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88 AUTUMN 2011

HCI 2011

Human and digital
interaction combined

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Photographers' credits will be printed if provided.

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As we continue to debate fees – be they tuition, conference or publication, let's not allow that debate to distract from this year's successful HCI conference, illustrated in this issue so wonderfully by David Greathead from PaCT Lab at Northumbria University.

However, I would like to take this opportunity to remind you of our reliance on voluntary contributors and organisers and ask for your continued support in our non-profit activities. As British HCI matures from its first twenty-five years of existence, we need new authors to step forward and highlight their work and discuss the topics of the day in *Interfaces*. We need young blood to step up into the committee roles available this year and drive British HCI forward for the next twenty-five years, and we need you to continue to contribute papers and workshops to the conference. We need you to attend, participate and push the boundaries for British HCI. We are not "CHI Rejects" – we are the future of HCI.

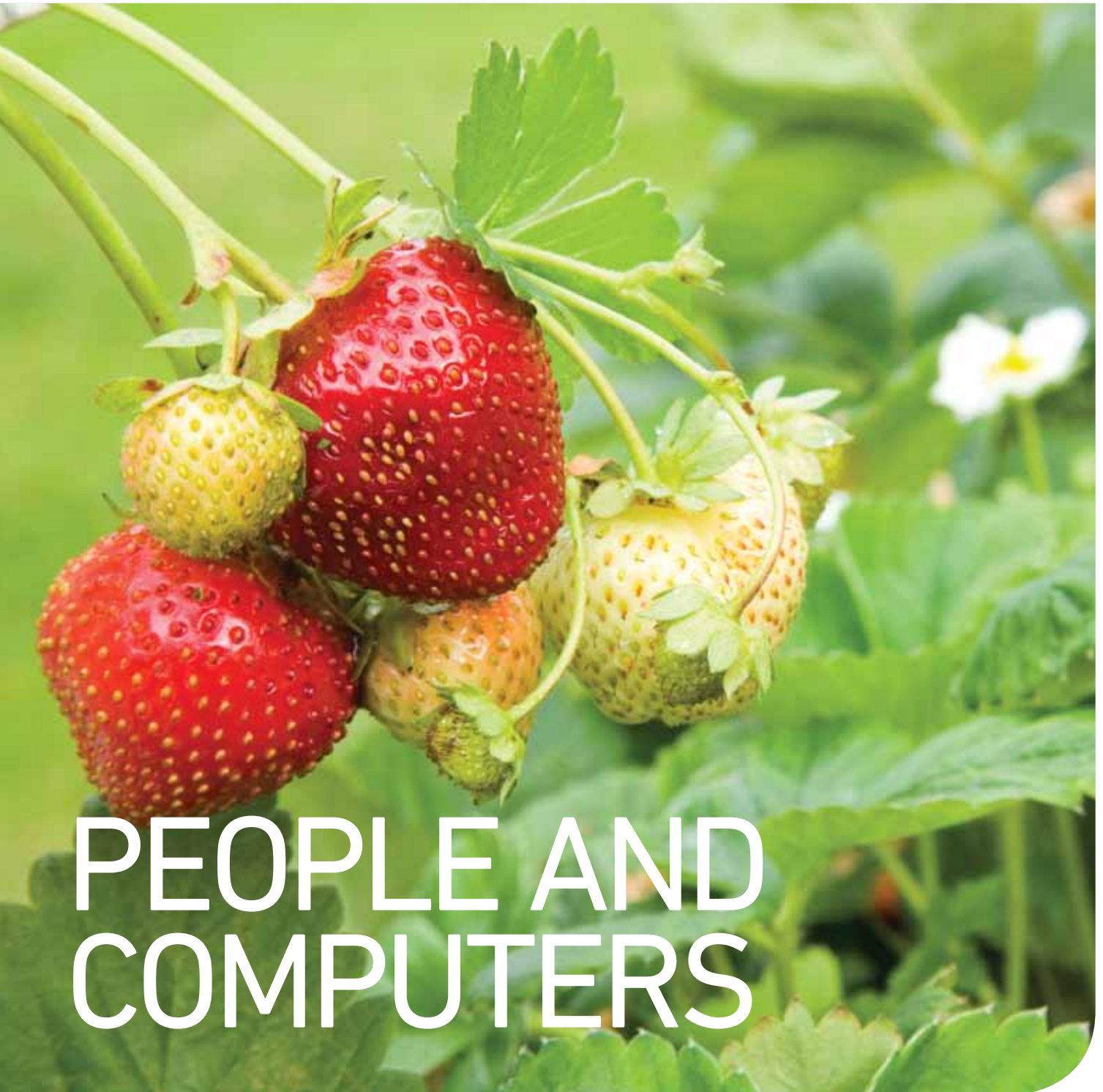
I would like to remind you that *Interfaces* and the conference proceedings are available free online – the knowledge is not just for those who can afford the subscription fee. And finally I would like to acknowledge the contributors to this year's conference. It was great to see so many face-to-face chats, discussions around the interactive artefacts, the posters and the papers, and fewer faces buried in computer screens.

Lynne Coventry

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PEOPLE AND COMPUTERS

For his last view from the chair, **Tom McEwan** reflects on the emerging gaps and future role of the British HCI Conference. We need solid HCI community involvement to secure a successful future.

Gregory Abowd issued the conference with a number of challenges in his closing keynote. He is right, of course, about the changes wrought in our institution since his active participation a decade or so ago, and he made interesting suggestions to redress this (such as giving more of the conference over to sessions to develop

ideas and papers). There is more, though, and perhaps once I step down, I'll have the time to write these up more extensively.

Are we nothing more than CHI rejects?

One canard that does need contextualised is the idea of HCI 2011, and its successors, being in some way a place for 'CHI

rejects'. As I suggested in Gregory's Q&A, the evidence much more suggests that 'CHI prototypes' are run up our flagpole: 'Put it into British HCI, get the reviewers' comments and then write it up properly for CHI'.

Of course we, INTERACT, NORDICHI, CHI, OZCHI, DIS, ECCE and so on, receive

our fair share of papers knocked back from elsewhere, but anyone who has ever reviewed for all these fine conferences will know that a higher rejection rate does not necessarily mean a higher quality programme; it can simply mean more incompetent submissions.

Shrinking and spreading

In terms of conference size and types of participant, 2002 in London was our last conference to attract getting on for 400 participants. It was also the last one which seemed to involve a three line whip for the UK's leading researchers in HCI, with every year since featuring notable, if temporary, absences. One reason may be that each programme committee simply double-blind rejected their papers. Perhaps this had happened before, and they turned up anyway. Alternatively they have options: the last decade has, rather like my strawberry patch, seen relentless runners spreading from the workshops at the main conferences, to create new conferences, often narrower in focus (like MobileHCI) while attracting greater numbers and producing healthy fruit of their own.

Another feature of the last decade has been the availability of cheap flights, bringing the Lands of Oz and the USA into consideration. At a time when 'internationally recognised' is not enough, and 'internationally leading' is where it's at, then, of course, distance is no option for the sleep-deprived HCI academic. At the same time we have seen a clear growth in international participation in our conference, bringing different yet equivalent values to what was once 'British HCI'. A few years ago the majority of our papers began to be from overseas and this has been sustained. Whether it is sustainable in a carbon-credit era is a moot point, and perhaps the conference will need to offer remote participation, implementing all those fine Presence Research results.

Support the future

Two other incremental losses in our delegate lists disturb me more. Once, supervisors always accompanied students presenting their first paper. Increasingly I meet nervous presenters who face their first ordeal alone. Plainly budgets are the cause of this, but those wishing to improve PhD completion rates might reprioritise to ensure supervisors can introduce students around the community, point them at sessions and interpret the significance of professorial utterances. The growing gulf with industry also has frustrated me. Again it's financial – we don't articulate clearly enough the business value of attendance. I haven't looked at the stats yet, but I

People and Computers has always been the HCI conference about people rather than technology or methods. It's a conference of equals, where important people will talk to you without looking over your shoulder for someone better!



certainly met more industry people this year than previously, a testament to the persuasion of Linda and Lynne, and I hope Birmingham will continue this.

People and Computers has always been the HCI conference about people rather than technology or methods. It's

a conference of equals, where important people will talk to you without looking over your shoulder for someone better! It's also a broad conference making links across the various silos of HCI, and bringing a rich picture of engagement with the user to those outside the field.



Linda Little, Northumbria University and PaCT Lab, takes a reflective look back over the 2011 conference in Newcastle, and shares her experiences as co-chair.

Phew! The conference is over and now its time to sit back and reflect on the whole process. Let's start with the act of volunteering Northumbria as a host institution back in 2008. At the time I thought the smile on David England's face was one of encouragement, but later realised it was a cynical one of 'fool'.

Time passed quickly and 2010 came around all too soon – the planning stage had arrived and, hey ho, lucky for me Lynne Coventry had joined PaCT. Now those who know me will tell you I have a canny knack of subtly encouraging people to volunteer for extra work by convincing them how fantastic it will be! So Lynne agreed to co-chair!

Finding funding

I hope documenting the process will be insightful for future hosts. Firstly, the major thing to note is the budget (or lack of it). The BCS have provided a float to get started but you have to give this back after the conference has finished. This is crucial for paying the initial deposits as registration income comes surprisingly late. Gaining sponsorship proved very difficult and the current recession made it even harder. We were lucky in receiving major funding from Microsoft Research Ltd and NCR. Publishers Springer and Wiley kindly donated books, and Tracksys paid to demonstrate their equipment. My advice for anyone thinking of hosting the

conference is to start looking for sponsors now.

