cognitive psychology were all represented and discussions of being-in-the-world, habitus, avatars and cyborgs abounded. Again the relevance to UX was striking.

The final day saw two panel sessions. One speculated along the theme of 'where next' but the other underlined how presence research has become mainstream as it concerned digital tourism. Three speakers considered how to add a greater sense of presence to the tourist experience – before they arrive, when they are there and afterwards. Thus the conference began and ended with a discussion of trajectories.



# EVALUATING HEURISTICS

**Gavin Sim** argues that considerable research is still needed to improve heuristics design, the conduct of evaluations and our understanding of evaluators, and encourages researchers and practitioners to embrace this challenge once and for all.

The heuristic evaluation methodology has been available to the HCI community as a method for inspecting the usability of systems and software for over two decades. It may have lost its appeal as a novel research area, yet there are numerous studies and publications each year within HCI and other subject disciplines. The primary focus of these papers over recent years has been to improve the methodology or develop domain specific heuristics.

Since its inception the method has needed to address issues such as evaluator effect, unreliability of severity ratings and the possible retention of false positives within the aggregated data set. As technology has evolved and systems become more complex the original heuristic set developed by Nielsen has become ineffective in many domains thus requiring domain specific heuristics to cover areas such as ambient displays, groupware and mobile games. However, with the new heuristic sets the syntheses of complementary severity ratings have often been overlooked or not reported in the literature. This is a crucial aspect of the methodology, as without an aggregated list of problems which are prioritised, the ability of a project manager to prioritise resources as part of a development life cycle is hindered. How can we further improve the method?

**Better understanding of the evaluators**

The evaluator effect is well understood and research has suggested that evaluators are more effective if they are

double experts, experts both in the domain being investigated and in usability. But what is an expert, when do you actually qualify and is it really quantifiable? If one evaluator has performed five evaluations after a week's training how would this person be categorised? If a student on a course has spent six weeks in lectures on evaluation methods, and performed a variety of different methods, would they be judged an expert? There appears to be a linear progression from novice to expert, yet no boundaries are drawn. But is it so simple to state that an expert will always perform better than a novice: motivation and mood will have an impact on an individual evaluators' performance.

This also leads to the notion of double expert, why not triple when you are dealing with special users such as the elderly or children. You may be an expert in game design and usability but have no experience of children, which could lead to inaccurate predictions of problems or the retention of false positives. The data generated from the heuristic evaluation is only as good as the evaluators, therefore a better understanding of the people performing the evaluation would certainly aid improving the method.

**Better understanding of the problem sets**

The final outcome from a heuristic evaluation is the problem set, yet how useful is this to the development team? The evaluators should merge problems into an aggregated list and attach severity ratings but there is little evidence to suggest that this is a reliable or effective approach. If 20 problems had a severity of 3 how would a project manager prioritise these with limited resources?

There is also the possibility that multiple evaluations could be performed, for example the same system being evaluated by two different methods, and the data from these would have to be amalgamated. If the evaluations generated a problem set consisting of 200 problems then this is a time consuming process that may be reliant on a single person to merge the data sets. Methods exist for merging data, including card sorting (open or closed) and thematic analysis, but within the context of heuristics which is more appropriate, cost effective or useful?

The aim of the evaluation should be to produce a data set that is prioritised and meaningful in order to aid the decision making process. Can we do better at understanding and improving this process? I believe we probably can.

**Better understanding of designing heuristics sets**

It is apparent that new domain specific heuristics are required as new interactive technologies and experiences emerge. It therefore becomes important to understand the creation process, what methods are used to synthesise the heuristics and how we can know they are valid and appropriate for the domain. For example within some domains, such as e-learning, multiple heuristics sets have been created without a clear rationale, or evidence of the ineffectiveness of existing sets.

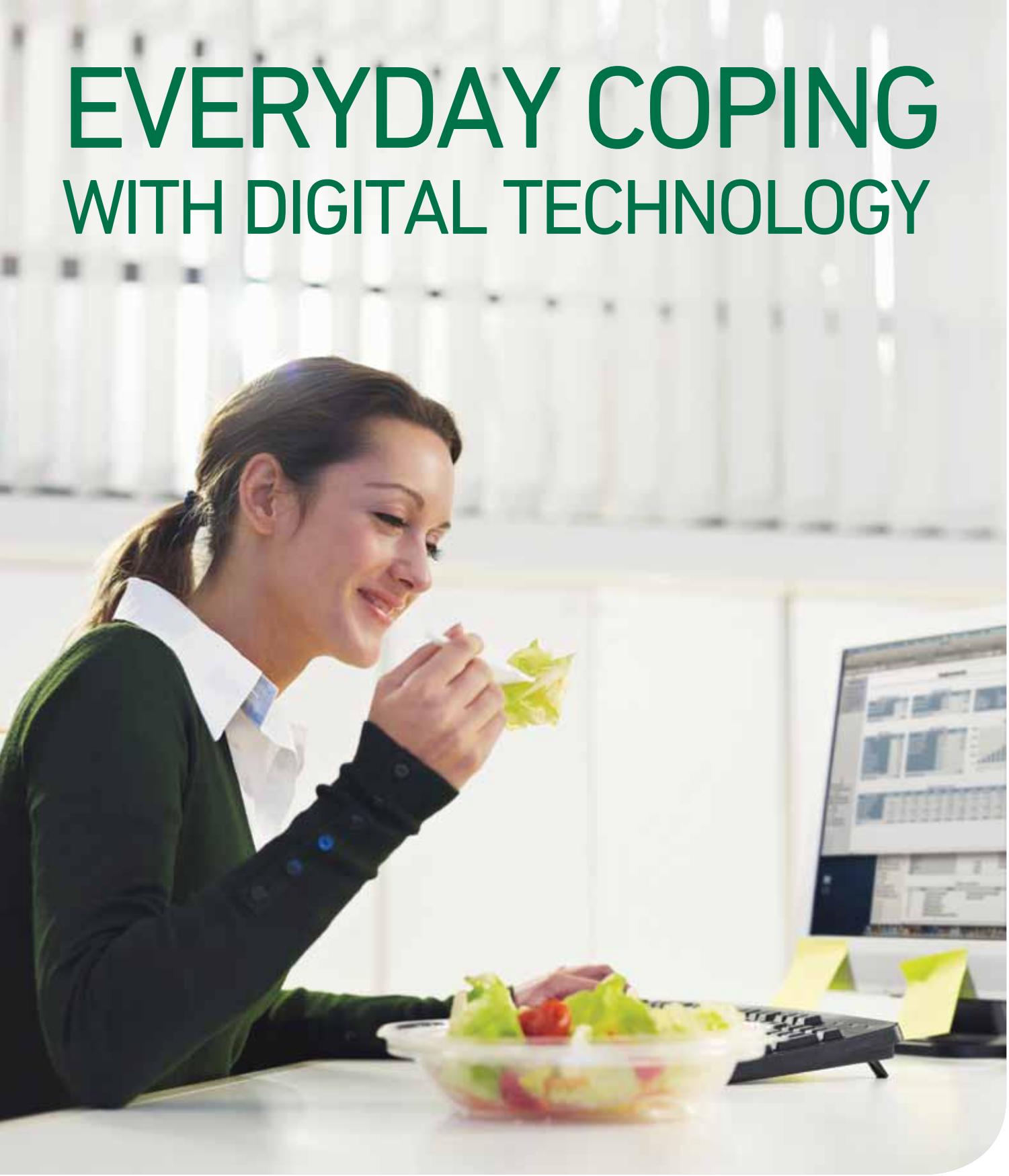
Clear criteria need to be established to determine what constitutes a good heuristics set; factors have been suggested such as coverage, effectiveness and ease of use, but is this enough? In addition, when creating a heuristics set, what is the optimum number of heuristics that should be created?

