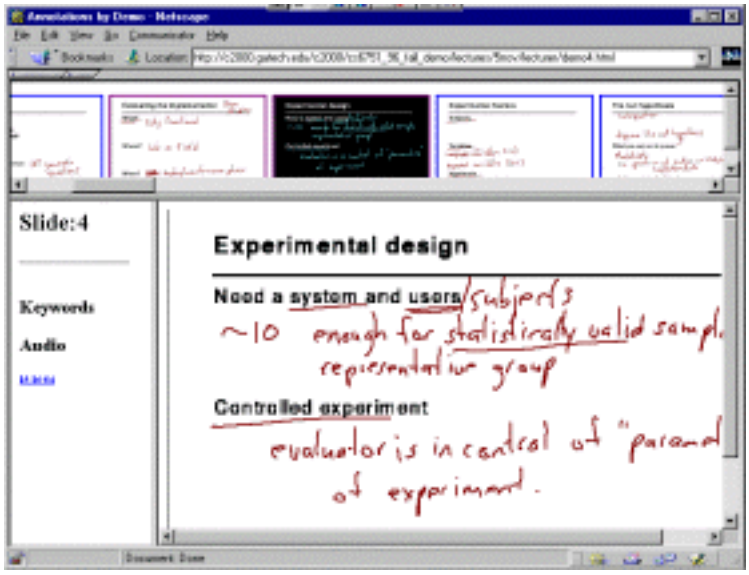
Interfaces

No. 38 Summer 1998

HCI and the Web

PRACTICAL AUTHORING TOOLS
for design and usability



THE ACTIVE WEB
choosing technology

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shared landscapes

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contents

Chris Roast invites you to *HCI98*

At the time of going to press final preparations for HCI98 are well under way. This year the conference is hosted by Sheffield Hallam University and is to offer delegates a rich variety of contributions and opportunities. We are pleased to have guest speakers highly experienced in research and practice within the broad field of HCI. On industry day (September 2nd) Karen Mahony and Gary Fitzpatrick offer insights into the nature of successful interactive media from both a market-focused and a public-service perspective. Philip Barnard, Joëlle Coutaz and Jonathan Grudin hardly require introductions, having made considerable and distinguished contributions to HCI.

As with previous years the first day of conference (September 1st) is devoted to tutorials and the doctoral consortium. A total of 16 tutorials cover a number of highly relevant and interesting areas, including web design and interaction, user and cognitive modelling, advanced technologies and design process. (Tutorials can be attended independently of the main conference.)

We are indebted to the many Inter*faces* readers, and others, who have assisted in reviewing the conference submissions, and helped ensure a high quality programme. This year the papers illustrate both the exciting and developing nature of the field, characterising a subject area which is rapidly growing in terms of theoretical underpinning, process and product. The programme has a truly international flavour with half of the papers from USA, Japan, Australia and New Zealand. In addition to HCI98's industry day (September 2nd) offering a practitioner-focused programme, we are pleased to see that a significant number of the full technical papers report research being conducted within industrial settings.

As previous HCI delegates will know, the conference contributes to the field of HCI not only in terms of its technical programme, demonstrations and site visits, but the attendees also benefit greatly from the social programme. This year the social events include an informal Ceilidh at Kelham Island working industrial museum and a formal dinner and tour of Chatsworth House.

Thanks to the considerable efforts of the conference committee and the support from

Editorial

sponsors, HCI98 is set to be an interesting and entertaining reflection of current issues and activities in the community. If you are attending HCI98, we wish you a warm welcome and hope you enjoy Sheffield and leave the conference stimulated and informed. However, if you have not been able to attend HCI98 don't forget that the proceedings and conference companion are available from the conference office at Sheffield Hallam University.

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Welcome to this special issue on HCI and the Web. We have articles on the theme from John Waterworth, Yin Leng Theng and Alan Dix; Leon Watts and Andrew Monk give us an individual view of CHI 98 and David Singleton offers some controversial thoughts in Alternative Realities.

The Winter 1998 issue of Inter*faces* will be no. 40, signalling our 10th year in production. To mark this occasion we will be taking a look back over the years at some of the items we have covered as well as a look forward to where we might be in another 10 years.

We invite you to nominate your favourite items from the past 10 years, to give us progress reports on any project or person featured in past issues or to send in your (brief) answers to the question 'Where will HCI be 10 years from now?' We are particularly keen to hear from anyone who has archives of very early issues of the British HCI Group Newsletter! The time to start thinking about this is *now*, so that we can produce an exciting celebratory issue in December.

Issue 39 (Autumn 1998) will be a general edition, with no particular theme. Please send your contributions soon … reports from the conferences, responses to the features in this issue, reviews, research …

We look forward to hearing from you.

Janet Finlay

With thanks to: commissioning editors: Stella Mills, Alistair Kilgour, Alan Dix. Inter*faces* is looking for additional commissioning editors. Please contact the editor for details.

To receive your own copy of Inter*faces*, join the British HCI Group by filling in the form on page 16 and sending it to the address given.

Next Issue

The next Inter*faces* will be an open issue – contributions from any area of HCI are welcome. The deadline is **August 11th**. We often have too few contributions by the deadline to make up an issue, though, so don't let missing it stop you from sending something in!

If you wish to discuss a potential submission please contact the Editor as soon as possible.

Right to Reply

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

Deadline for the Autumn issue is **August 11th**. Deadline for the Winter issue is **September 30th**. Electronic versions are preferred: RTF, plain text or MS Word (5/6), via electronic mail or FTP (mail fiona@hiraeth.com for FTP address) or on Mac, PC disks; but copy will be accepted on paper or fax.

Send to: Inter*faces*, c/o Janet Finlay, School of Computing and Mathematics, University of Huddersfield, Queensgate, Huddersfield HD1 3DH
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and **copy email submissions** to Fiona Dix, Inter*faces* production editor; email: fiona@hiraeth.com

Spaces, Places, Landscapes and Views

experiential design of shared information spaces

This article focuses on the World Wide Web (Web) as a provider of shared information landscapes. It reviews our work on designing 3D spaces for information navigation and social interaction, and suggests an approach to such design based on an experiential theory of meaning. This approach is contrasted with the traditional view of HCI design as a means of conveying system functionality from the head of the designer to that of the user. This is promising, if we assume that we do not know in advance what the functions of interactions in shared information spaces might be. As with life in general, such interactions mean what they are experienced to be.

Introduction

There are many ways in which the world's most popular hypermedia system (by far), the World Wide Web (Web), does not reflect the hypermedia usability research that preceded it (see Waterworth and Chignell, 1989, for a catalogue of what were considered the key research issues at that time). Perhaps the most unexpected thing about the Web as a whole is that no one is designing it. Three other ways in which it has not conformed to what was expected of hypermedia are: first, the use of three-dimensional graphics to give a sense of space; second, the fact that there is one Web which all users cohabit; and, third, the fact that we can communicate with each other from within the Web. This paper develops three themes which follow from these unexpected characteristics of the Web: Personal Spaces versus Public Places, the notion of Vehicles with Views, and the potential for Presences and Concealment. These are illustrated with some recent examples of our work, which adopts an experiential approach, as opposed to the traditional view of HCI design as facilitating the communication of functionality between designer and user.