Meetings and reviews

Secondly, the dreaded meetings! Due to limited funds an executive decision was made to minimise travel for Programme Committee members, and also to have a 'local' chair on every submission category. Having a local chair was not an issue as the HCI community at Northumbria and Newcastle Universities is growing rapidly. Overall, meetings and the exchange of information between all members worked well.

As many of you are aware, EasyChair was adopted again due to cost! OK, EasyChair may not be the best, but it does the job for a conference this size ... and I can always hire out Lynne, who eventually conquered it. Just remember you have to put in all your reviewers from scratch, even if they are already EasyChair users, and make sure you set them up as a programme committee member and not as a subreviewer.

Workshop programme

The two days of workshops ran well and the feedback from delegates was very positive. Delegates liked the interactive nature of the workshops and the opportunity to explore ideas and have discussions with people interested in the same area. Some delegates liked the

discussion with people who were not like-minded, and who brought a different perspective to the discussions which led to new ideas being formed.

Golden opportunities

The main conference was opened by Abigail Sellen from Microsoft Research Ltd, who gave an excellent talk entitled 'The future looking back'. Overall the rest of the conference and sessions ran well. Many delegates commented on how fantastic the poster session was, how the set-up and number of posters (around 30) created a golden opportunity to meet people and discuss ideas. The poster session included poster, doctoral consortium and work-in-progress submissions. Delegates had the opportunity to find out more from the authors over a three-hour period where they could have drinks and nibbles, with plenty of space to mingle and sit and chat. Unlike other conferences, where posters are just background, creating a specific time for interaction around the posters was well received by presenters and delegates.

Patrick Olivier and his team in the Culture Lab and Elizabeth Churchill made the 'Interactive Experience' session just that, and need to be commended. Again, a specific time to explore the interactive demonstrations meant more focus being given to this activity rather than just being a time filler during coffee breaks.

Revisiting the social experience

The social events were great and delegates enjoyed the history walk and talk, and the pub visits. While the Discovery Museum provided an aesthetic and interesting backdrop to the conference dinner, and Tom McEwan's motley crew were applauded for their renditions of songs at the conference meal, the cost-benefits of hosting a dinner at a venue such as a museum might need more reflection. This is the most costly part of the conference now. As the social sessions at the end of the workshops, and the poster session, worked well, serving to facilitate relaxation and continuing discussions arising from the presentations throughout the day, maybe it's time to rethink the social experience and keep the cost of the conference manageable. One thing that helped to make the conference a success was the social space that acted as the hub for the conference, and also the fact that the sun was shining (well, most days).

Startled reaction

Gregory Abowd closed the conference talking about 'Computing where it matters: Reflections on the relevance of HCI research'. His closing comment caused rather a startled reaction as he reflected that the British HCI conference should aspire to be more than CHI rejects. Rather than demonstrate our disapproval, let's take the time to think about how British HCI can continue to be an inspirational venue for old and new, academia and industry alike.

Acknowledgments

I would like to thank everyone who helped make the conference successful: all the Programme Committee members; the student volunteers (who were all fantastic); the School of Life Sciences Marketing and Admin team; the sponsors; the delegates (without you there would not be a conference); PaCT people; Sally and her team in the Student Union; and Lynne for agreeing to act as co-chair.

The British HCI community is an incredible, friendly group and it was nice to hear comments throughout the conference that reflected this, from national and international delegates alike. So, finally, would I volunteer Northumbria (or PaCT) again? Yes, I would, but next time, before I put my hand up, I'd better check that my colleagues have not mysteriously booked their holidays for then. On second thoughts it might be a good time to let them know we are hosting the Symposium on Usable Privacy and Security (SOUPS) in 2013.

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Let's take the time to think about how British HCI can continue to be an inspirational venue for old and new, academia and industry alike.



CURIOSITY AND INTERACTION



In the HCI 2011 Best Long Paper, **Rob Tieben, Tilde Bekker and Ben Schouten**, Eindhoven University of Technology, research the factors that invoke our curiosity enough to explore interaction in public places.

Introduction

Imagine that you leave the subway, on your way to the exit of the station. When you reach the escalator, you see that the staircase resembles one big piano. Curious, you climb the first step, and hear a musical note. Climbing onward, you play the piano with every step you take.

The Fun Theory's Piano Stairs [1], as described in the above scenario, create a novel situation in which people are triggered to take the stairs instead of the escalator. The big piano is clearly out of place in the subway station, makes people curious and invites them to explore. This curiosity is a strong motivator for behaviour, and novelty is just one of the evokers of curiosity. In this article, we present our design-research process on eliciting curiosity in public spaces through an interactive system.

Playful interaction and curiosity

In Eindhoven's Playful Interaction research group, we are interested in how we can use interactive systems to change behaviour in a playful manner. In one of our projects, we focus on teenagers in secondary and vocational schools and ask a number of questions: can we somehow draw the attention of these teenagers, and let them act in a different way, while they walk through the corridor of their school?

Can we invite them to briefly interact with a system, in a 'walk-through-and-use' situation? Can we use curiosity to trigger this behaviour?

Curiosity, the *strong intrinsic desire* living beings have to *know or learn*, is commonly used to draw attention to stories, products and services. Advertisements, movies and games: they all deploy curiosity in order to *connect* with the audience. However, what we find lacking are design recommendations for evoking curiosity in encounters with interactive systems. How can we make people, teenagers in our case, who encounter an interactive system

curious, and how can we elicit explorative behaviour from them?

Evoking curiosity through five principles

Curiosity is one of the driving factors of human behaviour. Berlyne [2] defined two dimensions of curiosity (see Fig. 1): on one axis *sensory curiosity*, such as the desire for novel sensations and stimuli, and *cognitive curiosity*, the desire for knowledge. The other dimension ranged from *diversive curiosity* – actively seeking varied sources of novelty and challenge – to *specific curiosity* – actively seeking depth in one's knowledge and experience with a particular stimulus or activity.

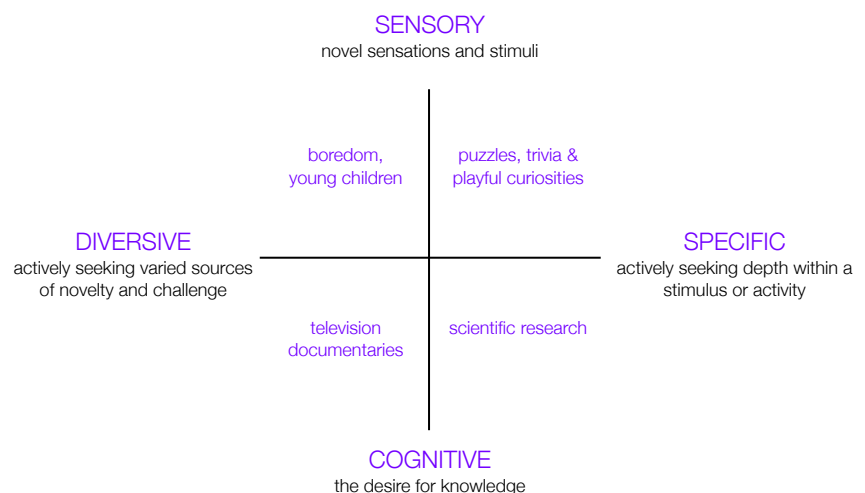


Figure 1 Four types of curiosity (inspired by Berlyne [2] and Loewenstein [3]).

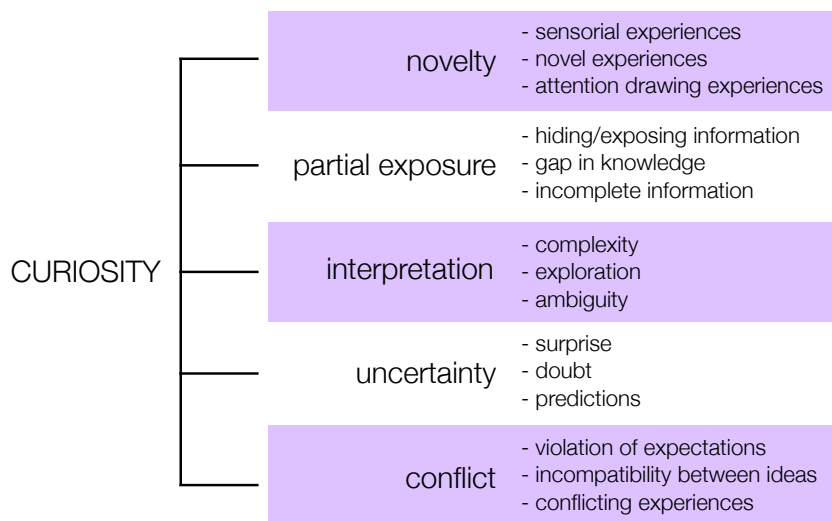


Figure 2 The five principles of curiosity, with examples (inspired by Berlyne [2] and Van Der Vorst [4]).

Berlyne also states that curiosity is induced by *novelty*, *complexity*, *uncertainty* and *conflict*. Loewenstein [3] clarified that curiosity reflects a human tendency to *make sense of the world*, and that we are curious about things that are *unexpected* or that we *cannot explain*. Van Der Vorst [4] mainly adds *partial exposure* (to information and/or stimuli) to the list of evokers, with a striptease as best-known example. Combining literature and our own explorations, we can define five main principles for evoking curiosity: *novelty*,

partial exposure, *complexity*, *uncertainty*, and *conflict* (see Fig. 2).