Nielsen's set was originally 10; however a variable number of heuristics have been created within new sets, and this may have an impact on the ability of the evaluators if the number is too great, thus overcomplicating the method. Do we need linguistic input into the terminology used within the heuristic sets? From personal experience evaluators have been able to classify the same problem to different heuristics. Is this an issue? Perhaps, depending on how the solution is derived, which may be influenced by the heuristic it violated.

It is my view that there is still considerable research to be performed to improve the heuristic evaluation method, from the process of designing heuristics, conducting the evaluation and understanding the evaluators. I encourage researchers and practitioners to embrace this challenge and once and for all improve the heuristic evaluation method so that we are not still reading the same papers in 20 years' time.

If a student on a course has spent six weeks in lectures on evaluation methods, and performed a variety of different methods, would they be judged an expert?

# EVERYDAY COPING
## WITH DIGITAL TECHNOLOGY



**Phil Turner**, Edinburgh Napier University, observes that we have more or less learned to cope with the digital technology we encounter every day, yet we have no account of this routine behaviour – and perhaps we should.

Our everyday lives are characterised by the habitual and the routine and for many of us, this means the habitual and routine use of digital technology (technology hereafter). Yet human–computer interaction is remarkably coy on what this might mean. Actually, it goes beyond coyness as we don't have anything very much to say about this routine use of technology at all.

I propose that we *cope* with it, so that *everyday coping* (with technology) becomes, by definition, the most typical relationship we have with it. The term 'coping' is drawn from the philosophical literature, though 'coping', at first sight, seems a little innocuous (if not a bit wet) and is more usually associated with dealing with emotional situations. However *to cope* is not just about 'getting by' or 'muddling through', but dealing with a

situation effectively. Etymologically *to cope* means to vie with, to match, and is from the Middle English to strike, to encounter. I begin with a brief examination of coping.

**Coping**

**Practical coping**

Hubert Dreyfus was the first to articulate an account of *practical coping* which he defines as the

> **mostly smooth and unobtrusive responsiveness to circumstances that enable human beings to get around in the world.**

Dreyfus proposes practical coping as an alternative to classical accounts of cognition which involve the application of 'rules' to an internal representation as a means to create plans which are duly executed. Thus coping is the practical, skilful and representation-free dealing with the world. Rouse, writing of Hubert Dreyfus' contribution to phenomenology, argues that his greatest contribution has been the 'phenomenological articulation of embodied, practical coping' (Rouse, 2000, p.7). Given the absence of an internal representation and 'rules' for its manipulation, practical coping cannot be made fully explicit – just as with any form of tacit knowledge or 'situated action'.

Practical coping is a description of engaged skilful behaviour, for example, eating, sitting working at a desk and playing a sport, with tools being a key feature of this kind of unforced behaviour. So, for example, in composing this article, I am sitting at a table, typing on my laptop, drinking a mug of tea (without spilling it on the keyboard), eating a banana and fixing my typos and mis-keying as I go along – in short I am displaying practical coping.

**Smooth coping**

In a closely related vein, Michael Wheeler uses the term *smooth coping* to designate 'the sort of hitch-free skilled practical activity [which is] revealing of the ready-to-hand'. This mode of encounter discloses the readiness-to-hand of equipment which it possesses in 'its own right' and as such is the most direct and revealing of our relationships with it. Wheeler writes that it would be wrong to equate smooth coping with mere patterns of coupled *action-perception*. Instead smooth coping is dynamic and flexible like, as Wheeler suggests, the image of the skilled (motor car) driver effortlessly coping with changing driving conditions and other traffic.

So, is smooth coping a kind of knowledge – specifically, 'knowledge how'? Indeed it does appear to be so, and we demonstrate this knowledge by using and manipulating equipment appropriately.

We must, of course, be careful how we use the term 'everyday', distinguishing between 'everyday coping' from coping with 'everyday technology'.

**Immediate coping**

Valera's *immediate coping,* which is another form of non-representational cognition, is based on skilled behaviour. In some aspects it seems like a continuation of Piaget's work on genetic epistemology. Indeed Varela (1992) begins his *Ethical Know-How* by citing the work of Piaget. In Piaget's *The Moral Judgement of the Child* he writes that his interest was in moral judgement and not moral behaviour, Piaget arguing that 'pure reason is the arbiter both of theoretical reflection and daily practice'. Thus, to understand judgment and behaviour one must understand the underlying cognitive processes ('pure reason'). However, Valera is highly critical of this reason-first approach to behaviour, arguing that the focus should be on understanding the skilled behaviour itself and not the inferred context-free judgments that drive it.