Personal Spaces versus Public Places

An increasingly popular approach to the representation of information on the Web is to use 3D rendering techniques to convey a sense of space and apparently solid structure (see Waterworth 1997a). This means that information explorers can bring their innate skills for spatial navigation into play, in addition to those few sensori-motor abilities utilised by the familiar direct manipulation (WIMP) interface. We can distinguish the idea of space from that of place. In a sense, everywhere on the Web is currently a public place (some have restricted access, but I will disregard that for present purposes), even the humble single-screen individual-user home page. They are public because anyone can go there and, often, several people will be there at the same time. But they are not aware of each other. In this sense cyberspace is unlike reality. We cannot generally see where people are in cyberspace. We have public places and personal spaces but no public spaces, at least partly because users do not share a sense of each other's presence in those 3D structures. (Here I am ignoring a few emerging social spaces, such as The Palace, specifically designed for some kind of social action via the Web.) We need to use 3D to convey aspects of human presence, to represent the people, not just aspects of the available information; but 3D alone will not be sufficient.

The Web provides a marvellous medium for information exchange, for contacting others, for sharing opinions, for finding out about events, and for keeping in touch with recent developments. But as we explore the Web, we stay at home. People can send us messages, can search for things posted with our names attached. Once they have our address they can write to us. Maybe they can send e-mail

> *"Bodily presence is no longer as important as where our attention is located."*

from a page of ours they came across. But they don't know where we are at any given moment, they know only the address we use for sending information (and not always that) and the information we make available. If we have a camera set up in the office and linked to the Web, they can see when we are in our office. But they probably already knew where we worked. If they see us at the terminal we might well be navigating around the Web, but where? Bodily presence is no longer as important as where our attention is located.

We don't always want to have to go and look for things ourselves, and search engines of one kind or another are increasingly used to locate information on the Web, especially by more experienced users. The notion of software 'agents' (also known less misleadingly as personal digital assistants), which can carry out tasks for us in the background while we get on with other things, is much talked about and complementary to the idea of using space. But the real agents in cyberspace – the people – remain unrepresented. Because of this, we cannot search for people, only for the things they have left in cyberspace. It should be possible to enter the attributes of people we might want to locate and have the system report back where they are in cyberspace, where they have been recently, and so on, adding value to everyday reality.

Vehicles with Views

Vehicles (see Waterworth, 1996) combine the idea of a private collection of information and configuration of services (a customised information space) with that of a multi-level navigational device and customised information viewer (of public places). The user is considered to be always in his (or her) Vehicle, and therefore always has

John Waterworth

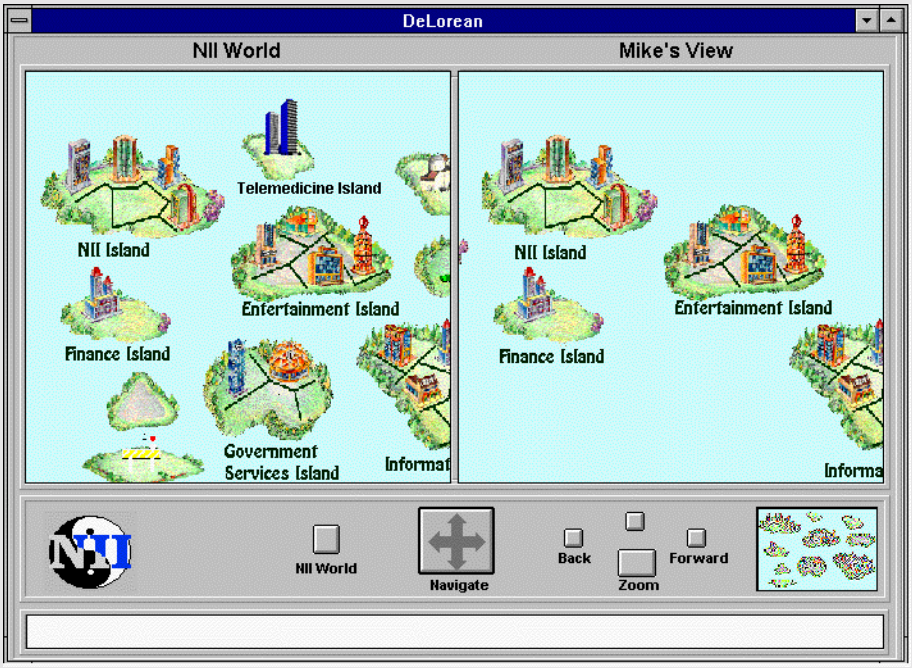

Figure 1– **Inside a Vehicle with two Views**

access to both public and private worlds. Items can be transferred between these worlds without navigating space. This is possible because the user has one or more filtered ways of looking at the same spatially arranged world that occupies public space. These ways of looking are called Views. One View might be a "God's Eye" perspective on cyberspace, showing everything that is available as the user moves around. More usefully, Views can present selected aspects according to the needs of the individual or of a group of collaborating users. For example, I might want only to see those items that contain video material, or only those items that are very popular.

Views become more interesting when applied in the social sphere. I may want to see only items visited by members of my research team recently. Or I might want to compare one View I have compiled of interesting sites, with the View a colleague has collected. My View is a way of looking at cyberspace where only things of interest to me exist, and the same applies to him and his View. We can combine these two into another View that shows only those items that are of interest to both of us, or we can create a difference View which shows only those things chosen by only one of us. So public space is filtered to give a socially shareable and customisable View of that space. The obvious next step is to include representations of cyberspace inhabitants in selective Views. I might want a View that conveys the number of people present in the regions I explore, but I am unlikely to want to see all available information on all the people there. I might want only to see people if they are known to me. I might want to see them differently if they are business colleagues rather than competitors. In general, I will want different attributes of people represented in cyberspace according to their relationship to me. Increasingly, interacting on the Web will become like participating in an on-line multi-user game.

The experiential approach to information landscape design

The traditional approach to HCI design suggests that an interface metaphor is some kind of specialised device for conveying a complex of concepts, based on speaking of, or presenting, one thing as if it were another. In several books published over the last two decades, George Lakoff and Mark Johnson have presented an alternative view of meaning, one that casts a completely different light on the role and importance of metaphor, while at the same time avoiding the problems of both objectivism and pure subjectivism (Johnson, 1987, 1993; Lakoff, 1987; Lakoff and Johnson, 1980). Our current approach to HCI design (Lund and Waterworth, 1998), based on this experientialist account of meaning rather than the usual objectivist cognitivism of the traditional "mental model" approach, rests on the fundamental premise that to design HCI is to design the conditions for possible users' experiences.

Conklin (1987) argues that "there is no natural topology for an information space". However, an experientialist

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designer would argue the opposite: that there are, in fact, not one but many natural topologies for such a space, topologies ultimately grounded in human bodily experiences. Waterworth (1997a) outlines a design for a World Wide Web browsing environment – a Personal Space – that was informally based around considerations of human bodily experiences in real, physical spaces. We are currently engaged in a more thoroughgoing attempt at the experiential design of an environment called SchemaSpace (Lund, 1997; Lund and Waterworth, 1998). The approach is a development of the idea that HCI design is mostly a matter of sensual or perceptual ergonomics rather than the "cognitive ergonomics" that follow from the traditional, cognitivist approach (see Waterworth (1997b) for more detailed discussion of these two perspectives).