Research through design

We used a design-research approach to explore, develop and evaluate different ways to design for curiosity. This was done in an iterative, qualitative and explorative way: through iterations of design and evaluation.

Through iterations of design explorations, we studied the curiosity evoking principles in more detail; gaining

more understanding of how we could use those principles in interactive systems.

In order to facilitate this iterative process, we developed a platform: an interactive prototype in which various explorations could quickly be implemented and evaluated. We decided to use sound as medium to elicit curiosity: the way in which students walked through a corridor, and the actions they performed, would trigger various sound samples from prototypes on the wall. We developed six prototypes, called *speakers*, which contained a webcam and a loudspeaker. Interaction was provided using Max/MSP; input from the webcams (using, for example, motion analysis) allowed us to detect the presence of passers-by, their distance, and specific actions they made (e.g. waving). This was translated in sound output, such as the activation of music samples, creating an interactive environment that responded to all people walking through the corridor (see Fig. 3).

The speakers were deployed in corridors in two different schools, allowing in situ evaluations with students encountering our system. In a series of iterations, we tried different combinations of input, mapping and sound output, step by step increasing our understanding of the curiosity principles, and the best way to implement them in this context.



Figure 3 Curious-action speakers, interactive speakers that respond to passers-by with sound output.



Evaluating 'curiosity in situ'

We developed five *interaction scenarios*, mappings of the actions of passers-by, translated into sound output from the speakers. We expected each of those scenarios to influence the way students walked through the corridor. To trigger this behaviour, we used the five curiosity principles, with each scenario focusing on a specific principle.

Three of these scenarios, focusing on novelty, uncertainty and conflict, are described below, illustrated with an example of a typical user interaction.

Out-of-context animal sounds

An 'out-of-context' situation was created, by playing the background noises from a farm (Fig. 4). When a student got close to a speaker, loud noises of scared animals were played.

Most of the students (~70%) stopped to explore the system on the first encounter: they briefly activated several speakers, hearing different animal sounds. After this short exploration they walked on. On a next encounter most people walked by, ignoring the system.

Distorted sequences

In this scenario we altered sequences, and thus distorted the expectations of the passers-by. Each speaker played a number; speaker one would say "One!", speaker two "Two", and so on (Fig. 5). By disabling one of the last speakers, the expectation of the users was distorted: they would expect a "Six!", but the system

would not respond at all. The results of this evaluation were unexpected: multiple passers-by started counting aloud with the system, even on first encounters, and were visually and verbally surprised by the lack of reaction from the silent speakers. Some users (~20%) walked back and started to wave in front of the speaker. Some users even started to talk to the speaker and their peers, usually ending with an 'it must be broken'.

Cognitive distortion

We created a conflicting situation by placing coloured footsteps on the floor in the corridor. Students passing a speaker would hear the colour they walked on, e.g. "Red!" while walking on the red footsteps (Fig. 6). The last speaker always responded with the wrong colour, creating a mismatch between the real situation and the output from the system.

In this evaluation, we observed three types of behaviour: Most of the people (~60%) almost ignored the system, just looking at the speakers while crossing the corridor. Some of the others (~20%) commented on the system: 'It's somehow detecting which colours we walk on – but it isn't correct all the time'. The remainder of the passers-by started to explore how the system worked: they tried different ways of 'walking by', in order to analyse how the system measured things.

We have presented three interaction scenarios, which all elicited curiosity and explorative behaviour in different ways and with different levels of success. For our goal, target group and context, three principles appeared to be the most powerful: novelty, complexity and uncertainty. Other principles would probably be suitable for other target groups and contexts. In addition, the type

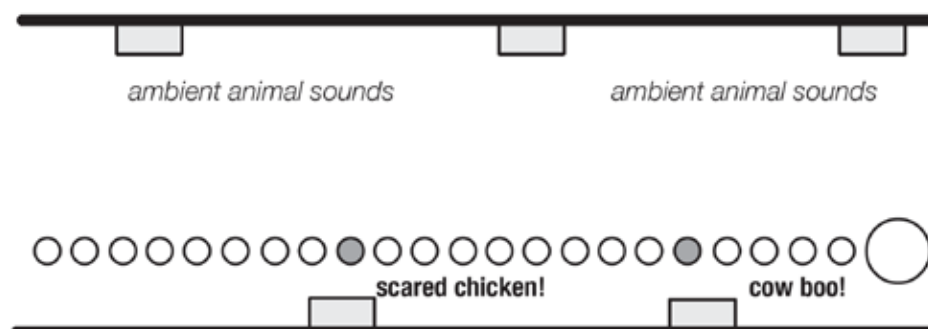


Figure 4 Speakers produce background sounds related to a farm. If a student gets close to a speaker, the sound of a scared animal is played.

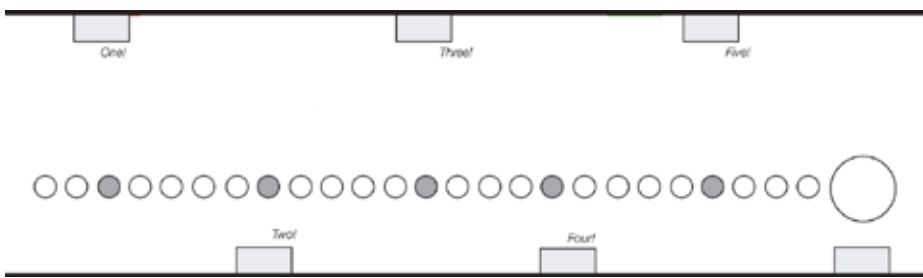


Figure 5 Walking through the corridor results in a sequence of numbers: 'One!' from the first speaker, 'Two!' from the second, and so on. One of the last speakers is quiet, not responding to the passer-by at all.

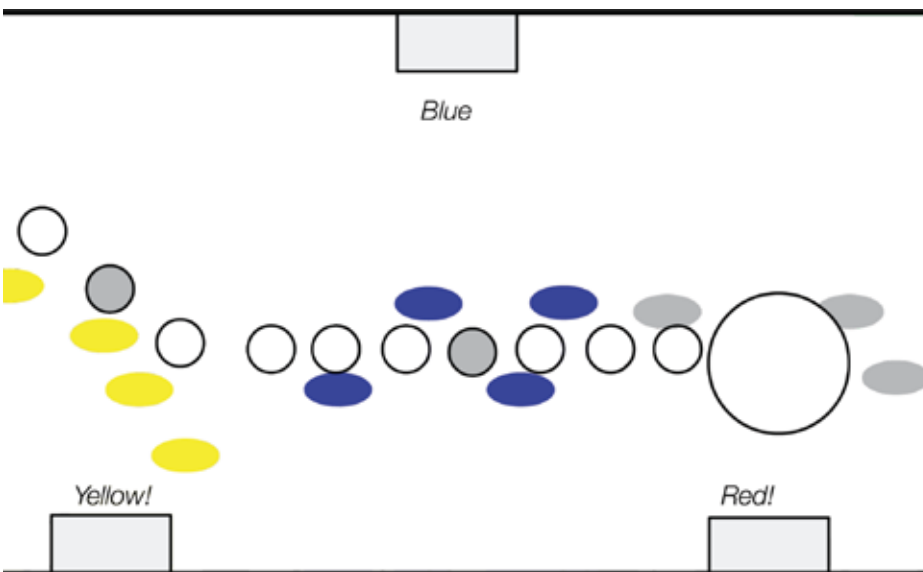


Figure 6 Footsteps create coloured areas in the corridor. When a student passed a speaker, the corresponding colour would be played. The last speaker announced an incorrect colour.

of explorative behaviour that one wants to elicit influences the choice of curiosity principles.

Curiosity influence factors

In addition to the principles that evoke curiosity, we also encountered several additional factors that turned out to influence the curiosity of passers-by.

User

The response of the user, the person who encounters the interactive system, is influenced by several factors:

- **user traits and characteristics:** some people are simply more curious and open to new experiences than others; some are shy, others proudly try out everything they see, etc.
- **curiosity openness:** if a person is running to catch a train, or talking on the telephone, then the chance that this person becomes curious and starts to explore is very small.
- **expectation:** the expectation of the person influences his/her actions as well. If the person knows that there is a speaker responding to movement, he/she will act differently compared

to a user who is unaware of the speaker.

Context

The context, both the location and the current status, influence the elicited curiosity for a system. For example, a crowded train station affords totally different behaviour than a quiet alley.

We identified two factors:

- **physical characteristics:** the location, and the physical characteristics of this location, influence the type of passers-by, the way they walk, their mindset, and so on. A school is different from a shopping mall, and a corridor in a school is different from a staircase.
- **social environment and conditions:** the current social circumstances influence the way people react to the system. In our school, if a group of people was watching the corridor, passers-by behaved totally differently than in the early, quiet mornings.

Memory

It is important to realise that curiosity, and the experience with the system, always

creates a memory. If this memory is negative (e.g. the user is highly confused or annoyed by the system), then this will influence the behaviour on the next encounter.