However, these account miss, for me, any discussion of everydayness.

**Everydayness**

We must, of course, be careful how we use the term 'everyday', distinguishing between 'everyday coping' and coping with 'everyday technology'. For the purposes of this discussion we focus on the former. The latter – everyday technology – refers to computing that has been woven or embedded 'into the fabrics of our everyday lives', which, of course, was the starting point for Weiser's conception of ubiquitous computing – ubicomp (Weiser, 1991). Thus ubicomp's everyday technology refers to the whole raft of realised and proposed smart devices (e.g. Norman, 2007); information appliances and context aware applications (e.g. Dey *et al.*, 2001). So, for everyday technology the emphasis is largely, but not wholly, on technology *per se*. Though a slight caveat can be found in the sentiment expressed by Bell and Dourish who propose that, '... dealing with

the messiness of everyday life should be a central element of ubicomp's research agenda' (2007, p.134).

**Neglected dimension**

To describe our use of technology – at home, at work and at leisure – as everyday coping is, let's be fair, quite dull. But I would argue that everydayness is a neglected dimension in the study of how we use technology – perhaps its lack of glamour or appeal has ensured that it has not been an explicit design goal and we have not sought to develop 'everyday evaluation'. Yet as Gardiner (2000) has observed,

> ... everyday life [ ... ] a context that refers to the taken-for-granted and often unnoticed world that caters to, develops and integrates many human capacities.

Similarly, Langbauer (1992, p.47) writes that everyday life is 'so taken for granted [ ... ] that it is almost never defined'. Indeed Norman's (1988) seminal text, *The*

*Psychology of Everyday Things* fails to define 'everyday' at all, yet for de Certeau everyday life is distinctive from other practices because it is repetitive and unconscious. Despite this, (or because of this) he regards it as being relevant to everything from navigating city streets to literary texts. Lefebvre and Levich (1987) insist that,

> The everyday, established and consolidated, remains a sole surviving common sense referent and point of reference. [ ... ] The proposition here is to decode the modern world, that bloody riddle, according to the everyday.

Finally, Heidegger (1927/1962) probably goes further than the above writers in foregrounding the importance of the everyday. In attempting to describe the nature of our being (*Dasein*) he starts from the everyday world. He does not adopt an external privileged vantage point of understanding and instead locates this 'fundamental ontology' in everydayness.

**The habitual and routine**

However, in the midst of this diversity there is the almost uncontroversial aspect of everyday life, namely, the habitual and routine and it is these to which we now turn.

William James (1890) was the first psychologist to emphasise the importance of habits: 'We must make automatic and habitual, as early as possible, as many useful actions as we can.' (p.122), and Aarts and Dijksterhuis (2000) write that the majority of people's actions are executed on a routine basis and that much of what people do in daily life becomes highly automatised, and they go on to present ample evidence that habitual behaviour – defining habitual as a function of the relative frequency of past performance – is automatic. Habits and the routine are determined by past behaviour and do not appear to be mediated by attitudes or intentions. They conceive of habits as a form of goal-directed (automatic) behaviour linking a goal to the actions which are instrumental (*sic*) in attaining this goal. However in doing so they reject the notion that habits are mechanistic, that is, unthinking responses to environmental stimuli, as presented by the Behaviourists. Other psychological discussions of habit follow this kind of pattern.

**Habitus**

Moving from the psychological to the sociological it is inevitable that we encounter Bourdieu's concept of *habitus*. This was his attempt to account for the regularity, coherence and order of everyday life without ignoring its strategic and negotiated nature. An habitus is the residue of an individual's past that colours his or her present. It shapes perceptions and behaviour in a regular fashion and it consists in dispositions and various forms of tacit knowledge. For example, a child brought up in an arty household is more likely to develop their own artistic taste. Thus habituses are said to be 'structured structures' as they incorporate habits and particular forms of practice.

Taken together – habitus, habit and routine – can all be captured by the single concept – *familiarity*.

**Everyday coping**

And, everyday coping is a consequence of that very familiarity with technology. Familiarity is a thorough knowledge of, or an intimacy with, something or someone, and as familiarity is the means by which we make sense of interactive technology, it is necessarily the foundation for coping with it. Indeed designers of interactive technology have long recognised the need to ground our design efforts in the familiar.

Forty years ago the components of the office workplace provided that familiarity. Now, a generation has grown up never knowing a world without computers. Technology is no longer exclusively used instrumentally but as an end in its own right. It would also seem that social networking trumps a good night's sleep with a third of young women admitting to checking their Facebook™ accounts before brushing their teeth in the morning – while 21% check them during the night (Oxygen, 2010).

Familiarity is not passive, it is not just a kind of memory or knowledge structure, it is better thought of as a 'readiness' to cope. Our familiarity with chairs readies us to sit on them; with mobile phones to talk to someone; with web pages to browse them, and so forth. Heidegger calls familiarity *'our practical everyday orientation'* (p.163). Heidegger has also told us that familiarity encompasses the ideas of engagement and understanding. Drawing on the work of Dreyfus (1991) together with a number of real world studies we have established empirical evidence for Heidegger's insight.

Having presented a case for everyday coping, what's next? Our answer is that everyday coping may serve as the basis for reasoning about everyday design and with this inclusion and universality. Conceiving of our routine use of technology as everyday coping embodies the mundane and the ordinary. This is, if common sense and Heidegger (an unusual, if not unprecedented, conjunction) are to be believed, where we all begin and most of us stay.

An everyday technology, by definition, must fit with our everyday practices and not require anything other than *average everydayness*. We can now, perhaps, distinguish between designing for the everyday and the often vacuous ephemera of 'must-have' design.

## REFERENCES


Aarts, H., and Dijksterhuis, A. (2000). Habits As Knowledge Structures: Automaticity In Goal-Directed Behaviour. *J of Personality and Social Psychology*, **78**(1), 53–63.

Dey, A., Abowd, G., and Salber D (2001). A conceptual framework and a toolkit for supporting the rapid prototyping of context-aware applications. *Human–Computer Interaction*, **16**(2–4), 97–166.

Dourish, P. (2004). What we talk about when we talk about context. *Personal and Ubiquitous Computing*, **8**, 19–30.