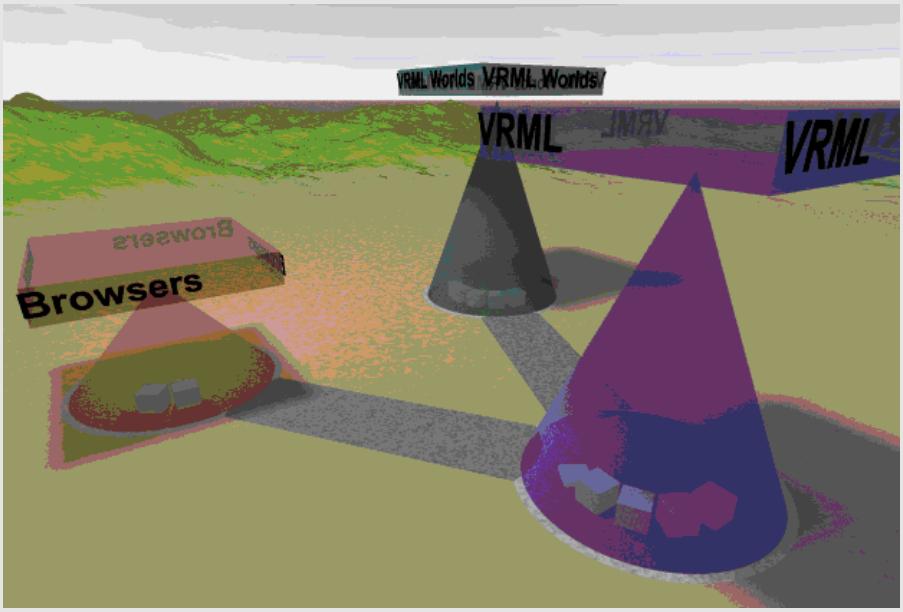

Figure 2 – **A View of SchemaSpace** (Lund and Waterworth, 1998)

Like traditional approaches, experientialist design draws on users' prior experiences, but there are several fundamental differences. Firstly, from the traditional perspective, metaphors are useful (usually) but not essential. A traditional user interface metaphor can always be paraphrased into a literal interface. From the experientialist perspective, however, metaphoric projection is essential to the way people make sense of the world, including a user interface. Secondly, that metaphoric projection is essential to sense-making does not mean that we live in a world of metaphors. If we design from an experiential perspective, this does not mean that the interface need be a virtual world of metaphoric objects. Such a world is more likely to be the outcome of the traditional approach.

From the experientialist view, what is needed in HCI design is for the interface to be a source of experiences, designed in such a way that the experiences generated may be structured by the projection of basic bodily image schemata. What the resultant interface means, what it is for a given user, depends on his or her unconscious reactions to the structures provided. If the interface feels right for its purpose, it is successful. No designer can know what the system really is, in general. It is what it means to individual users and, like life, it means what it is experienced to be.

Presences and Concealment

Even if we don't want to be personally identifiable on the Web (in the same way we sometimes don't want to be individually known to strangers in the real world) we currently don't even have presence as anonymous people in cyberspace. All we can tell, sometimes, is how many people have visited a site before us. Or rather, how many visits have been made to the site. For cyberspace to become real, we need a sense of people's presence (and absence), with suitable protection for privacy – if that is possible.

A limited sense of what shared presence in the Web would bring is provided by experiences in "multi-user dungeons" (MUDs) and the Internet Relay Chat services. The recent book by Turkle (1995) gives a good insight into those worlds, although the MUD and Chat users are probably not typical of Web users. Specifically, they are self-selected for their interest in role playing and/or a need to alleviate real-life loneliness. Turkle points to the ease of adopting multiple personae in cyberspace, to present the face we choose to present rather than the real-life person we have become over the years. This can be seen as partial or selective presence. We can think of degrees of presence, from totally concealed (invisible), through anonymous (featureless) but visible, to articulated personae, one of which might be a representation of our real-world personality. Should we be able to choose how we appear to others? Should we be able to appear present when we are not, and not present when we are? False presence arises when we appear to be somewhere, but

are actually elsewhere. Multiple personae multiply the scope for such deception.

As more and more people migrate to cyberspace, both the amount of information and the number of sources of information multiply. But human attention is still singular.

"Should we be able to appear present when we are not, and not present when we are?"

We are each aware of only one thing at once. I can watch TV or read a book, but I cannot do both at any particular moment (of course, I can switch between the two, and if the rate of information transfer from the TV is typically low I won't miss much). In the same way, even though many browsers now offer some support for following multiple threads, we can only really attend to one thing at once, even with multiple display windows. This is how we can be said to follow links – to navigate – at all, and to be lost in cyberspace when we lose our (singular) way. This also gives us the presence that is currently unrepresented in the Web.

Conclusions

The Web differs in several major respects from the hypermedia systems that were the focus of so much premature research in the 1980s. Like a capital city in a developing country, it is large and growing very fast, both in the amount of information and the number of inhabitants. All those people use the same system, rather than having their own copy; in other words, they truly co-habit cyberspace. And no one is designing it as a whole. Rather, we operate "locally" by introducing innovations that may or may not catch on in the electronic world-at-large. The design of such landscapes and features is more appropriately based on notions of meaning as experience, rather than traditional ideas of meaning as functionality conveyed through HCI models, since we do not know what the function of shared information landscapes might be.

Although the Web is populated with co-habitants, they are generally invisible and largely unaware of each other's presence. Until they are represented as people, the Web will not be truly shared. Such sharing need not necessarily be personal or threatening; we can remain anonymous, or even invisible. Knowing who, or even just if or how many people are in the same vicinity as us means that we can behave as the essentially social animals we are. Experiential design captures basic, unconscious, animal reactions to physical environments and introduces them to shared virtual landscapes.

Acknowledgements

A more developed version of this article was presented at the Workshop on Personalised and Social Navigation in Information Space, Stockholm, March 1998. The full paper is available from the author and can also be found in the workshop proceedings <http://www.sics.se/humle/projects/persona/web/workshop/proceedings.html>.

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Practical Authoring Tools for Web Authoring

Introduction

Ad hoc methods of designing, constructing and validating web pages are not enough. Usable web pages that subscribe to end-users' needs should be developed. This is uncontentious wisdom, but doing this is not easy. Nielsen (1996) predicts that due to a change in the dominating styles for web sites over recent years, a real contribution essential for web design should consist of further research into different knowledge areas: (i) knowledge of icon design; (ii) knowledge elicitation to discover appropriate information space structures; (iii) usability testing; and (iv) task analysis techniques. But searching for solutions in isolated disciplines, and recommending them to designers in the hope that they will somehow remember to put them into practice, may not be as simple as it sounds. Many factors could prevent well-intentioned designers putting these good suggestions into practice. One could be that designers are overwhelmed, they might not have the time and capacity to attend to all these authoring details. This paper argues that, in order for Nielsen's suggestions to be truly effective and implementable, recommendations should go beyond just providing designers with a list of 'do's and 'don't's.

This paper[1] describes two projects carried out at the School of Computing Science, Middlesex University, that have led to the development of various authoring tools to address design and usability problems in web authoring. Our projects might be characterised as: being user driven (with little emphasis on a particular task), and being task driven (with little emphasis on a particular user *per se*). Neither of these approaches is 'conventional HCI', because both rely on doing a substantial amount of programming and software development. But conventional HCI perhaps too often studies what is, rather than what could be: using commercial products in research allows one sort of useful research, but we should not lose sight of other issues.

A multi-disciplinary, user-driven approach

Monk and Gilbert (1995) claim that

> inter-disciplinary research can only be effective when it involves the creative juxtaposition of different approaches around a specific problem, so that each can shed its own light on the issues

This has significant implications! Research efforts need not be focused on a particular discipline to solve a problem. Collaborative efforts involving many disciplines may be necessary to solve complex problems.

We began by looking at *fundamental design and usability issues* drawn from current technologies in subdisciplines of hypertext, human–computer interaction, cognitive psychology and software engineering. The result is the development of a hypertext research authoring tool called HyperAT (Theng, 1997). The approach taken in HyperAT is novel in that *multi-disciplinary* approaches drawn from current technologies in subdisciplines of hypertext, human–computer interaction, cognitive psychology and software engineering are integrated and culminated into a practical authoring tool. By assuming a multi-disciplinary approach, many 'strands' of investigation and novel ideas were generated that would otherwise be missed out if the investigation was focused on one aspect of the problem.