Conclusion

If we return to the Piano Stairs example, we can recognise the curiosity principles: the piano stairs do not fit in the context of the station, creating curiosity through novelty. Passers-by start to interact, trying to understand what the piano does (partial exposure and complexity). Curiosity is, of course, not the only attraction of the system: the playfulness, the enjoyment, and the social interaction are other influential factors. Over time, one can imagine that the novelty of the stairs would wear off; curiosity principles such as uncertainty could be used to re-evoke the curiosity, for instance by varying the sounds of each stair in a random way (uncertainty leading to new complexity).

In this article, we presented an explorative study on how to design for curiosity through interactive systems. The curiosity principles and influencing factors we discussed appear to have a powerful influence on people's behaviour, depending on the specific application and context. Combining these principles, and fine-tuning them for a specific target group, can lead to even more powerful results. The combination of novelty, complexity and uncertainty, for example, creates a promising, repetitive stimulant for exploration. In future work we will examine how to apply curiosity and other playful principles in different ways, in order to persuade school youth to change their behaviour through play.

PUBLICATION DETAILS

Tieben, R., Bekker, M.M., and Schouten, B.A.M. (2011). Curiosity and Interaction: Making People Curious Through Interactive Systems. In *Proceedings of HCI 2011*, Newcastle, United Kingdom, 2011.

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WEIGHT LOSS BLOGGING

Anne-Marie Oostveen, University of Oxford, writer of the HCI 2011 Best Short Paper, studies the beneficial effects of weight loss blogging and asks whether the Internet can empower stigmatised groups.

Research shows that obesity has a social stigma in western society which leads to discriminatory attitudes towards overweight and obese people. In real life overweight people are in Goffman's (1968) terms '*discredited*' individuals (e.g. their differentness is evident on the spot). On the Internet, however, their weight problems are not immediately perceivable by those they communicate with: in this context they have become *discreditable* individuals who can actively manage information about their overweight by either telling or not telling.

Despite the offline reluctance of individuals to talk openly about weight issues (Maitland & Chalmers, 2008), there is an abundance of personal weblogs about weight loss with remarkably open accounts of everything to do with overweight. While the widespread use of personal blogs offers opportunities for interaction and communication it also raises privacy concerns. In my research I examined the extent of online disclosure among adult weight loss bloggers. What motivates people to disclose information which has a social stigma offline? Can the internet be regarded as an empowering technology for stigmatised groups? To address these questions, I conducted a survey among 79 bloggers with an active

personal weight loss blog written in English. An online questionnaire with both open-ended and closed questions captured the extent of personal information disclosure, as well as measures of feelings of stigma, privacy attitudes and privacy behaviour.

Obesity and stigma

Worldwide 1.5 billion adults are overweight, of whom 500 million are obese (WHO, 2011). Despite the growing obesity epidemic, overweight persons are still labelled as deviating from the norm. Obese individuals are stigmatised and face prejudice and discrimination (Puhl & Heuer, 2009). Weight bias is translated into inequities in employment settings, health-care facilities and educational institutions. Puhl and Heuer's study confirms what Goffman noted in the 1960s: people tend to impute a wide range of imperfections on the basis of the original one, such as the stereotypes that overweight and obese persons are lazy, unmotivated, lacking in self-discipline, less competent, non-compliant, and sloppy. When other people view obese persons as less intelligent or more incompetent, the result may be strained and uncomfortable social interactions, more constricted social networks, a compromised quality

of life, low self-esteem and depressive symptoms. Stigma can have an enormous impact on people's lives (Link & Phelan, 2006).

Little anonymity

The participants (85% females) were between 21 and 57 years old. The oldest blog dates from June 2000 while the most recent blog was started in July 2010. All the bloggers allow others to write comments on their blogs. Bloggers are forthcoming with both personally identifiable information and non-personally identifiable data, only a minority post fully anonymously and most bloggers will be identifiable when several pieces of information are combined.

Most bloggers (72%) consider the information they provide 'somewhat' to 'extremely' private. Nearly a third of the respondents indicate that the level and sensitivity of what they reveal on their blog have increased over time:

The more I blog, the more I tend to reveal about my weight loss and eating habits. I feel as though the people that read my blog know a side of me that many of my friends and family don't.

The more blog followers I get and the more personally I interact with them, the more comfortable I feel. I find myself opening up even more once I get to know most of these people on a personal level.

Others (15%), however, decide to disclose less information when the blog becomes more popular:

I started out anonymously, so I wrote openly and honestly – there wasn't much traffic and very few fellow weight loss bloggers, so it was an ideal forum. Nine years later traffic has increased hugely and I'm completely public so cannot be as open as I once was, now that mother and landlord read it. Also being 9 years older and a little wiser, I don't feel the same urge to blurt out everything and want to claw back some privacy.

The negative effects of posting rather private information online (misuse) are felt by a fifth of the bloggers. Still, 95% of the bloggers are not concerned that their blog posts will be available for a long time.

Feelings of stigmatisation

A large number of the respondents experience feelings of stigma related to their obesity. The indicators to measure stigma among the respondents are based on work by Handler and Hollingsworth (1969). First of all, about half of the respondents answered that they (sometimes) feel embarrassed or uncomfortable when they are with friends or other people who are not overweight:

It is hard to be around others who don't have to watch what they eat. I often feel inadequate and fatter than I am.

People feel they are not pretty, they feel disappointed in themselves or they feel awkward, self-conscious or envious around others. They fear that when others look at them they will 'only see the fat'. Still, some feel they are not defined by their physical body or are no longer overweight and therefore don't feel embarrassed any more:

I tend to feel hyper-aware of my weight when around others. Not so much anymore, but when I was over 300 pounds.

Secondly, when asked how the bloggers think people in our society feel about overweight and obese people, 75% of the respondents answered that people

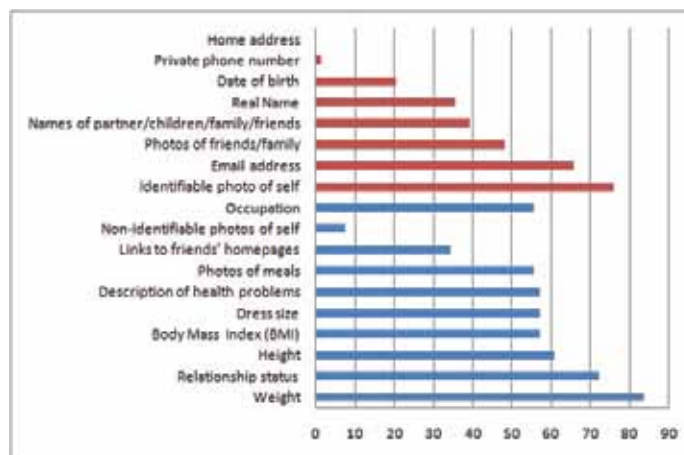


Figure 1
Information posted on weight loss blogs (N = 79, red bars = PII, blue bars = non-PII).

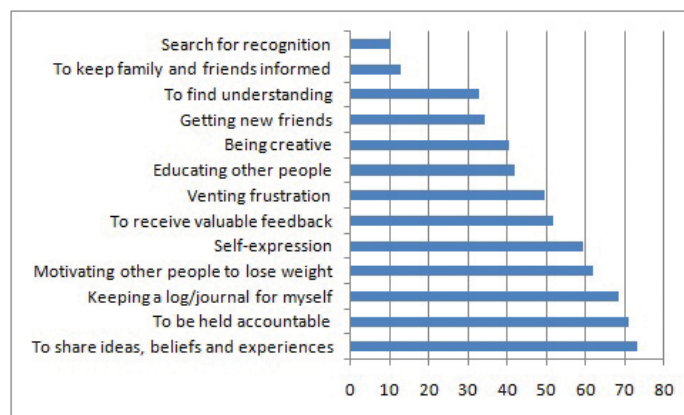


Figure 2
Motivations for blogging about weight loss (N = 79).

are 'fairly' to 'very' hostile, while 20% think people are indifferent. Only 5% of the bloggers feel that people are fairly understanding. Another indication of stigma is the problems people encounter due to their overweight. The bloggers indicate that they have experienced *some* weight-related problems in health care settings (14%), educational settings (21%) and employment settings (30%) but *a lot* of weight-related problems in interpersonal relationships (75%).

Motivations for weight loss blogging

Reasons for online disclosure are to share ideas, beliefs or experiences, and to be held accountable. Keeping a log for oneself provides a means to look back at accomplishments:

After a while it became a log of my success, failures and proof of perseverance. If I was having a rough time, I could see right in front of me what I had accomplished. Going back to read posts from when I was in a more positive mindset was often enough to bring me out of a negative one. It's difficult to 'argue' with yourself.

The community aspect of blogging turns out to be very important. Bloggers find

recognition and understanding from likeminded people:

Understanding from those who identified with what I was going through was key to dusting of my knees if I fell.

They receive valuable feedback and supportive comments:

It truly does make a difference in moving forward when you hit inevitable bumps along the way. Roadblocks are an inevitable part of it and to have people cheer you on is incredibly motivating.

Goffman points out that people need 'sympathetic others'. Obvious sympathetic others are of course those who share the same stigma. These people have had the same experiences and are ready 'to share with him the feeling that he is human and "essentially" normal in spite of appearances and in spite of his own self-doubt' (Goffman, 1963: 31). This moral support and acceptance is critical for someone's happiness and well-being. As one respondent points out:

It is easier to live a life of health, wellness and weight loss when



surrounded by a community of like-minded people. People in my 'real life' don't necessarily understand or care all that I have to say about my weight loss efforts.