Dreyfus, H.L. (1991). *Being-in-the-world: A Commentary on Heidegger's Being and Time, Division 1*. Cambridge, MA: MIT Press.

Galloway, A. (2004). Intimations of everyday life. *Cultural Studies*, **18**(2), 384–408.

Gardiner, M. (2000). *Critiques of Everyday Life*. New York, NJ: Routledge.

Heidegger, M. (1927/1962). *Being and Time*. (Translated by J. Macquarrie and E. Robinson). New York: Harper Collins.

James, W. (1890). *The Principles of Psychology*. Available from psychclassics.yorku.ca/James/Principles/index.htm [last retrieved 17 September, 2011].

Langbauer, L. (1992). Cultural studies and the politics of the everyday, *Diacritics*, **22**(1), 47–65.

Lefebvre, H., and Levich, C. (1987). The Everyday and Everydayness. *Yale French Studies*, **73**, 7–11.

Norman, D.A. (1988). *The Psychology of Everyday Things*. New York: Basic Books.

Oxygen (2010). mashable.com/2010/07/07/oxygen-facebook-study [last retrieved 22 July 2011].

Rouse, J. (2000). Coping and Its Contrast. In M. Wrathall and J. Malpas (Eds.) *Heidegger, Coping, and Cognitive Science*. Cambridge. MA: MIT Press.

Valera, F.J. (1992/translated 1999). *Ethical Know-How*. Stanford CA: Stanford University Press.

Valera, F.J., Thompson, E., and Rosch, E. (1993). *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge: MA. MIT Press.

Weiser, M. (1991). The computer of the 21st century. *Scientific American*, **265**(3), 94–104.

Wheeler, M. (2005). *Reconstructing the Cognitive World*. Cambridge, MA: MIT Press.

# CALL FOR PARTICIPATION IN HCI 2012

**Some history**
Since its establishment in 1985, the Annual Conference of the BCS Interaction SG has become the leading annual HCI conference in Europe. The conference has a history of nurturing research careers – many of the leading HCI researchers published their early papers here and it is recognised for helping students and new academics as much as for being a leading forum for established researchers. We want to carry on this well-established tradition into 2012.

The main conference will be held at the IET at Austin Court, a purpose-built facility in the centre of Birmingham, within walking distance of major hotels, restaurants, bars and nightlife of the city.

Socially, the conference will build on its reputation as the liveliest, friendliest place to meet other HCI researchers. The conference dinner will be held at the Botanical Gardens, complete with outdoor spaces, tropical hothouses, exotic birds and beautiful parkland.

**Submission tracks**
Full papers should be a maximum of 10 pages long, of original work and not previously published. Short papers should be a maximum of 6 pages and should be compact pieces of original work. There is also a 'work-in-progress' category. We strongly encourage participants to reflect the spirit of the track by submitting early-stage, surprising or incomplete results that may be of relevance and interest to the community.

Following on from HCI 2011 we have also included an alt-HCI track, for work that highlights a more extreme, unusual, less mainstream side of HCI. We are looking for high quality contributions that might be highly contentious, using atypical methodologies, critical of established ideas or focused in an unconventional domain. If your work is alternative, controversial and interesting, then alt-HCI is the track for you.

The conference will also host a variety of workshops and a doctorial consortium. These will be held on the leafy campus of the University of Birmingham, in Edgbaston, a redbrick university and member of the Russell group.

**Dates for submissions**
We encourage submissions that focus on the human's interactions with technology and computer systems. Whether your work is at the fundamental end of the spectrum – theory, design, or principle – or at the practical end – evaluation, product, or impact – we are interested in encouraging high-quality submissions to the conference.

| | |
|---|---|
| Full Papers | 30 March 2012 |
| Notification | 31 May 2012 |
| Short Papers, WiP, Alt-HCI | 15 June 2012 |
| Notification | 27 July 2012 |

Relevant topic areas include but are by no means limited to:

- Persuasive Technology
- Mobile Interactions
- User Experience
- Touchtable interactions
- Usability Engineering
- Accessibility
- Interaction Design
- UCD4D
- Recommender Systems
- Annotation
- Brain Computer Interfaces
- Technology and Culture
- E-Government

All tracks will be peer reviewed by an international panel of leading researchers. Papers will be published in the BCS e-WIC repository and in the ACM Digital Library. In keeping with the BCS HCI ethos, early career researchers are especially encouraged to submit to the main conference, whilst those still undertaking PhDs should consider applying for the doctoral consortium, a training and supportively critical forum in which to discuss your research.

To recognise outstanding contributions to the 2012 conference and to nurture the HCI researchers of tomorrow we will have best paper and best student paper awards, which will be judged by the reviewers and announced at the conference dinner.

**Conference theme**
For 2012 we have returned to the founding theme of the conference: *People and Computers*. This is to encapsulate and highlight the growing diversity of our field of HCI. Technology is now common in all walks of life and HCI practitioners and researchers have more areas of impact than ever before. We want the conference to reflect this growing importance and diversity.

**The venue**
The City of Birmingham has undergone a transformation over the past few decades. It now boasts more canals than Venice, a plethora of riverside restaurants, bars and cafes, a range of cuisine from around the world, coupled with a compact city vibe. Birmingham is easily accessible by road, rail and air, and well located for extending your stay, whether you plan a city break, or a short trip into the countryside.

**HCI 2012 news and views**
We want to hear what people are saying about HCI 2012. The HCI 2012 Twitter Chatter banner on our web site will display all tweets, so people can see the community's views, opinions and comments about HCI 2012. The conference twitter feed is also the way to keep one step ahead with news about HCI 2012, just follow **@hci2012**. To share your tweets use the hashtag **#hci2012uk**.

Our website, **www.hci2012.org**, also has up to date information on submissions, venues and other conference news.

We are looking forward to welcoming you to Birmingham!

The HCI 2012 Conference Chairs
**Chris Bowers**, **Benjamin R. Cowan**, **Russell Beale** and **Chris Baber**

# hci2012

People & Computers

Birmingham, UK 12 - 14 Sept

www.hci2012.org

## Call for Participation

HCI 2012 is the 26th Annual Conference of the BCS Interaction SG, the HCI specialist group of the British Computer Society.