HyperAT stands for *Hypertext Authoring Tool*. HyperAT is a prototype designer tool for authoring hypertext and web documents. The philosophy and the underlying concepts taken in the design and implementation of the authoring and usability components in HyperAT are described in greater detail in Theng, Rigny, Thimbleby and Jones (1997). In this paper, we give a general overview of HyperAT, its inputs and outputs (see Figure 1), and focus on the initial evaluation of HyperAT and its contribution to web authoring and general interactive systems.

In the figure, inputs refers to the *multi-disciplinary* approaches that underlie the design of the authoring and usability components. Approach One examines design principles, and, in HyperAT, it is examined in the form of good web style guides. Approach Two emphasises the importance of understanding end-users' needs and the tasks they perform. In HyperAT, we explored end-users' browsing needs on the web. Approach Three stresses good structuring, and therefore, in HyperAT, good web page structure to help both designers and end-users is investigated.

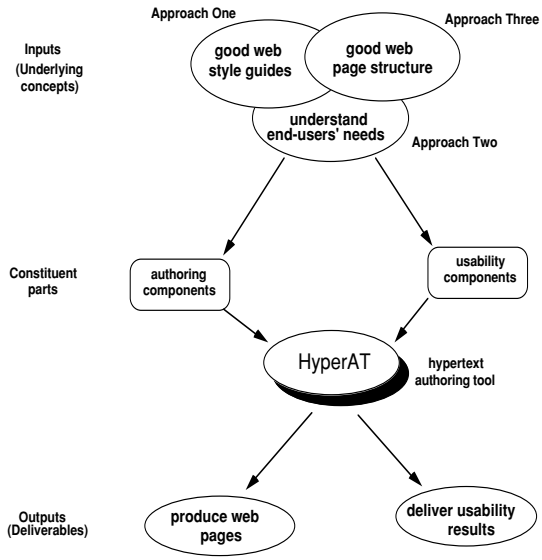

Figure 1 – **General overview of HyperAT, its inputs and outputs**

1 This paper describes in greater detail a short paper submitted to HCI'98 (Theng, Marsden and Thimbleby, 1998).

Yin Leng Theng and Harold Thimbleby

Outputs are the deliverables produced by HyperAT. Besides providing the basic authoring facilities to produce web pages, HyperAT also delivers usability results to designers regarding any usability problems that might be detected during its analysis.

The main objective of HyperAT is to help designers build usable, well-structured hyperdocuments. In designing the authoring components, we incorporated two underlying design concepts, that is, the need to impose a structure, and the need to incorporate good web style principles and guidelines. These included features such as automated, hierarchical structuring of web documents, generated table

"searching for solutions in isolated disciplines, and recommending them to designers in the hope that they will somehow remember to put them into practice, may not be as simple as it sounds"

of contents – all to help generate web pages with a standard 'look and feel' to ensure consistency of presentation, etc.

For the usability components, we incorporated features that help designers to better understand users and their browsing behaviour. Hence, apart from the basic editing facilities of create, edit and save, embodied within HyperAT is an authoring testbed which allows hypertext designers to carry out different modes of usability testing such as structural analysis and real user evaluation on documents created by it.

We carried out an initial evaluation of HyperAT to get qualitative results and impressions on the usefulness and usability of it as a web authoring tool by: (i) comparing web sites produced by HyperAT and a standard HTML editor; (ii) getting feedback from experts; and (iii) comparing HyperAT with various web authoring and management tools. A detailed description of the evaluations conducted is found in Theng and Thimbleby (1998).

Initial evaluation shows that HyperAT does a useful job as a research tool in exploring authoring and usability issues. Compared with other tools, a distinguishing factor of HyperAT is that besides providing the basic authoring facilities to produce web documents, HyperAT also delivers usability results to designers regarding any usability problems that might be detected during its analysis. Because both the authoring and usability components are found within HyperAT, it would be viable as a future enhancement to HyperAT to integrate the usability results into the authoring process to allow designers to make necessary changes to the web documents more easily.

Because the work carried out was based on well-established literature in hypertext, human–computer interaction, cognitive psychology and software engineering, the emergent ideas that come out from the investigations can also be adapted to address design issues for general interactive systems. We acknowledge that HyperAT implemented in the course of this investigation may not replace any commercial authoring tool, yet this investigation demonstrates that interesting design and usability ideas can be realised in a practical authoring tool to address problems in web authoring.

Meeting practical needs: a task-driven approach

One of the largest problems faced by authors of the first, large, hand-built web sites was the lack of site-level editing facilities. Simple tasks like updating a corporate logo or changing the background colour could require hours of tedious editing. In addition, the desire for a common look to groups of pages on a site, probably based around the corporate identity, tended to lead to a single webmaster being responsible for assembling every page on the site. This is unacceptable if information is to be kept up to date. Authoring skills have to be spread around many information contributors. These contributors should be able to write relatively style-free pages (for example, in standard HTML editors or word processors with HTML save-as features), and then have the appropriate *current* style added to them automatically.

In contrast with the first project, the second was developed based on *practical needs* expressed by the end-users of an existing web site of the Royal Society for the encouragement of Arts, Manufactures and Commerce (RSA). The RSA was founded in Britain in 1754, and has wide-ranging interests and significant influence in industry, education, the arts, design and the environment. The Society has a fellowship of 21,500 members from around the world.

Various tools have been developed while simultaneously building web sites for the RSA:

Gentler (Thimbleby, 1997a) was written in HyperCard and was used to create the first 'automatic' RSA web site, using a database of information provided by the RSA. Gentler managed the web site from 1995 to 1996, when it was superseded.

Siteview (Thimbleby, 1997b) was written in Java, built on the ideas of Gentler, using content or 'source' files whose presentation was controlled by a number of design files – thereby allowing quick and reliable alterations to the visual appearance of whole subsections of a site. Siteview has been used to create a medium-sized, self-contained web site, describing the project to restore Benjamin Franklin's former house in central London. The tool proved useful as it provided semi-automatic generation of certain site elements, such as consistent navigation bars, link checking and a graphical representation of the site structure.

Building on the ideas introduced by Gentler and Siteview, we developed a third tool, *StyleGeezer* (Marsden, Palmer and Thimbleby, 1998), which concentrates on delivering the core features of the earlier tools in a simpler and more usable way. Using these tools, designers can easily recreate the site, making global changes to the design – for example, changing background colour across the whole site

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Practical authoring tools for web authoring

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without editing each individual page. This ensures consistency, and makes the maintenance task simpler, thus helping authors to manage the complexity of the design and maintenance processes.

One of the conclusions of this part of our work is that a 'computer science' approach is necessary to manage the complexity of web site authoring.

Conclusions

The approach taken in HyperAT is novel in that we integrated and implemented *established* HCI elements to ensure proper structuring and presentation of hyperdocuments, as well as to provide different modes of usability evaluation of the hyperdocuments. In contrast, the approach taken in Gentler, Siteview, and StyleGeezer was based on the *practical needs* of the existing RSA web site.

Even though the approaches taken in both investigations were different – the former based on established principles and the latter on practical needs – the features and functionality implemented in these tools which we believe to be useful in web authoring are similar. This has significant implications: there is indeed a real need for better authoring and usability testing features in authoring tools to help designers to ensure that quality web documents are produced.

Future work will involve validating the tools and the approach they represent with different types of designers (novice, intermediate, experienced), as well as strengthening the usability environment the tools can offer to help designers build better and more usable web pages. Given the substantial commercial interest in the area, and hence the difficultities of doing work that appears successful, we believe that managing complexity, quality, and actual user needs (as opposed to their more obvious 'consumer' wants) is where HCI research should be going.