Making social connections is another important function of writing and reading weight loss blogs:

I met hundreds of people who identify with what I was experiencing, which was not readily available in my real life. Consequently I have made some best friends who I have gotten to know in 'real' life.

The community aspect is clearly a two-way street. Not only do bloggers seek support, they also feel inspired when they can help others by providing feedback, offering motivation and educating them.

I knew my life would be different if I lost the weight, but the degree to how much it has, and the joy it brings, is enough for me to encourage others to see that it is possible and I want to share that with as many people as possible.

Our survey shows that writing about weight loss on a blog has many positive consequences. It makes people feel proud, in control and better about themselves. However, there is a distinction between people who experience high or medium levels of stigma and those who experience no stigma. Those who feel stigmatised more often regret having revealed certain things on their blog. They also feel considerably more often that the information they share is sometimes too emotional and they experience more embarrassment and vulnerability. However, blogging helps them to improve their self-esteem twice as often as for those who don't feel stigmatised. The importance of having positive self-esteem cannot be underestimated: to develop self-esteem is to widen the capacity to be happy (Branden, 1990).

Conclusions

Weight loss blogs empower many of their writers to use their voice to gain more self-confidence and become more open about stigmatised issues. Overall, weight loss blogging seems to bring more positives than negatives for our respondents. Instead of 'careless relinquishment of

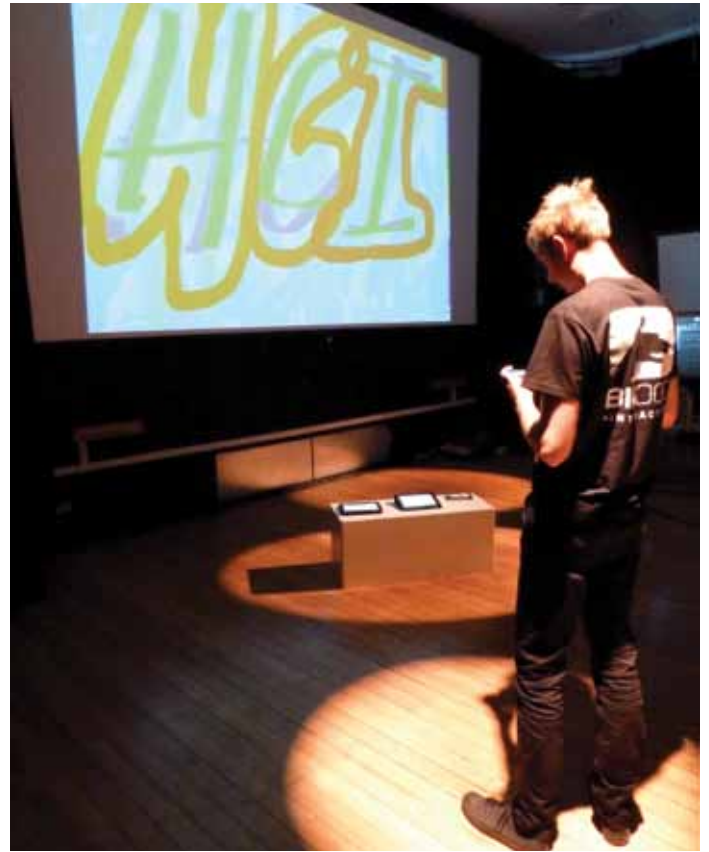
privacy' by individuals, it seems to be more a case of what Koskela (2004) calls 'empowering exhibitionism', whereby the bloggers receive benefits due to their voluntary disclosure of personal information. They make social connections and build up a community of likeminded people which helps them in their struggle to lose their excess weight. Bloggers seek, as well as provide support, advice and experiential knowledge, and due to the 24 hour availability of the Internet they have access as and when needed.

Among the respondents who had feelings of stigma (on either indicator) there was decidedly a notion of gaining more self-esteem through blogging about weight loss. Finding a strong online community with sympathetic others who give moral support, feedback and reinforcement not only boosts self-esteem and feelings of happiness, but will also help weight loss bloggers reach their goal. Studies have shown that those who have a social support system in place lose more weight than those who do not. In this sense the internet can be utilised as a technology for the improvement of well-being.

In our follow-up study where we will interview bloggers and analyse their blogs we will examine in further detail whether these gains are constrained to the online context or whether they also have an impact in the offline interpersonal context.

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GRAFFITO MASHUP

Who says you can't teach old dogs new tricks? Conference attendees old and new love to mash it up on the big screen and **Jennifer Sheridan** and **Nick Bryan-Kinns** of BigDog Interactive show them how. Graffito Mashup was voted Best Interactive Experience at HCI 2011.

Inspired by the underground 80s hip hop scene, Graffito Mashup and its predecessor Graffito pay homage to guerrilla street art and utilise it to create an interactive celebration of pop culture on a massive scale. These apps hand over the VJ's canvas to the hips, fingers, hands and creative minds of the audience.

This is an experiment in massive crowd-made graffiti and opens up a whole new way to communicate with the world. Anyone with an iPhone, iPad or iPod Touch can scribble graffiti on the screen with anyone, anywhere in the world all at the same time. It's the world's first global graffiti jam! Graffito Mashup is the world's first multi-participant iPhone, iPad and iPod Touch App that connects people across the world through social media and allows them to dynamically mashup, create and remix digital images with anyone, anywhere in the world at the same time. You can create your own private wall and invite your Facebook friends or join the global Graffito Mashup crowd. You can search through millions of images and drop them on the screen, then add your very own artistic graffiti to the live creation. You can draw digital graffiti in real time with your finger, or by shaking your mobile phone, and can pull in

and mashup images from online sources such as Flickr. Images slowly fade out over a minute, encouraging quick, lightweight contributions, providing continuous interaction opportunities. It's the world's first global graffiti mashup!

Presentation history

HCI 2011 was the first international showing of Graffito Mashup – a richer and more socially connected version of our previous App called Graffito – and to an audience who knew their interaction! Graffito Mashup was live at the Digital Shoreditch urban design festival in May with over 10,000 people. In May this year it was announced as one of the Wildcard winners of the IC tomorrow Innovation Contest!

The previous version Graffito was displayed at the Vintage@Goodwood Festival in August last year with approximately 15,000 people per day over three days taking part in the experience. It was also an interactive installation at Tent Digital, Tent London, London Design Festival. Earlier this year CHI attendees received an Interactive Performance at CHI 2011 in Vancouver.

It has also been put to very practical use with a different set of users. Three

hundred children (between the ages of four and ten) took part in a mashup at Ivydale Primary School, London as part of The Big Draw Campaign 2010 to encourage more children to explore their artistic side and get drawing.

HCI 2011 mashed it up

HCI 2011 attendees were able to download Graffito Mashup on their personal mobile device in advance of the conference as well as during the conference. A special in-App wall was created for HCI 2011 so that during the conference, attendees could access the wall and create and mashup graffiti and images on the wall in realtime with other people at the conference as well as people across the world. All of the drawing activity was shown in realtime on large-screen display at the conference. Many returned back to the main conference area raving about the app, and even the student volunteers who did not have an HCI background went away with the new app on their phone.

Explore for yourself

Graffito Mashup videos can be seen on YouTube and the app can be downloaded from iTunes and App Store.
graffitomashup.bigdoginteractive.com



MAKING UP YOUR MIND?

Matt Horton, of the Child Computer Interaction Group, University of Central Lancashire, looks at the reliability of children's survey responses, and suggests that adults and children are not so different.

The Reliability of Children's survey Responses' won Best Poster at British HCI 2011 in Newcastle. The purpose of the study was to examine children's responses over time to help us to understand how consistent the answers given may be, and therefore how useful.

The children (aged six and seven) were given a pictorial and written version of the same questionnaire, one week apart, where the children were asked to choose which of the items, from a predefined list, they had within their homes. It was a deliberate decision at this stage to leave the issues of ownership to one side as this had been looked at previously by the authors.

Unreliable responses?

The results showed that across both questionnaires 53% of the children had less than half the same technologies. The mean overall was 40% for all 19 children involved in the study but even more concerning was that two of the children had no answers the same for both questionnaires, and four others had less than 15% of their answers the same.

We do acknowledge the possibility that in the week between the questionnaires there could have been a mass technology exchange in the majority of the households in question (this was not Christmas week for all you who are wondering!) but in reality it is extremely unlikely. So in essence we were left with two

substantially different sets of results by the same children who were asked the same question. Not one child in this study gave identical answers in the two questionnaires. Does this bring into question the results of many studies done with children that use prior knowledge, ownership, or prior use as a baseline to question if children are capable of such differing answers? It certainly brings into question the reliability of children's responses.

This work is part of the author's PhD work, which has included further studies highlighting issues including children's understanding of questions being asked, whether children do satisfice, their understanding of ownership in relation to

their own possessions or the possessions of others and further issues in the use of survey methods with children.

Voting processes

This brings us nicely on to HCI 2011.

This year, as many of you will be aware, the voting for awards at the conference was done differently, with the delegates being given the chance to vote for their favourite paper, poster and interactive experience. This was done by providing the delegates with a paper voting slip (which one might call a short survey) where they wrote down the name and author of their favourite in each category. Focusing on the poster session, as this relates to the above work that was presented, I am going to look at the process and some of the similarities with the research I am currently doing.