For 2012 the conference will return to the founding theme of "People and Computers". The field of HCI is now far reaching and highly diverse. We want the conference to reflect this growing diversity.

We welcome high quality, original full, short and work in progress paper submissions. All tracks will be peer reviewed by an international panel of leading researchers. Papers will be published in the BCS e-WIC repository and in the ACM Digital Library.

Twitter: @hci2012 #hci2012uk

bcs Interaction Specialist Group

UNIVERSITY OF BIRMINGHAM

Centre for Human Computer Interaction

### Submission Deadlines

Full Papers
Friday 30th March 2012

Short Papers & Work in Progress
Friday 15th June 2012

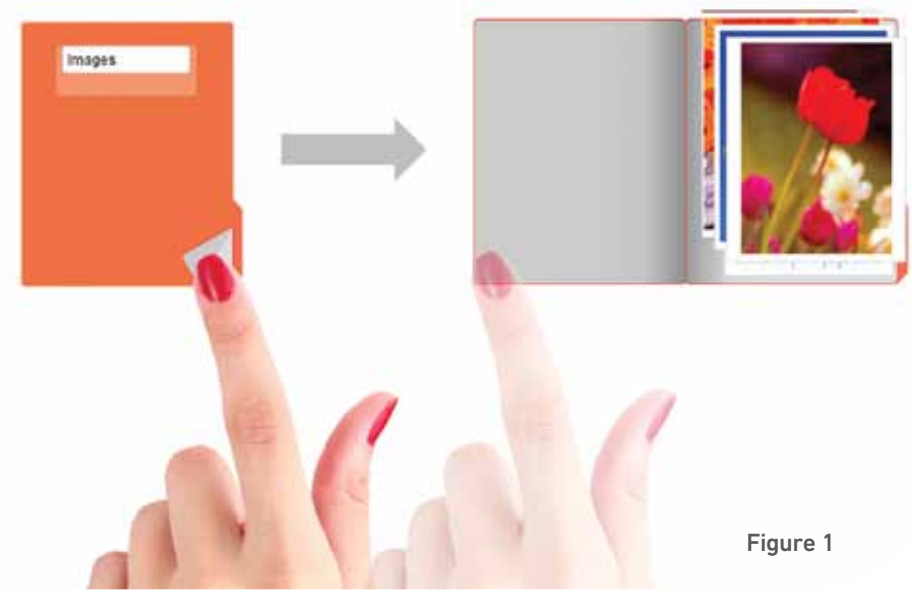



Figure 1

# NIC HOLLINWORTH: IMPROVING INTERACTION FOR OLDER ADULTS

**An ageing society**

The worldwide population is getting older. In the UK alone, there are now more people aged 60 or above than there are under the age of 16 [4], many of whom will use computing technologies through necessity or choice. Despite the potential benefits of computers, there still exists an age-based digital divide with computer systems (and technology in the main), with older users making up a relatively small proportion of the computer and Internet users in the UK [1, 13]. Everyone needs to have access to computing technologies for communications, quality of life and to maintain independence, but technology is not currently designed well for everyone.

**Interface (re)design for older users**

Having the interest and motivation should be sufficient conditions to acquire computer skills, but many novice older adult computer users are hampered by the poor design of computer systems which do not match the capabilities of older people, nor what they wish to do with these technologies [2, 3]. Designers on the whole have neglected older people [3, 12], opting for features over usability, the use of technical language that is alien and often unintelligible to these generations [15] and ignoring the physical and cognitive limitations of older people so that they do not compromise the appeal of the interface for the younger generations [9].

**A dynamic challenge**

It is tempting to believe that the problem is static, in that younger people who have been exposed to computers throughout schooling will not face the difficulties that older adults face today when they themselves become older, and so the difficulties faced by the current older generations will gradually resolve over time. However, technology will continue to advance and new products will continue to be released and developed, bringing with them new challenges, regardless of how experienced one might be with current technologies.

When younger people become older they too will very likely have age-related declines in cognition, motor control and perception, and also changes in attitudes that will affect their ability to use a computer system effectively [14]. Consequently, older people will still lag behind the young in the adoption and ability to use technologies, and so will need to continually update their skills [10]. However, with improved design this lag may in future be smaller and not one which is inflicted through the inability to access the technologies or through physical or cognitive demands which make technologies unsuitable for the older generations.

**Improving the computer experience**

Over the last four years I have been looking at ways to improve the computer experience for older computer users (novices and experienced) and started with an exploratory study of how older people work with computer applications [5]. Much of the time spent with this study was in observing how older people actually work with a computer, and seeing first-hand the difficulties that are often encountered.

We gave participants tasks involving word processing, file management and document processing, and found that most of the problems were due to file and folder manipulation, and some aspects of document formatting. As a response to the difficulties observed with file handling in the initial study, a follow up study was conducted to investigate how older adults physically manipulate and arrange paper documents and folders, how use is made of available (tabletop) space for working and what (if any) problems are encountered when handling these artefacts.

We didn't expect anyone to have any major problems with manipulating and filing paper documents and folders – we wanted to see how different it was to work with them compared with equivalent tasks on the computer. The results were used in the development of a novel interface designed to be more natural and familiar to older computer users, and better suited to the way in which older people conceptualise, manage and manipulate files and folders [6] (see figure 1).

**Multi-touch interaction**

In a recent study, a more elaborate example of natural and familiar interface design was explored using an email client (tmail) as an exemplar [8], and featured objects that could be manipulated directly through (multi-touch) touchscreen interaction. The application was again based upon visual objects that are designed to be familiar to the user in terms of their appearance and behaviour, so helping to give users a head start in understanding how to use the application through existing experience with objects in the real world. Participants could write and view emails, and manage attachments by touching and sliding objects on the screen. Most of the participants found the client easier to use than their standard web-based client, and appreciated the simplicity of handling attachments provided by the application.

A detour from the exploration of interfaces for older adults was concerned with the problem of 'lost cursors'. Losing the mouse cursor is not uncommon amongst older adult computer users [11, 16], and can be frustrating and tiresome when the cursor cannot be located. Hence, we conducted an experiment with a group of older and a group of younger computer users that examined a novel technique designed to alleviate the problem of losing the mouse cursor. By modifying a

Figure 2

standard mouse to include a touch sensor (together with appropriate software), the mouse cursor was always placed at the centre of the screen whenever the mouse was released, and subsequently touched. The goal was to provide a transparent technique that could be used by older computer users without any training or memorisation of keystrokes [7]. The technique worked well for older adult computer users, and was quicker than the traditional technique of shaking the mouse (see figure 2).