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Acknowledgements

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Wanted – articles on Software Support for HCI. The Software Support series gives leading practitioners and researchers the opportunity to discuss how user interface software tools, along with supporting methods and techniques, can aid in the production of good human-computer interfaces. Possible topics include:

- User interface specification, design and construction tools
- Specification and design methods to support their use
- Tools which aid in interface evaluation and testing
- Case studies on such tools and their success (or not, as the case may be!)
- Intelligent and adaptive front-ends
- Visual Programming
- Programming by example and demonstration systems

This list is not exhaustive: any article that fits under the heading 'Software Support for HCI' will be considered for publication. Please send submissions to: Dave Clarke; email: Dave@visualize.demon.co.uk (or on disk c/o Inter*faces*, address on back cover). Articles should be sent in RTF, MS Word or straight ASCII format. Length should not exceed 3000 words. Figures and references may be included where appropriate.

...continued from page 9

Sinister Scrollbar in the Xerox Star Xplained

Alan Dix

In my previous article *Hands across the screen – why scrollbars are on the right and other stories* (Interfaces 37), I explained how the scrollbar first moved to the right in the Xerox Star interface, but that I did not believe this was the correct place for it. Whilst at the CHI 98 conference I was able to talk to David Smith, now of Stagecast Software, who worked as part of the Star design team.

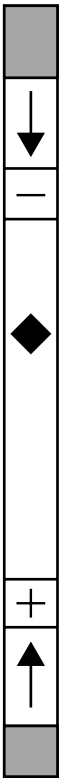
He explained how the movement of the scrollbar to the right was not an accident, but a deliberate design decision. The reasoning was that precisely *because* the left-hand side of the screen is important for reading text it is also important to keep it clear of unnecessary visual clutter. Hence the scrollbar, which had been on the left in the Smalltalk and InterLisp environments, was moved to the right-hand side.

So, given my pronouncement that the right-hand side is a bad idea, am I wrong or were they?

In fact, the answer is that the Xerox Star scrollbar is fundamentally different from current scrollbars and hence the problems I highlighted with current right-hand scrollbars do not apply to the Star scrollbar.

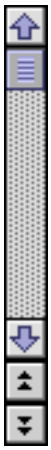
Looking at the Star scrollbar (right), it has three types of control:

1. the arrows which move the text a line at a time
2. the +/– buttons which move the text a page at a time
3. the scroll area with its diamond shaped 'handle'



The arrow and page up/down buttons are similar to current scrollbar buttons and the scrollbar 'handle' similarly allowed one to scroll to any point in the document. The major difference, however, between this and current scrollbars is that both kinds of large movement (2 and 3) moved to page boundaries. In each case the top of a page is aligned with the top of the screen. This is very similar to the redesign of the page up/down buttons in my previous article and the disorientation as one tries to match the old and new pages is thus not an issue. Only the line up/down buttons move the text to other, non-page-boundary offsets. This is also not a problem as the small movements make reorientation easy, and for repeated line-by-line movement it is possible to position the mouse and then watch the screen as the mouse is clicked or held down for continuous scrolling.

As the Star evolved into the Macintosh, Windows and X environments, the design changed to the current dragging form where the 'handle' is grasped by the mouse and moved to an *arbitrary* point in the document. The design changed, but the rationale for placement was not revisited, leading to the current, unsatisfactory situation.



Another bit of design rationale that got lost in this transition was the direction of the arrows on the scrollbar. On most current scrollbars the line-by-line arrows point outwards, whereas the Star arrows pointed inwards. In both cases, pressing the upper arrow makes the window move upwards in the text (and hence also the scrollbar handle moves upwards). Recall, there is no obvious 'right' answer for this. If the arrows point outwards they match the movement of the handle, but the text moves in the opposite direction (as you move up the document the text moves down). If, instead, the arrows point inwards they match the movement of the text on the screen, but oppose the movement of the handle (the downwards arrow moves you upwards in the document).

David Smith described to me how, in the first version of the design documents for the Star, the scrollbar arrows pointed outwards as they do in modern interfaces. However, unsure of the correct orientation, the Star design team performed user studies with both orientations. Whereas the software designers were quite happy with the outwards form, the non-computing users were uniformly confused by this direction of arrows, hence the inwards pointing arrows were adopted for the final Star design. Unfortunately when the Star design documents were passed on to the later design teams for the Lisa and Macintosh, the initial, *wrong* version of the scrollbar designs was used! Hence we came by our current scrollbar arrow direction by accident and it is precisely the opposite of what was found to be easy to use.

In both these examples, we see that apparently minor design changes can radically affect the feel and behaviour of an interface widget. Little things really do matter.

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Simon Buckingham Shum

I think I'm under the spotlight in this particular issue because I run the British HCI Group's Web resources! (I also edited an IJHCS special issue on Web Usability last year.) I currently reside at the Knowledge Media Institute (Open University), and come to HCI with a background in psychology (York) and ergonomics (UCL). I worked with Rank Xerox EuroPARC (1989–92), studying approaches to capturing software design rationale, then on the Esprit AMODEUS-2 Project evaluating HCI modelling techniques. I'm now occupied with new forms of scholarly publishing, knowledge management, document visualization and the history of knowledge media. <WWW: kmi.open.ac.uk/sbs>

What is your idea of happiness?
Time with old friends.

What is your greatest fear?
Giving the wrong impression in questionnaires.

With which historical figure do you most identify?
Adam.

Which living person do you most admire?
Nelson Mandela.

What is the trait you most deplore in yourself?
Selfishness (especially when hungry).

What is the trait you most deplore in others?
Closed minds, and refusing to accept I'm right.

What vehicles do you own?
Annie the Astra and my bike.

What is your greatest extravagance?
A Simmons drumkit.

What makes you feel most depressed?
Unforgiveness. Dead religion.

What objects do you always carry with you?
My specs. Key-ring penknife.

What do you most dislike about your appearance?
Appearing unfriendly when I'm nervous.

What is your most unappealing habit?
Being too abstract or aggressive in discussions.

What is your favourite smell?
Freshly mown grass and fried mushrooms.

What is your favourite word?
ruach (Hebrew for life energy).

What is your favourite building?
My home.

What is your favourite journey?
The road approaching Yosemite valley.

What or who is the greatest love of your life?
Jackie my wife and X my baby (in press!).

Which living person do you most despise?
I have serious problems with Margaret Thatcher and tabloid editors.

On what occasions do you lie?
Research grant bids … and to save people embarrassment (not mutually exclusive).

Which words or phrases do you most overuse?
'Umm, so, maybe…'

What is your greatest regret?
Being directed as a child to learn piano instead of drums.

When and where were you happiest?
Getting wed. Walking in the Dales at New Year.

How do you relax?
Films, music, wine, tennis, dancing, reading, drumming, darts.

What single thing would improve the quality of your life?
3 research assistants.

Which talent would you most like to have?
Saxophone virtuoso.

What would your motto be?
Celebrate and subvert.

What keeps you awake at night?
Discovering my latest theory of everything is flawed.

How would you like to die?
Ready.

How would you like to be remembered?
As someone who never lost his spark.