The 'voting slip' allowed delegates to vote for their favourite poster but did not specify any criteria as to what the 'best' poster entailed. There is no way to interpret whether the poster was voted best on the look of it, the content, the academic rigour or the presentation of the poster. Without asking the delegates more detailed questions these questions cannot be answered. If the poster presentation had been done by one of my co-authors, Janet Read and Gavin Sim, would this have had an effect on the result? Janet might have been seen as an expert in the area and therefore have received more votes; alternatively she might have received fewer votes, as delegates may wish to give this award to junior researchers.

Go with the gut

I'd love to say that it was my great presentation skills that were the major factor in winning this award but truthfully I do not know. I know there will be a lot of people thinking it was more to do with my shameless touting for votes during the actual poster session. Maybe this is true, which then asks the question, are adults subject to satisficing the same way that children are? Did a combination of free alcohol and a nice setting make the delegates more likely to please? This is all speculation. I assure you I did receive very positive feedback to the research I presented, which does give me some hope that the academic value of the paper was taken into account, but I guess to know for sure we would have to ask delegates exactly why they did vote the way they did. It is tempting to add a small survey to this article to find out why, but I will resist.

Personally I think the voting system used this year was extremely successful. It allowed the delegates to feel more involved in the process and seemed to stimulate conversation during the

I have a suspicion that under the right circumstances adults may be subject to outside influences just as easily as children; are we that different – probably not!



breaks and over a few beers in the evening. Maybe in this situation it is best not to tie people down with criteria that could influence the way they vote and let them simply 'go with their gut'. I have a suspicion that under the right circumstances adults may be subject to outside influences just as easily as children; are we that different – probably not!

Interestingly I asked Janet Read why she voted for the poster she did (which was not mine unfortunately). Janet's criteria for voting were that the poster presented a novel idea and that it was not cluttered. Janet was less concerned with the academic quality of the work. From comments made by other voters it was clear that a mixture of concept, presenter, poster design and academic vigour were being used as assessment criteria. The unfortunate thing was that so few people took part in the voting process – a surprising outcome for a discipline that currently prides itself on the involvement of its users.

It will be interesting to see how the voting is done next year in Birmingham but I look forward to seeing you all there!



Matt Horton is a Research Associate with the Child Computer Interaction Group at the University of Central Lancashire. Matt is webmaster for the IFIP SIG on Children and HCI, the ChiCI Group and was co-founder of the international Fun and Games conference. Matt is currently undertaking a PhD looking at the validity and reliability of children's self-reporting of technology use.

COMING OF AGE



Ryan Kelly, in the second year of his PhD research at the University of Bath, offers a student's perspective of HCI 2011.

British HCI 2011 was my first experience of attending a major HCI conference. As an early career researcher (I'm currently a second year PhD student) this is likewise my first experience of post-conference reflection. Since this chance only comes along once, I thought I might reflect upon my general first-time impressions of the conference, as well as speak to the benefits early career researchers like myself can attain from attending British HCI in the future.

So, what were my general impressions? I had heard one or two curmudgeonly opinions about the conference before attending, but I'm pleased to report that these attitudes were not reflected in any of my experiences. In short, I enjoyed the whole thing from start to finish. The conference also exceeded my expectations in a number of ways. First, I was impressed by both the quality and variety of work presented. From exploring playful interaction to investigating social presence in close relationships, the diversity of the talks served to demonstrate the breadth of HCI as we currently know it. The overall atmosphere at the conference also impressed me. In

all the sessions I attended, questions were pointed yet probing, delivered in good spirit to encourage discussion rather than to 'do down' presenters. Nobody at the conference seemed as if they were out to deliberately embarrass or trip anyone up. This made for a great atmosphere throughout the week – my lasting impression of British HCI is that we are fortunate to be part of such a friendly and accommodating community.

So it turns out that HCI people are actually rather nice. Who would've thought it! But what are some other ways that young researchers like myself can benefit from the British HCI conference?

The value of open discussion

It strikes me that general conferences like British HCI are great for getting fresh perspectives on your own work. This feels especially important to PhD students, where small (or indeed big!) mistakes might prove costly later on. One of the reasons I actually attended this year's conference was to participate in the doctoral consortium. Now, the idea of a doctoral consortium is that it should serve as a venue for students to discuss

their work and gain useful feedback. It is not for work to be examined and criticised *per se*; it is merely intended as a safe place in which students can discuss and develop ideas. To this end, the first half of the day was occupied with short presentations from each candidate about their work, with the afternoon used to exchange constructive criticism on our conference posters – we even got to work outside at this point, which, as I'm sure many other PhD students will know, is often something of a rarity in our line of work. The day was then rounded up with a session on research methods and some sage advice from the consortium chairs about what (and indeed, what not) to do in order to get a PhD.

While some attendees felt that we could have examined each person's work in greater detail, I think everyone found the consortium to be a useful experience. Reflecting on the experience further has made me realise that not only was it good practice for writing and presenting, it was also a great excuse to get out there, make friends, and get acquainted with the community as a whole. People often bang on about how conferences are good for

meeting people, but I didn't fully appreciate that until now. Many conversations I had led to the discovery of shared research interests, and thanks to the consortium I now have a small network of like-minded contacts that didn't exist before.

Getting exposure: see and be seen

By virtue of the doctoral consortium, I also found myself presenting a poster at the conference. Before HCI 2011 I'd heard good and bad things about poster sessions. To be honest, I wasn't sure about their value: why do a poster when you might as well write a paper? I'd also heard that poster sessions are often rather quiet at larger conferences. As it transpired, the poster session at HCI 2011 was anything but quiet, and I found myself talking to new people throughout the entire session. Not only was it useful in terms of explaining my work to unfamiliar readers, it also served to stimulate a wealth of new ideas for future studies. Thanks to this session I have literally twice as many ideas as before – none of which I will get the opportunity to pursue, mind you, but that's beside the point. The atmosphere was also very friendly – possibly fuelled by the free drinks on offer – and more seasoned conference attendees than myself commented that this session was one of the best they'd attended. In all, having something visual that draws people in and gets them commenting on your work is definitely a valuable experience.

Making friends: it's who you know...

As well as discussing work with a wider audience and establishing contact with other PhD researchers, another important benefit at conferences lies in getting acquainted with more experienced members of the community. They might someday be your external examiner! So if, like me, you've previously wondered what the typical HCI luminary actually looks like in person, conferences like British HCI are great for putting some names to faces and for striking up conversation with said individuals. Plus you never know when a minor acquaintance might come in handy in the future: success in academia, like many other working spheres, sometimes seems to rest not only on *what* but also on *whom* you know. Since networking opportunities like these might lead to career opportunities further down the line, there is certainly value in knowing who's working on what, and where shared interests might lie within the local community.

Rounding it up

Having reflected on my experiences, it feels as if the real value for a young researcher like me at British HCI lies in

open-minded discussion with others; in getting exposure and fresh perspectives; in making friends; and in feeling that you're part of the community. What seems even more important is that the British HCI community continues to have a venue to gather and reaffirm old friendships while, it's hoped, introducing new researchers to the field. And even though every young researcher covets recognition at international level, let's not forget that British HCI is in fact an international conference – this year saw talks from researchers based not only in Britain, but also from elsewhere in Europe, the USA, Australia, and Malaysia.

Before signing off, let's return to the issue of British HCI's place in the wider picture of HCI as a field. Is it a place for publishing one's best work, for testing new ideas, for getting boozy on the last night, or what? This is something that this year's keynote speaker, Gregory Abowd, touched on during the closing plenary. What was most telling for me about Greg's talk was that he mentioned how, as his first community, British HCI played a formative role in shaping his career, in turn giving him the confidence to go on and develop as a researcher. In other words, I think

Greg wanted to spark debate about the conference because it is something he genuinely cares about. And while questions will always exist about the true value of British HCI, these questions shouldn't be a barrier to the conference's ability to serve an additional, and perhaps equally important, role in terms of nurturing the careers of younger researchers like me.

Having found real value in my experiences at HCI 2011, I hope that the conference can have a lasting impact on my own career, as well as those of other up-and-coming HCI researchers. After all, responsibility for the conference will eventually fall into our hands once the current HCI glitterati decide to call it a day – admittedly some way off, but if we want the conference to be in a similarly healthy state when the time eventually comes, the onus is on us to contribute to the ongoing development and success of the whole enterprise. This year was enough to convince me that I want to be a part of this process; I certainly plan to return next year, and I'm hoping the friends I made at this year's conference will follow suit. Hopefully I'll see you there too.

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INTERACTIVE EXPERIENCE

Lynne Coventry reviews the event that gave conference attendees the opportunity to experience the interactive rather than simply hear about it.

The Interactive Experience session at this year's conference was the first of its kind. All three tracks were given over for a two-hour play session, designed to allow attendees to interact with the researchers and practitioners in interaction design, to play with the demonstrations and discuss actual designs and installations. In all 32 demos were on display and truly reflected the tremendous diversity of HCI research practice, ranging from privacy preserving eye-tracker interaction for an ATM, to digital art installations that explore new notions of creative expression.

The session was convened in Culture Lab, Newcastle University's centre for cross-disciplinary digital practice, and the session included a number of demos and performances from members of Culture Lab's Digital Interaction Group.

Participation was the key to a successful

session and it was great to see so many attendees take the opportunity to talk to the participants presenting their work and to try out the demos. Like the poster session, which again for the first time was hosted in a dedicated session, it was a resounding success.