Future directions for the research of ageing and computer use are wide, and there are many interesting possibilities. But as a start, an in-depth study of how to assess computer ability with older people is being planned. Current techniques for assessing proficiency in older people are limited, and do not give a complete nor reliable account of their understanding. Hence, a more reliable measure is being considered.

**A last few words**

The stereotype of older people is that they are not interested in technology and do not appreciate innovation, but this couldn't be further from the truth – adults of all ages appreciate good design, aesthetic appeal *and* enjoy using new technologies. Age might bring with it changes in some abilities and attitudes, but ageing doesn't necessarily make you a Luddite. Furthermore, with the continual increase in the proportion of older people, and the prevalence of computers, future technologies must be designed to be age-proof. After all, we'll all be old one day.

Nic Hollinworth is a PhD student at the University of Reading, associated with the Cybernetics Research Group under the supervision of Dr Faustina Hwang. He completed a BSc in Mathematics at the University of Warwick, and later went on to complete an MSc in Computing and HCI at the University of York. He has been working with adults of all ages for over 15 years, and has worked closely with AgeUK (at Reading and Banbury) on many of his projects over the last four years.

n.d.p.hollinworth@reading.ac.uk

## MY PHD

If you are a PhD student just itching to tell the world about your research then we would like to hear from you.

We are currently accepting one to two page summaries from PhD students in the UK and across Europe with a focus on being open and accessible to everyone in the HCI community. For more information please contact :

Dr Shaun Lawson, Professor of Social Computing, Director, Lincoln Social Computing (LiSC) Research Centre, University of Lincoln, UK

**lisc.lincoln.ac.uk/shaun**
**slawson@lincoln.ac.uk**

## REFERENCES

1 Charness, N., and Czaja, S. (2005). *Adaptation to new technologies*, ch. 7, 662–669. Cambridge University Press.
2 Charness, N., and Boot, W. (2009). Aging and information technology use: Potential and barriers. *Current Directions in Psychological Science*, **18**, 253–258.
3 Czaja, S.J., and Lee, C.C. (2008). Information technology and older adults. In *The Human Computer Interaction Handbook*, A. Sears and J. Jacko, Eds., ch. 39, 777–792. CRC.
4 Help the Aged (2010). *Older people in the United Kingdom*. www.ageuk.org.uk. Last accessed Oct 2010.
5 Hollinworth, N., and Hwang, F. (2009). Learning how older adults undertake computer tasks. In *Proceedings of the 11th international ACM SIGACCESS conference on Computers and accessibility (Assets '09)*, 245–246. ACM, New York, NY, USA.
6 Hollinworth, N., and Hwang, F. (2010). Relating computer tasks to existing knowledge to improve accessibility for older adults. In *Proceedings of the 12th international ACM SIGACCESS conference on Computers and accessibility (ASSETS '10)*, 147–154. ACM, New York, NY, USA.
7 Hollinworth, N., and Hwang, F. (2011). Cursor relocation techniques to help older adults find 'lost' cursors. In *Proceedings of the 2011 annual conference on Human factors in computing systems (CHI '11)*, 863–866. ACM, New York, NY, USA.
8 Hollinworth, N., and Hwang, F. (2011). *Touching on Familiar Interfaces for Older Adults*. Manuscript submitted for publication.
9 Hutchison, D., Eastman, C., and Tirrito, T. (1997). Designing user interfaces for older adults. *Educational Gerontology*, **23**, 497–513.
10 Kelley, C. L., and Charness, N. (1995). Issues in training older adults to use computers. *Behaviour & Information Technology*, **14**, 107–120.
11 Kosnik, W., Winslow, L., Kline, D., Rasinski, K., and Sekuler, R. (1988). Visual changes in daily life throughout adulthood. *Journal of Gerontology*, **43**(3), 63–70.
12 Leonardi, C., Albertini, A., Pianesi, F., and Zancanaro, M. (2010). An exploratory study of a touch-based gestural interface for elderly. In *Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries (New York, NY, USA, 2010)*, 845-850. NordiCHI '10, ACM.
13 Morris, A., Goodman, J., and Brading, H. (2007). Internet use and non-use: views of older users. *Univers. Access Inf. Soc.*, **6**, 43–57.
14 Rogers, W., and Fisk, A.D. (2003). Technology design, usability, and aging: Human factors techniques and considerations. In *Impact of Technology on Successful Aging*, N. Charness and K. Warner Schaie, Eds., 1–14. Springer.
15 Syme, A., Dickinson, A., Eisma, R., and Gregor, P. (2003). Looking for help? supporting older adults' use of computer systems. In *Interact '03*, M. Rauterberg, Ed., 924–927. IFIP.
16 Vigouroux, N., Rumeau, P., Vella, F., and Vellas, B. (2009). *Studying point-select-drag interaction techniques for older people with cognitive impairment*, 422–428.

# INTERACTING WITH COMPUTERS


| Volume 23, Issue 6, December 2011 |
|---|
| Woontack Woo, Taejin Ha and Mark Billinghurst<br>Interactive 3D Movement Path Manipulation Method in Immersive Augmented Reality Environment |
| Ravi Kuber, Shaojian Zhu, Matthew Tretter and M. Sile O'Modhrain<br>Identifying the Effectiveness of using Three Different Haptic Devices for Providing Non-Visual Access to the Web |
| Martin Mihajlov and Borka Jerman-Blazic<br>On Designing Usable and Secure Recognition-based Graphical Authentication Mechanisms |
| Alan Newell, Margaret E Morgan and Lorna Gibson<br>Experiences with Professional Theatre for Awareness Raising |
| Timo Partala and Aleksi Kallinen<br>Understanding the Most Satisfying and Unsatisfying User Experiences: Emotions, Psychological Needs, and Context |
| Jeffrey Bardzell<br>Interaction Criticism: An Introduction to the Practice |
| Outi Tuisku, Veikko Surakka, Toni Vanhala, Ville Rantanen and Jukka Lekkala<br>Wireless Face Interface: Using Voluntary Gaze Direction and Facial Muscle Activations for Human–Computer Interaction |
| Jui-ni Sun and Yu-chen Hsu<br>An Experimental Study of Learner Perceptions of the Interactivity of Web-Based Instruction |

**Current issues**
Recent issues of *Interacting with Computers* can be accessed via the ScienceDirect or Journal websites **www.sciencedirect.com/science/journal/09535438**; **www.elsevier.com/locate/intcom**. The latest is Volume 23, Issue 6, the last one of 2011. The first issue of the new volume in 2012 will publish a list of all referees for the year, and a special thanks to them from the General Editor.