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ECAI'98
23–28 August, 1998, Brighton, UK
Further Info: ECAI-98 Secretariat, Centre for Advanced Software Applications, University of Sussex, Brighton, BN1 9QH, UK; Tel: +44(0)1273 678448; Fax: +44(0)1273 671320; Email: ecai98@cogs.susx.ac.uk; URL: http://www.cogs.susx.ac.uk/ecai98

15th IFIP World Computer Congress 'The Global Information Society on the Way to the Next Millennium'
31 August – 4 September, 1998, Vienna and Budapest
Further Info: Email: ifip98@ocg.or.at; URL: http://www.ocg.or.at/ifip98

ICCHP '98: the 6th International Conference on Computers Helping People with Special Needs
31 August – 4 September, 1998, Vienna and Budapest.
Further Info: Dr. A. D. N. Edwards, Department of Computer Science, University of York, York, ENGLAND, YO1 5DD; Tel: + 44 1904 432775; Fax: + 44 1904 432767; Email: alistair@minster.york.ac.uk; URL: http://www.ocg.or.at/VERA/IFIP98/ICCHP/icchp.html

HCI'98
1–4 September, 1998, Sheffield, UK
Further Info: HCI'98 Conference Coordinator, Conference 21, Sheffield Hallam University, Sheffield, S1 1WB, UK; Tel: +44 (0)114 225 5334; Fax: +44 (0)114 225 5337; Email: hci98@shu.ac.uk; URL: http://www.shu.ac.uk/hci98
Summary: The HCI annual conference is the primary European conference on human–computer interaction. The conference regularly brings together researchers and practitioners concerned with the effective utilisation of computing and communication technology by humans, organisations and society. This year's conference, HCI'98, is to be held at Sheffield Hallam University. In addition to the usual presentation formats, an innovation at this year's conference is the inclusion of research symposia, at which full technical papers will be discussed in a highly interactive format. The field of human–computer interaction is multidisciplinary and includes contributions from the human and social sciences, computer science, technology, education and design. With the widespread adoption and integration of computing and communication technology the relevance of HCI is more significant than ever before. In addition, the current advances in technology present further opportunities and challenges for practitioners and researchers within the HCI community. Specifically, the professional exploitation of multi-media technology provides a rich domain which is creating new demands for effective methods and tools. HCI'98 provides an opportunity to further investigate and develop theory and practice within all of these areas.

BCS – Formal Aspects of Computing Science: Formal Aspects of Human Computer Interaction Workshop
5 /6 September, 1998, Sheffield, UK
Further Info: Prof. Jawed Siddiqi, Sheffield Hallam University, School Of Computing and Management Sciences, Sheffield, S1 1WB, UK; Tel: +44 (0) 114 225 3171; Fax: +44 (0) 114 225 3161; Email: j.i.siddiqi@ shu.ac.uk; URL: http://www.shu.ac.uk//fahci/
Summary: One particular thread in HCI, that's been around for less than a decade and is the focus of this series of workshops, is application of formality to HCI. What does formality have to offer in this debate about the foundations and nature of HCI? What types of formality are relevant? What are the benefits and limitations in applying formality to HCI? Formality has a recognised place in computer science in general, and software engineering in particular, and the arguments have been frequently stated. The workshop will ask: Are the arguments justifying the use of formality in constructing software systems pertinent to HCI? To what extent does the use of formality make explicit the concerns of human factors? How do broader characterisations of formality assist in modelling and analysing interaction?

Reliability and Safety of Human-Machine Systems
6–13 September, 1998, Knossos Royal Village, Crete
Further Info: Reliability and Safety Summer School, Virginia Bocci, Laboratorio Multimediale, University of Siena, Via del Giglio, 14, 53100 Siena, ITALY; Fax: +39 577 298461; Email:school@media.unisiena.it; URL: http://www.media.unisi.it/school
Summary: There is an increasing use of automation in contexts where humans and machines interact in process control, transportation, medical systems and many other fields. The dependability analysis and evaluation of these systems requires an integrated approach, considering the hardware, software and human components and their interactions. Aim of the summer school is to help researchers and practitioners in developing the interdisciplinary competencies that are needed for the design, analysis and evaluation of human–machine systems. Lecturers will be expert senior researchers from the different disciplines concerned (human reliability and cognitive science, hardware and software dependability). They will introduce common goals, needs and problems of the different disciplines, and will describe the existing methods for quantitative and qualitative analysis and evaluation of human–machine systems. Practical work groups on case studies will help young students to link this information across discipline boundaries.

DEUMS98 – IFIP 13.2 Working Conference: Designing Effective and Usable Multimedia Systems
9–11 September, 1998, Stuttgart, Germany
Further Info: Fraunhofer IAO, Conference Office (DEUMS), Maren Rehpenning, Nobelstrasse 12, D-70569 Stuttgart, Germany; Tel: +49 711 970 2188; Fax: +49 711 970 2299; Email: Maren.Rehpenning@iao.fhg.de; URL: http://www.swt.iao.fhg.de/deums98
Summary: Designing Effective and Usable Multimedia Systems (DEUMS) brings together contributions from researchers and practitioners that describe design problems and solutions for improving product usability. In doing so they provide a variety of perspectives on design support, as well as advancing the understanding of usability issues and the design process for multimedia.

5th International Conference on Object-oriented information systems
9–11 September, 1998, La Sorbonne, Paris, France
Further Info: G. Grosz, OOIS,98, C. R. I., University of Paris 1 Pantheon-Sorbonne, 90, rue de Tolbiac, 75013 Paris, France; Tel: +33 (0)1 40 77 46 34; Fax: +33 (0)1 40 77 19 54; Email: OOIS98@univ-paris1.fr; URL: http://panoramix.univ-paris1.fr/CRINFO/OOIS98
Summary: OOIS'98 addresses recent research in object-oriented concepts and principles, object-oriented methods and tools, as well as industrial projects.

Second one-day workshop on Information Retrieval and Human Computer Interaction
11 September 1998, Glasgow, Scotland
Submissions by 7 August
Further Info: Dr Mark D Dunlop, BCS IRSG Chair, Computing Science, University of Glasgow, Glasgow G12 8QQ, Scotland; Tel: +44 (0)141 330 6035; Fax: +44 (0)141 330 4913; Email: chair.irsg@bcs.org.uk; URL: http://irsg.eu.org/
Summary: Papers describing work in progress or completed work are invited on any topic in areas related to work addressing issues between the classic fields of Human Computer Interaction (HCI) and Information Retrieval (IR). Possible topics include, but are not limited to: Evaluation of IR systems; Novel interaction techniques for information retrieval; Understanding the nature of relevance; Visualisations of interactive searches (2D and 3D); Browsing based information retrieval (inc. hypermedia); Conversational modelling of information retrieval tasks; Navigation through complex paths of information; Networked information retrieval; Multimedia information retrieval.

DESIGNING COLLECTIVE MEMORIES: 7th Le Travail Humain Workshop
14 September 1998, Paris, France
Further Info: Ginette Larvor, CNRS-UVHC - LAMIH, PERCOTEC, Le Travail Humain - B.P. 311, 59304 VALENCIENNES CEDEX France; Tel: +33 3 27 14 13 93; Fax: +33 3 27 14 12 94; Email: Travail.Humain@univ-valenciennes.fr; URL: http://www.univ-valenciennes.fr/TH/
Summary: Communities, living in the same geographical area or spread all over the world, build and use artifacts, like tools, narratives, traditions, etc., to keep alive and evolve their identity. Collective memories belonging to communities are not just a way for accumulating and preserving but also for sharing and developing knowledge. Indeed, as knowledge is made explicit and managed by a community, it enriches the local culture and the current practices, becoming a basis for communication and learning. Recently there have been several attempts to 'capture' the knowledge produced within organisations by their workers, and some project has been started for the development of tools supporting collective memories in local communities. These systems try to exploit the potentiality of the information technology to capture and distribute the knowledge produced by human beings during the working, everyday or leisure activities.

7th IFIP Working Conference on Engineering for Human–Computer Interaction (EHCI'98)
14–18 September, 1998, Heraklion, Crete, Greece
Further Info: Len Bass, SEI/CMU, 5000 Forbes Avenue, Pittsburgh, PA 15213-3890, U.S.A.; Email: ljb@sei.cmu.edu; ehci98@imag.fr; URL: http://iihm.imag.fr/EHCI98 or http://www.sei.cmu.edu/~EHCI98
Summary: EHCI'98 will take place at the Knossos Royal Village, in Heraklion. It is a single-track conference organised by IFIP Working Group 2.7 (13.4). Participation is limited to 60 persons and will be by invitation: authors of accepted papers will be expected to participate. Others may attend by invitation of the General Chair. Accepted papers will be included in the Conference Proceedings, published by Chapman and Hall.