Show and tell

The Interactive Experience session gave the opportunity for researchers and practitioners to show rather than tell about their systems. These could be fully polished systems, not-so-polished systems, cool-but-flaky prototypes, videos, or even short performances – whatever was felt appropriate for attendees at HCI 2011.

No assumptions were made as to what contributors might consider appropriate, but contributors had to carefully specify

their technical and space needs to show off their contribution. These could be contributions in their own right or be a supplement to a paper presentation.

A vast array of contributions

Contributors came from around the globe including Canada. They allowed attendees to experience multimodal media interaction with mobile devices, a recommendation system for runners, star in their own interactive comic strip, jam with an animatronic nightingale and even experience how to get conversations to start flowing with the hilarious flirtbar and understand what makes male dance moves sexy – and not so sexy!

On a more serious note, some of the experiences explored design solutions for people with dementia or aphasia or Parkinson's Disease. Attendees were



asked to vote on the best interactive experience, based on their own choice of criteria. Graffito Mashup – see the paper in this issue – was the resounding winner.

I would like to take this opportunity to thank Tom Bartindale, Patrick Olivier and Elizabeth Churchill for pulling together and facilitating the Interactive Experience. It provided far better interaction with the artifacts than the non-interactive experience of the paper presentations could ever do, and it also added to the opportunities for interpersonal interaction at the conference, for finding people with similar or complementary research interests, and for seeing just how robust your prototype is in the hands of people who not only know how to design HCI but also how to break most HCI.

hci2011.co.uk/site/wp-content/uploads/BCS-HCI-Conference.pdf

www.ncl.ac.uk/culturelab





REACHING OUT

Corina Sas, Lancaster University, and the DESIRE team reach out to High School students in an effort to encourage them to utilise creative design as an innovation tool in science and technology.

Schools Outreach event

The activities consisted of a series of workshops including:

- **Design-based problem solving session** where students were introduced to theories of problem-solving methodology and set a research problem to work on in small groups.
- **Introductory workshop on animation techniques using Photoshop** where students were introduced to the techniques of animation using Photoshop software.
- **Consultation and collaboration in the architectural design process** where, given the task of designing a small villa and its surrounding landscape, the students worked in small groups playing the role of client, architect, landscape architect or interior designer and exploring the need for collaboration and communication for a successful outcome in the design process.
- **Computer technology and the creative arts** where students were introduced to the use of modern computer technology in researching or developing areas of the creative

arts such as poetry composition, collaboration in music and storytelling in design.

Students were positively engaged

Over 70 students who attended the event engaged fully and enthusiastically with the activities. The majority rated the overall event as 'good' or 'very good', giving positive evaluations to the interest, engagement and importance of the presentations. It is highly relevant that a significant number reported that their interest in studying design, computer science and engineering had increased as a result of attending the event. Some comments about the best part of the session include:

"I learnt about aspects of design I had never even considered", "[it was] a good chance to debate, interesting ideas", "a new way of thinking", "talking about how music technology has grown and how music has changed", "good chance to talk to [university] students about courses", "seeing my animation in action!", "working on a specific and exciting project", "being able to create our own building and work in a team".

A team effort

The success of the event is a reflection of the effort and commitment of numerous people who need to be acknowledged. Thanks to all students who attended the event and worked hard throughout the challenging design tasks we prepared for them. Thanks to all DESIRE researchers and in particular to Erin Beatty (Psychology Department) who led the organisation of the event. Special thanks to Ms Jessica Abrahams, DESIRE Project Officer, who provided organisational and logistic support for the event. Not least, thanks to the Lancaster University Student Recruitment and Outreach Office for their help in enabling us to access over 70 students from the Lancaster Girls' Grammar School and the Lancaster Royal Grammar School to attend our event.

More information about the DESIRE network and this event can be found at www.desirenetwork.eu

DESIRE is an Initial Training Network (2008–2012) led by Dr Corina Sas in the School of Computing and Communications at Lancaster University, and generously funded by the European Commission, Framework 7 under Marie Curie Programme (over £2.9m).

The network aims to make theoretical contributions to the field of creative design by bringing together expertise in human computer interaction, psychology, arts and design. It offers an attractive training programme to 13 researchers within seven partner institutions consisting of expert supervision by world leading researchers, access to academic and complementary training, and participation in summer schools and conferences.

One of the network-wide training events was an outreach day planned and delivered by the DESIRE researchers themselves. A challenging exercise in event management and public engagement, the outreach day was an opportunity for our researchers to apply their knowledge and skills to engage with a non-scientific audience and inspire high school students (16–17 years old) to consider science, design and technology higher education and careers.

The one-day Schools Outreach event was hosted on 7th July 2011 at Lancaster University.



DOCTORAL CONSORTIUM

Elizabeth Silience, Northumbria University, who co-chaired the HCI 2011 Doctoral Consortium, describes the shape of a day that created a safe environment for students to explore their PhD.

This year's doctoral consortium was chaired by myself and Russell Beale. It served up a very diverse range of PhD projects, from biometrics in gaming through to search interfaces for the blind and a phenomenological study of coping with technology; a diversity that reflects the diversity of HCI in general. Our objectives for this session were co-created with the participants:

- Practise communication skills (poster and oral)
- Reflect on the PhD process, honing research questions and improving critical feedback
- Refresh knowledge of research methods
- Provide pointers as to where to find further information (on literature, methods, process)
- Encourage networking and engagement with the community

Nice to meet you

We all warmed up with a little 'introduce your neighbour' session. In addition to the usual 'This is Jane, she's in her second year studying mobile interface design', we were asked to incorporate one lie into our spiel. It turns out HCI PhD students, or lecturers for that matter, are not very good at telling lies. The lies – for example that I had climbed Snowdon that weekend, were

quickly seen through, with the exception of the student who claimed to be in a civil partnership – we all studiously avoided challenging that assertion and he was declared the winner.

The elevator pitch

The rest of the morning we spent listening to and discussing each others' presentations. The students had all been asked to present for just seven minutes. This is a difficult task for anyone but a useful lesson in clearly and concisely explaining your research, something we could all probably do with brushing up on from time to time. Despite the relatively brief time allowance we were treated to some interesting overviews including violin related props and a very artistic installation video. This kept us occupied until lunchtime with the exception of a brief, embarrassing interlude whilst a couple of my friends popped in to pass on, in song, their happy birthday wishes complete with a very tasty chocolate cake that we shared around.

HCI takes on the X-Factor

After lunch, with the sun shining through the windows, we decided to ditch the timetable and take the opportunity to work outside. In front of the students' union a set of tables usually reserved for a quiet drink and a smoke became the backdrop for an

X-factor-style poster session. Encouraging the students to critique each others' work was a tough task but they eventually rose to the challenge, jostling for the accolade of being the next Simon Cowell. At the end of the session they certainly felt critiqued and jokingly asked whether it was too late to get the posters reprinted. That said, the DC contribution at the official poster session the following evening was very well received, and one was even a close runner-up to the winner of the best poster.

Room to learn

Fun over, it was back indoors for a slot on research methods where I found out just how difficult it is to explain an interaction effect – even to myself. Chi square proved to be the favourite method of the day and there was a good exchange between students on their tried and tested stats books. Russell ended the session with some general tips and wrinkles, from developing clear research questions, and what makes a PhD, to using a reference manager system. The feedback from the day suggested that the DC had given everyone lots of food for thought, myself included. Interestingly, no-one put their hand up when Russell asked whether everyone was already using Endnote or something similar. Is it too late to make a confession, Russell?



ROSE JOHNSON: REAL-TIME FEEDBACK FOR LEARNING VIOLIN

Playing a musical instrument can be a life-enriching experience, not only as a tool for self-expression but also as a way of connecting with other people when playing in ensembles. Many people at different points in their lives attempt to learn musical instruments, but are often discouraged by the technical difficulty of these. One might argue then that there is a need for more accessible musical instruments, and to an extent this may be true; however, much of the expressiveness of traditional instruments comes from the complexity of the interface. Moreover the cultural structures around music encourage people to learn traditional instruments that can be used with pre-existing musical scores, giving an expected musical sound and allowing people to play together in a mutually understood way. Therefore rather than looking at new musical instruments my research focuses on how new technology can be designed to help people to learn traditional instruments – in particular the violin.

Real-time feedback

The way I propose to help people learn is by giving them real-time feedback. This means giving students feedback while they are playing in near-instantaneous response to their movements. This is similar to the feedback players naturally get from the violin in the form of sound and vibration. It is also similar to the way we naturally negotiate the world using our senses. Real-time feedback has a number of potential advantages when given in

addition to traditional teaching: firstly, feedback is given in context, allowing students to understand specifically what movements trigger a particular response – building up a mental model of cause and effect; secondly, players can adapt their playing as they go, avoiding repeated practice of wrong movements which could cause enduring bad habits. However, this is a relatively new area for research and it is not obvious from the outset whether these potential benefits will materialise in real music learning contexts when students are already carrying out a physically and mentally demanding task. It may be cognitively overloading to be asked to process additional information in real-time whilst playing the violin. In my PhD I am trying to find the sweet spot between helpful feedback that makes learners more aware of how they are playing and overloading feedback which is either too distracting or incomprehensible.

Controlled studies have shown that real-time feedback can enhance learning in other physical activities. For example Bloomfield and Badler (2008) found real-time vibrotactile feedback could be used to improve the accuracy of basic karate moves in complete beginners. There has also been some research into using new technologies to help novice musicians. One example is the iMaestro project (Ng et al., 2007) which used motion capture technology to visualise player and instrument in a 3D augmented mirror. The focus for these visualisations appeared to be primarily for reviewing and reflecting

on playing rather than using the feedback in real-time.