**Recent papers**
The ScienceDirect page also gives access to accepted *Articles in Press* awaiting printed publication. These papers can be cited with a doi, and can be downloaded in full. Recently accepted papers are notified on the journal's Facebook and LinkedIn groups pages.

**Special Issues for 2012 and 2013**
Three Special Issues are currently in preparation but we are happy to receive proposals for new Special Issues for 2013 on interesting, up-to-the-minute and novel areas of HCI research. We no longer, however, accept proposals which are based solely on selections from workshops or meetings so all future Special Issues must include an Open Call for contributions.

**Forthcoming Special Issues**
*Presence and Interaction*
Editors: John Waterworth, Eva Lindh Waterworth, Fabrizia Mantovani, Giuseppe Riva
IwC Shepherd: Adrian Cheok
*Organic User Interfaces*
Editors: Audrey Girouard, Roel Vertegaal, Ivan Poupyrev
IwC Shepherd: Kasper Hornbæk
*Context-driven Human Environment Interaction*
Editors: José Bravo, Diego López-de-Ipiña, Ramón Hervás
IwC Shepherd: Panos Markopolous

**IwC news**

**Junior Reviewers**
At the IwC Editorial Board meeting at CHI 2011 in Vancouver we agreed to initiate a scheme aimed at encouraging 'new blood' and at growing our reviewer pool for the future.

We have created a category of Junior Reviewer so that post-graduate students, junior members of staff, RAs and the like can learn reviewing skills. We will provide experienced Mentors: a Board Member will, where appropriate, choose a Junior Reviewer to serve as an additional fourth reviewer and give guidance and support. Junior Reviewers will gain invaluable experience in 'learning by doing' and have the added advantage of being able to keep up-to-date with the latest work and then moving on to being a reviewer in their own right.

A new classification will soon be in place and so nominations and recommendations are welcome. Potential Junior Reviewers should sign up to the EES database themselves, **ees.elsevier.com/iwc**, indicating they are available to be a reviewer and noting the name and contact details of their supervisor or manager. Email the General Editor with a copy to say that you have done this. Recommendations should be sent to the General Editor giving details of the nominated individual. Please be patient if there is not an immediate reply: all applications will be assessed during the next months.

As ever, you can access *Interacting with Computers* online and see, on the IwC homepage, the latest papers, most downloaded articles, up-to-the minute citation statistics and calls for submissions. Join us also at:

- LinkedIn **www.linkedin.com/groups?mostPopular=&gid=3772828**
- Facebook **www.facebook.com/home.php?sk=group_143060969098191&ap=1**
- Mail to **iwcFB@groups.facebook.com**

**Dianne Murray**
**General Editor, *Interacting with Computers***
**Email** dianne@city.ac.uk

**www.elsevier.com/locate/intcom**
**www.bcs.org/content/conWebDoc/36881**
**www.sciencedirect.com/science/journal/09535438**

# CALLS AND COMMUNICATIONS

**Design and the Digital Divide**
Insights from 40 years in Computer Support for Older and Disabled People

Alan F. Newell, University of Dundee


This monograph describes research ranging from developing communication systems for non-speaking and hearing impaired people to technology to support older people, and addressing the particular challenges older people have with much modern technology.

Alan recounts the insights gained from this research journey, and recommends a philosophy, and design practices, to reduce the Digital Divide between users of information technology and those who are excluded by the poor design of many current systems.

**www.morganclaypool.com**

Call for Papers

**The Visual Computer: International Journal of Computer Graphics**

Special Issue on Virtual Worlds: where Image Processing meets Computer Graphics

Submission Deadline: 31 January 2012

**www.3dlife-noe.eu/3DLife/activities/special-issues/cfpvw**

Call for Participation

**Tiree Tech Wave 3**

A hands-on making and meeting event exploring the edges of technology on the wild edge of Scotland

22–26 March 2012
Isle of Tiree
Scotland, UK

**tireetechwave.org**

## EXECUTIVE COMMITTEE 2010–2011

**Tom McEwan** UK Chair
**David England** Membership Secretary
**Corina Sas** Treasurer
**John Knight** Communications Chair
**George Buchanan** Research Chair
**Janet Read** Education Chair
**Jakub Dostal** Student Representative Chair
**Aaron Quigley** Scottish Chair

### CHAIR'S ADVISORS

**Russell Beale** HCI2012 co-Chair
**Adrian Williamson** BCS Liaison

### SOUTH ENGLAND

**John Knight** Communications Chair
**Nick Bryan-Kinns** PR & Marketing, UsabilityNews Advisor
**George Buchanan** Research Chair
**Dianne Murray** Editor, *Interacting with Computers*
**Jennefer Hart**, **Shaun Lawson**, **Shailey Minocha** *Interfaces* Contributing Editors
**Jonathan Earthy** HCI Accreditation Scheme
**Tony Russell-Rose** Committee Member

### NORTH ENGLAND

**Corina Sas** Treasurer
**Janet Read** Education Chair
**David England** Membership Secretary
**Andy Dearden** IFIP Liaison
**Alan Dix**, **Barbara McManus** Éminences Grises

### WALES & SW ENGLAND

**Russell Beale** HCI2012 co-Chair
**Ben Cowan** HCI2012 co-Chair and JISC Mailing List
**Daniel Cunliffe** Regional Liaison
**Matt Jones** Regional Liaison
**Steven Welti** Student Representative