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VRI'98: Visual Representations and Interpretations

22–23 September 1998, Liverpool, UK

Further Info: Dr Ray Paton, Department of Computer Science, The University of Liverpool, Liverpool L69 3BX; Email: rcp@csc.liv.ac.uk; URL: http://www.csc.liv.ac.uk/~ien/VRI/

Summary: There is often a great deal of discussion these days about multi-disciplinary research and the value of exchanging ideas and methods across traditional discipline boundaries. Indeed, it could be justifiably argued that many of the advances in science and engineering take place because the ideas, methods and the tools of thought from one discipline become re-applied in others. Sadly, it is also the case that many subject areas develop specialised vocabularies and concepts and indeed may also approach more general problems in fairly narrow subject-specific ways. As a result barriers develop between disciplines that prevent the free flow of ideas and the collaborations that could often bring success. This workshop is intended to break down such barriers.

First Workshop on Embodied Conversational Characters

12–15 October, 1998, Tahoe City, California, USA

Further Info: Joseph W. Sullivan, FX Palo Alto Lab, USA; Email: sullivan@pal.xerox.com; Justine Cassell, MIT Media Laboratory, USA; Email: justine@media.mit.edu; URL: www.fxpal.com/wecc98/

Summary: Recent advances in several core software technologies have made possible a new type of human–computer interface: the conversational character. Conversational characters are autonomous, anthropomorphic, animated figures that have the ability to communicate through multiple modalities, including spoken language, facial expressions, and gestures. The primary goal of this workshop is to advance the state of conversational character research and development by identifying novel approaches to the topics and issues listed below, and integrating them into a framework for embodied, conversational human–computer interaction.

13th IEEE International Conference on Automated Software Engineering (ASE'98)

13–16 October, 1998, Honolulu, Hawaii

Further Info: Alex Quilici, Department of Electrical Engineering, University of Hawaii at Manoa, 2504 Dole Street, Honolulu, Hawaii 96822, USA; Tel: +1 808 956-9735; Fax: +1 808-956-3427; Email: alex@wiliki.eng.hawaii.edu; URL: http://www.ics.uci.edu/~ase98

Summary: The IEEE International Conference on Automated Software Engineering brings together researchers and practitioners to share ideas on the foundations, techniques, tools and applications of automated software engineering technology. Both automatic systems and systems that support and cooperate with people are within the scope of the conference, as are computational models of human software engineering activities. ASE-98 encourages contributions describing basic research, novel applications, and experience reports.

4th International Conference on Networking Entities – NETIES'98

14–15 October 1998, Leeds, UK

Further Info: Marie-Claire Andrews, Assistant Conference Co-ordinator, Conference Office, A135 Faculty of Information and Engineering Systems, Leeds Metropolitan University, Calverley Street, Leeds, LS1 3HE, England; Tel:+44 (0) 113 283 2600 extn 6738; Fax:+44 (0) 113 283 3110; Email: j.paulin@lmu.ac.uk; URL: http://www.lmu.ac.uk/ies/conferences/neties98.htm

Summary: An E.A.T.A. (European Association for Telematic Applications) two-day conference entitled 'Networking for the Millenium'. This year's conference theme centres on the use of telematics to transform the way people work within organisations. We aim to attract over 100 delegates from home and abroad, from academic institutions and SMEs.

4th ERCIM Workshop on 'User Interfaces for All'

19–21 October 1998, Stockholm, Sweden

Submissions by 1 September

Further Info: *Programme Committee Chair*: Dr Constantine Stephanidis, ICS-FORTH, Science and Technology Park of Crete, Heraklion, Crete, GR-71110 Greece; Tel: +30 81 391741; Fax: +30 81 391740; Email: cs@ics.forth.gr; *Local Arrangements*: Dr Annika Waern, SICS, Box 1263, Kista, S-164 28 Sweden; Tel: +46 8 752 1514; Fax: +46 8 751 7230; Email: annika@sics.se; URL: http://www.ics.forth.gr/ercim-wg-ui4all/UI4ALL-98/call.html

Summary: User Interfaces for All involves the development of user interfaces to interactive applications and telematic services,which provide universal access and quality in use to potentially all users. This user population includes people with different cultural, educational, training and employment backgrounds, novice and experienced computer users, the very young and the elderly, and people with different types of disabilities, in various interaction contexts and scenarios of use. This annual European Workshop aims to consolidate recent work, and to stimulate further discussion, on the state of the art in user interfaces for all. The emphasis of this year's Workshop is on methodologies, techniques, guidelines and tools, which contribute to the accessibility of the web environment, both at the application and the information content level. The overall objective is the creation of a web environment acceptable to all users, in the context of the emerging Information Society.

Fifth International Conference on Auditory Display (ICAD'98)

1–4 November, 1998, Glasgow, UK

Further Info: Email: For registration queries contact: icad98_registration@santafe.edu; URL: http://www.santafe.edu/~icad/ or http://www.dcs.gla.ac.uk/icad98/

Summary: Continuing the work of the successful series of ICAD Conferences, ICAD'98 will be held at the University of Glasgow, UK (previous proceedings of ICAD are on-line at http://www.santafe.edu/~icad/). This is the the first time the ICAD conference will be held outside the USA. ICAD is the premier forum for presenting research on the use of sound to provide enhanced user interfaces, display data, monitor systems, and for computers and virtual reality systems. It is unique in its singular focus on auditory displays, and the array of perception, technology, design and application areas that these encompass. Like its predecessors, ICAD'98 will be a single-track conference. Attendance is open to all, with no membership or affiliation requirements.

WebNet 98 – World Conference Of The WWW, Internet & Intranet

7–12 November, 1998, Orlando, Florida

Further Info: WebNet 98/AACE, P.O. Box 2966, Charlottesville, VA 22902 USA; Voice: 804-973-3987; Fax: 804-978-7449; Email: AACE@virginia.edu; URL: http://www.aace.org

Summary: WebNet – the World Conference of the WWW, Internet, and Intranet is an international annual conference that serves as a multi-disciplinary forum for the exchange of information on the development, applications, and research on all topics related to the Web. This encompasses the use, applications and societal and legal aspects of the Internet in its broadest sense. Organized by AACE – Association for the Advancement of Computing in Education – in cooperation with WWW/Internet businesses & industry.

ACM 1998 Conference on Computer Supported Cooperative Work (CSCW'98)

14–18 November, 1998, Seattle, Washington State, USA

Further Info: Tower Building Suite 1414, 1809 Seventh Avenue, Seattle, WA 98101 USA; Email: cscw98-info@acm.org; URL: http://www.acm.org/sigchi/cscw98/

Summary: The CSCW Conference is the preeminent venue for presenting research and development achievements covering the design, introduction, and use of technology that affects groups, organizations, and society. Since its inception a decade ago, CSCW has been on the leading edge of our extraordinary expansion in the uses of technology. CSCW'98 will play an important role in framing and extending the discussion about technology's role in work and the home.

ELT 98: Innovation in the Evaluation of Learning Technologies

27 November 1998, London, UK

Submissions by 31 July

Further Info: Dr. Martin Oliver, LaTID, The Learning Centre, University of North London, 166-220 Holloway Road, London, N7 6PP; Tel: 0171 753 3109; Fax: 0171 753 5012; Email:m.oliver@unl.ac.uk; URL: http://www.unl.ac.uk/latid/elt/elt98.htm

Summary: Evaluation has a key role in the entire spectrum of educational activities, influencing course design, playing a part in Quality Assurance procedures, and so on. However, many issues remain unresolved, particularly in the area of evaluating Learning Technologies. This one-day conference is being organised as part of the BP Evaluation of Learning Technology project, and will be held at the University of North London. It will provide an opportunity for researchers with an interest in evaluation to meet and discuss problems and innovations in the evaluation of Learning Technologies.