MusicJacket

I began my PhD by working as part of a team on the MusicJacket project, musicjacket.org, building a prototype designed to give real-time vibrotactile feedback. It uses a wearable motion capture system to measure the movement of the upper body; it then compares this to the way the teacher has shown the student how to play at the start of the lesson. If the student's bowing is too far from the ideal path the teacher has shown them, then the student will feel a vibration on their arm. The position of the vibration will tell them where they need to move their arm in order to correct themselves.

With this prototype we carried out two user studies. The first was a laboratory study (van der Linden et al., 2011a) which took complete beginners and followed them over a week as they used the prototype to practise their bowing technique each day. This showed significant improvements in straightness of bowing while the participants were being given feedback. However, due to the short length of the study we were unable to show that this improvement still continued if the feedback was taken away.

The second user study (van der Linden et al., 2011b) took the MusicJacket out of the lab and into normal violin lessons – working with children who had already been learning the violin. In this study we explored how feedback might realistically be used in real teaching settings, whether it can complement existing teaching practice and whether the additional cognitive loads and pressures on the student might bring up new usability issues. We found that the effectiveness of the feedback was dependent upon its relevance to the student's own goals and the goals of the lesson. In cases where the students were strongly focused on another aspect of playing, for example remembering the notes or doing longer bows, they reported being unable to feel the vibrotactile feedback altogether. This is interesting to me as it starts to show the boundaries at which the cognitive and attentional resources become overloaded. The teachers were very willing to integrate the prototypes into their lessons, using them to extend exercises that they normally did with the children, such as playing with their eyes shut. We also observed that the teacher began to discuss movement in more detail with the students in the lessons with the feedback – using the feedback as a way of asking the students to analyse themselves. Overall the teachers were very positive about how

the prototypes had worked during in the study but were particularly positive about the idea that they might be used to support the children in their practice at home, reinforcing what the child learnt during the lesson.

Feedback for home practice

To explore real-time feedback further I plan to carry out user studies in home practice settings, examining the potential of real-time feedback for long-term learning. This requires that students are using the prototypes frequently, not just once a week in their lessons. Additionally, time spent practising is very strongly linked to musical achievement (Sloboda, 2005). Practice also brings in the question of students' motivation and approach to learning and I am interested to find out whether introducing a practice aid might affect these.

In order to study home practice new prototypes need to be built. The MusicJacket uses expensive equipment and requires time-consuming calibrations, making it unfeasible to give to a child to take home and practise with. Therefore, I took a different approach, developing a new set of MuSense prototypes. These use single sensors to measure specific aspects of playing such as length of bow used or the posture of the left arm. Feedback can then be given either as vibrations or as lights around the music. The visual feedback was introduced as a contrast to vibrotactile feedback in order to study the properties of different modalities as ways of conveying feedback. By taking the minimal sensor approach MuSense prototypes are considerably cheaper, smaller and easier to use than the MusicJacket, allowing students to use them independently and enabling me to start studying the use of real-time feedback in home practice.

Planned studies

I begin my study of home practice by first exploring the properties of feedback in a more structured practice setting. To do this I ran a short study on campus with some players from my university orchestra. In this, each player tried three alternative feedback displays (two visual and one vibrotactile) and then we discussed which displays they found easiest to understand and why. Moving on, I am planning a three month study with the members of a school orchestra where the children will be able to take the MuSense prototypes home and use them as part of their normal practice. Together we will be looking at whether feedback can help people improve playing in the long-term and whether introducing feedback into the practice setting affects



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motivation. I plan to look at the former using motion capture data as well as through consultation with their teachers and observations of them playing in the orchestra; evidence for the latter will come from interviews with the children themselves.

The future

My initial research has led my thinking in new directions. One of these developments is to consider whether feedback can be used when several people are playing together. The previous study with orchestral players brought out some interesting questions about this. I plan to begin investigating this at an orchestral summer school using video analysis and participant observation as a way of understanding how feedback may affect the sense of being part of an ensemble and each person's confidence about their role within it. The findings from my research so far suggest that the concept of real-time feedback can be extended to other applications, not only within the area of music training but also to other physical activities, such as sports or physiotherapy. It is also very important to me that technologies for musicians like the ones I have built should eventually come out of the research setting and become publicly available products. This is a sentiment that many of the musicians I have spoken with have echoed.

MY PHD

If you are a PhD student just itching to tell the world about your research or if you've enjoyed reading about some of the emerging areas of research that the My PhD column has recently discussed 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. If you would like to submit or would just like more information please contact Professor Shaun Lawson using the contact information below.

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INTERACTING WITH COMPUTERS



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 5, a Special Issue on 'Feminism and HCI', edited by Shaowen Bardzell and Elizabeth Churchill. It is dedicated to the memory of Susan Leigh Star who sadly passed away in 2010.

The final volume of the year (Volume 23, Issue 6) will consist of regular papers only, whilst a future issue in 2012 will have a special dedication to and appreciation of the work of the recently-deceased Andy Smith and his colleague, also sadly missed, Lynne Dunckley, reprinting their paper, 'A process model for developing usable cross-cultural websites', which we originally published in Volume 16(1).

Feminism and HCI Special Issue

As a word and as a set of theories and practices, feminism is a poorly understood concept. However, feminist perspectives have a lot in common with user- and value-centred design processes such as those espoused within the field of Human Computer Interaction. Examples include consideration of alternative viewpoints, considerations of agency (who gets to say/do what and under what circumstances) and the development of reflective and reflexive methods for understanding how, when, where and why people do what they do.

In the 'Feminism and HCI: New Perspectives' special issue, researchers and practitioners are invited to reflect on the ways in which feminist thinking, theory, and practice can and does have an impact on the field of HCI. The first paper

and introductory editorial offers more background to the view that there is great value to understanding the actual and potential impact of feminist thinking on HCI, followed by a précis of each paper.

Volume 23, Issue 5, September 2011

Special Issue: Feminism and HCI: New Perspectives

Editors: Shaowen Bardzell and Elizabeth Churchill

- Shaowen Bardzell and Elizabeth Churchill
Feminism and HCI: New Perspectives
- Phoebe Sengers, Steve Harrison and Deborah Tatar
Making Epistemological Trouble: Third-Paradigm HCI as Successor Science
- Jennifer Rode
A Theoretical Agenda for Feminist HCI
- Sheryl Brahnam, Marianthe Karanikas and Margaret Weaver
(Un)dressing the Interface: Exposing the Foundational HCI Metaphor 'Computer Is Woman'
- Jill Dimond, Casey Fiesler and Amy Bruckman
Domestic Violence and Information and Communication Technologies
- Nancy Van House
Feminist HCI Meets Facebook: Performativity and Social Networking Sites
- Ann Light
HCI as Heterodoxy: technologies of identity and the queering of interaction with computers
- Nalini Kotamraju
Playing Stupid, Caring for Users, and Putting on a Good Show: Feminist Acts in Usability Work
- Michael Muller
Feminism asks the 'Who' Questions in HCI

There are also nine regular papers in this issue.

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 can be viewed here or through the journal's Facebook and LinkedIn groups.

Future Special Issues for 2012 and 2013

Three Special Issues are currently in preparation but we are happy to receive proposals for new Special Issues 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

Organic User Interfaces

Editors: Audrey Girouard, Roel Vertegaal, Ivan Poupyrev

Context-driven Human Environment Interaction

Editors: José Bravo, Diego López-de-Ipiña, Ramón Hervás

IwC news

An indication of our successful position in the ranks of all HCI journals can be found at the Microsoft Academic Search site where we are regularly placed in the top five. See academic.research.microsoft.com/RankList?entitytype=4&topDomainID=2&subDomainID=12&last=5&start=1&end=100.

Welcome to our newest Editorial Board members:

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Call for Papers

Designing Interactive Systems 2012

11–15 June 2012
Newcastle upon Tyne, UK

The ACM conference on Designing Interactive Systems is the premier international arena where designers, artists, psychologists, user experience researchers, systems engineers and many more come together to debate and shape the future of interactive systems design and practice.

At DIS 2012 we will turn our focus to what happens when our interactive systems are used 'in the wild'. Join us to discuss the opportunities, issues and challenges of interactive systems when they are placed in the lived, everyday experiences of people, institutions and practices.

DIS 2012 is hosted by Culture Lab, a cross-disciplinary centre for creative and digital technologies research at Newcastle University.

Submission deadlines

9 December 2011 Workshop proposals
20 January 2012 Full and short papers
7 March 2012 Demos and doctoral consortium

www.dis2012.org

Call for Papers

Pervasive 2012

18–22 June 2012
Newcastle upon Tyne, UK

Pervasive is a premier international conference for cutting edge research on the architecture, design, implementation, application and evaluation of pervasive computing technologies. The conference places strong emphasis on both the technological innovation aspects of the field of pervasive computing and the ways in which these emerging technologies affect and influence everyday life.

This year's conference aims to continue the tradition of innovation and excellence in research established by previous Pervasive conferences.

Papers should be grounded in existing Pervasive Computing literature and knowledge, and should be written for an interdisciplinary Pervasive Computing audience.

Submission deadlines

28 October 2011 Workshop proposals
14 November 2011 Papers
16 March 2012 Demos, posters, videos and doctoral consortium

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