### SCOTLAND & NE ENGLAND

**Tom McEwan** UK Chair
**Lynne Coventry** Interfaces Magazine Editor and HCI2011 Chair
**Linda Little** HCI2011 Chair
**Jakub Dostal** Student Representative Chair
**Aaron Quigley** Scottish Chair
**Ingi Helgason** Create2010 Chair
**Emilia Sobolewska** Communications Support

### VACANT ROLES

Offers of help always welcome
India/China Liaison
Webmaster/Web Developers
Student Representatives
Industry & Public Sector Representatives
Interfaces Magazine contributors
UsabilityNews contributors

### BCS CONTACT

E groups@hq.bcs.org.uk
T +44 (0)1793 417 478

BCS, The Chartered Institute for IT
First Floor, Block D, North Star House,
North Star Avenue, Swindon, UK, SN2 1FA
T +44 (0)1793 417 417
F +44 (0)1793 480 270
**www.bcs.org**

BCS Interaction Group is served by regionally based sub-groups with representatives from a broad range of academic and industrial centres of HCI interest. The sub-groups meet informally every few weeks to progress work, and all participants are committed to promoting the education and practice of HCI and to supporting HCI people in industry and academia. For contact details of the people in each sub-group, please select from the following:

## INTERACTION COMMITTEE MEMBERS

**Jacqueline Archibald** University of Abertay Dundee **e** J.Archibald@abertay.ac.uk
**Russell Beale** University of Birmingham **t** 0121 414 3729 **f** 0121 414 4281 **e** R.Beale@cs.bham.ac.uk
**Nick Bryan-Kinns** Queen Mary University **t** 020 7882 7845 **e** nickbk@dcs.qmul.ac.uk
**George Buchanan** City University London **t** 0207 040 8469 **e** george.buchanan.1@city.ac.uk
**Ben Cowan** University of Birmingham **t** 0121 414 4787 **e** B.R.Cowan@cs.bham.ac.uk
**Lynne Coventry** Northumbria University **e** lynne.coventry@northumbria.ac.uk
**Daniel Cunliffe** University of Glamorgan **t** 01443 483694 **f** 01443 482715 **e** djcunlif@glam.ac.uk
**Andy M Dearden** Sheffield Hallam University **e** A.M.Dearden@shu.ac.uk
**Alan Dix** Lancaster University **t** 07887 743446 **f** 01524 510492 **e** alan@hcibook.com
**Jakub Dostal** The University of St Andrews **t** 01334 463260 **e** jd@cs.st-andrews.ac.uk
**Jonathan Earthy** Lloyd's Register **t** 020 7423 1422 **f** 020 7423 2304 **e** jonathan.earthy@lr.org
**David England** Liverpool John Moores University **t** 0151 231 2271 **f** 0151 207 4594 **e** d.england@livjm.ac.uk
**Phil Gray** University of Glasgow **e** pdg@dcs.gla.ac.uk
**Jennefer Hart** The Open University **t** 01908 652817 **e** jennefer.hart@open.ac.uk
**Ingi Helgason** Edinburgh Napier University **t** 0131 455 2750 **e** i.helgason@napier.ac.uk
**Matt Jones** Swansea University **e** matt.jones@swansea.ac.uk
**John Knight** **e** John.Knight@intiuo.com
**Shaun Lawson** University of Lincoln **e** s.lawson@lincoln.ac.uk
**Linda Little** Northumbria University **e** l.little@northumbria.ac.uk
**Tom McEwan** Edinburgh Napier University **t** 0131 455 2793 **f** 0131 455 2727 **e** t.mcewan@napier.ac.uk
**Barbara McManus** University of Central Lancashire **t** 01772 893288 **f** 01772 892913 **e** bmcmanus@uclan.ac.uk
**Shailey Minocha** The Open University **e** s.minocha@open.ac.uk
**Dianne Murray** **t** 0208 943 3784 **f** 0208 943 3377 **e** dianne@soi.city.ac.uk
**Aaron Quigley** University of St Andrews **t** 01334 461623 **e** aquigley@cs.st-andrews.ac.uk
**Janet Read** University of Central Lancashire **t** 01772 893285 **e** jcread@uclan.ac.uk
**Tony Russell-Rose** UXLabs **t** 0203 166 4444 **e** tgr@uxlabs.co.uk
**Corina Sas** Lancaster University **e** corina@comp.lancs.ac.uk
**Emilia Sobolewska** Edinburgh Napier University **t** 0131 455 2700 **e** e.sobolewska@napier.ac.uk
**Steven Welti** Swansea University
**Adrian Williamson** zonal **t** 01506 485770

### INTERFACES MAGAZINE

**Lynne Coventry** Editor
**Shaun Lawson** My PhD Editor
**Jennefer Hart** Profile Editor
**Shailey Minocha** Reviews Editor
**Fiona Dix** Production Editor

### EDITOR INTERACTING WITH COMPUTERS

**Dianne Murray**

### RELEVANT URLS

British HCI Group: **www.bcs-hci.org.uk**
UsabilityNews: **www.usabilitynews.com**
IWC: search for Interacting with Computers
HCI2011: **www.hci2011.co.uk**
HCI2012: **www.hci2012.org**



*Interfaces* is published quarterly by BCS Interaction (a Specialist Group of the British Computer Society) and is available in print and as download.  Interfaces is produced on a not-for-profit basis by volunteers for the good of the international HCI community.

Interfaces editorial policy is focused on promoting HCI and its community in all facets, representing its diversity and exemplifying its professional values by promoting knowledge, understanding and awareness to the benefit of all and harm to none. Editorial decisions are based on promoting these core values with the Editor being accountable to BCS Interaction Specialist Group and BCS for the content of the magazine. As such the Editor has the right to refuse publication with recourse to BCS Interaction Specialist Group and BCS in cases of arbitration.

The views and opinions expressed in Interfaces are strictly those of the relevant authors attributed to articles and do not necessarily represent those of BCS Interaction Specialist Group, British Computer Society or any associated organisation. Interfaces does not accept responsibility for the views expressed by contributors and unless explicitly stated (where authors are publishing at the behest of an organisation or group), authors are acting in a personal capacity and expressing personal opinions that may or may not represent the views and opinions of any organisation, employer, person or group attributable to them.

 ISSN 1351-119X.