EuropIA'98 CYBERDESIGN: Media, Communication and Design Practice

28–29 November, 1998, Paris, France

Further Info: Delia Atherton, University of Paisley, Department of Computing and Information Systems, Paisley, PA1 2BE, Scotland, UK; Tel: 44 41 848 3300; Fax: 44 41 848 3542; Email: ATHE-CI0@paisley.ac.uk; URL: http://www-cis.paisley.ac.uk/europia98/

Summary: This conference brings together researchers in design, architecture, engineering, construction management, cognitive science, computer science, artificial intelligence, sociology, geography and education as well as industry partners, practitioners and other users of media communications.

The focus for this diverse group is media communications in design practice – what type of media we use in design practice and what types of media communications tools are available to us – appropriating recent exciting developments in media communications for local area and/or wide area networks, new media types for interaction, and communications tools for multimedia.

ICLS 98: The Third International Conference on the Learning Sciences

17–18 December 1998, Atlanta, USA

Further Info: ICLS-98 Inquiries, c/o Mamie Hanson, College of Computing, Georgia Institute of Technology, Atlanta, Georgia 30332-0280 USA; Tel: (404) 894-3807; Fax: (404) 894-9846; Email: icls-info@cc.gatech.edu; URL: http://www.cc.gatech.edu/conferences/icls98/

Summary: The Third International Conference on the Learning Sciences (ICLS-98) will bring together experts from academia, research labs, and industry to discuss problems and issues regarding promoting learning in real-world situations. Insights

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into these problems will relate recent advances in our understanding of human learning and technological innovations in computing and related disciplines to the challenges posed by the real-world settings where learning occurs.

1999 International Conference on INTELLIGENT USER INTERFACES

5–8 January 1999, Los Angeles, California. USA

Submissions by 1 July 1998

Further Info: URL: http://sigart.acm.org/iui99

Summary: IUI 99 is the annual meeting of the intelligent interfaces community and serves as the principal international forum for reporting outstanding research and development on intelligent user interfaces.

HICSS-32: Collaboration Technology minitrack

5–8 January 1999, Hawaii

Further Info: Murray Turoff; Tel: 201-596-3399; Fax: 201-596-5777; Email: turoff@eies.njit.edu; URL: http://www.cba.hawaii.edu/hicss

Summary: Part of the Collaboration Systems and Technology Track at the Hawaii International Conference on System Sciences (HICSS). This minitrack deals with the theoretical and methodological foundations of research with all forms of collaboration technologies. The focus is on the development, critical evaluation, and validation of theories that guide the design, implementation, and use of collaboration technologies; and various approaches/methodologies adopted to develop, evaluate, and validate these theories.

The Active Web

February 1999, Stafford, UK

Submissions by 31 October 1998

Further info: Email: activeweb@hiraeth.com; URL: http://www.hiraeth.com/conf/ActiveWeb

WSCG'99: The Seventh International Conference in Central Europe on Computer Graphics and Visualization 99

8–12 February 1999, Plzen, Czech Republic

Submissions by 15 October 1998

Further Info: Vaclav Skala, c/o Computer Science Dept., Univ.of West Bohemia, Univerzitni 8, Box 314, 306 14 Plzen, Czech Republic; Tel: +420-19-7491-188; Fax: +420-19-7491-188; Email: skala@kiv.zcu.cz; URL: http://wscg.zcu.cz

Summary: Event in cooperation with EUROGRAPHICS and IFIP Working Group 5.10 on Computer Graphics and Virtual Worlds

WACC'99: Work Activities Coordination and Collaboration

22–25 February 1999, San Francisco, California, USA

Submissions by 24 July

Further Info: Email: wacc99@cs.colorado.edu; URL: http://www.cs.colorado.edu/wacc99

Summary: WACC'99 brings together researchers and practitioners from a variety of disciplines who are addressing or facing issues in work activities coordination and collaboration. Various aspects of this topic have been addressed previously under the separate banners of workflow, software process, groupware, and computer-supported cooperative work.

GW '99 – THE 3rd GESTURE WORKSHOP: 'Towards a Gesture-based Communication in Human–Computer Interaction'

17–19 March 1999, Gif-sur-Yvette, France

Submissions by 12 September (long), 11 December (short)

Further Info: Gesture Workshop '99, LIMSI - CNRS, BP133, F-91403 ORSAY cedex, FRANCE; Email: gw99@limsi.fr; URL: http://www.limsi.fr/GW99/

Summary: GW is an interdisciplinary event for those researching gesture-based communication who want to meet and exchange ideas across disciplines. Under the focus of human–computer communication, the workshop will encompass all aspects of gestural communication.

PAAM99: Fourth International Conference on The Practical Application of Intelligent Agents and Multi-Agent Technology

19–21 April 1999, London, UK

Submissions by 11 January 1999

Further Info: PAAM'99 Secretariat, The Practical Application Company, PO Box 137, Blackpool, Lancs FY2 9UN, UK; Tel: +44 (0)1253 358081; Fax: +44 (0)1253 353811; Email: info@pap.com; URL: http://www.demon.co.uk/ar/PAAM99/

Summary: The emphasis of PAAM is unique. It combines the peer-to-peer paper review process of academic conferences with that of the applied industrial mainstream commercial event. The contrast of theory and practice, research and deployment is rarely found elsewhere. PAAM99 will provide a rich blend of tutorials, invited talks, refereed papers, panel discussions, poster session, social agenda and a full industrial exhibition. The result is an ideal forum for the exchange of ideas and knowledge between experts from a broad spectrum of international industries and key technologies.

Joint EUROGRAPHICS – IEEE TCCG Symposium on Visualization

26–28 May 1999, Vienna, Austria

Submissions by 11 November

Further Info: Helwig Loeffelmann, Inst. of Computer Graphics, Vienna Univ. of Technology, Austria; Email: helwig@cg.tuwien.ac.at, vissym99@cg.tuwien.ac.at; URL: http://www.cg.tuwien.ac.at/conferences/VisSym99/

Summary: The tenth EUROGRAPHICS workshops on Visualization in Scientific Computing will cover all aspects of computer-based visualization.

UM'99: International Conference on User Modeling

20–24 June 1999, Banff, Canada

Submissions by 7 November 1998

Further Info: Judy Kay Basser, Dept of Computer Science, Madsen F09, University of Sydney, AUSTRALIA 2006; Tel: +61-2-9351-4502; Fax: +61-2-9351-3838; URL: http://www.cs.usask.ca/UM99/

Summary: User modeling has been found to enhance the effectiveness and usability of software systems in a wide variety of situations. A user model is an explicit representation of properties of a particular user. A system that constructs and consults user models can adapt diverse aspects of its performance to individual users. Techniques for user modeling have been developed and evaluated by researchers in a number of fields, including artificial intelligence, education, psychology, linguistics, human–computer interaction, and information science. The International Conferences on User Modeling provide a forum in which academic and industrial researchers from all of these fields can exchange their complementary insights on user modeling issues. The size and format of the meetings support intensive discussion, which often continues long after the conference has ended.

PEOPLE IN CONTROL: An International Conference on Human Interfaces in Control Rooms, Cockpits and Command Centres

21–23 June 1999, Bath, UK

Submissions by 9 October 1998

Further Info: PIC 99 Secretariat, IEE Conference Services, Savoy Place, London WC2R OBL, UK; Tel: +44(0)171 344 5473/5467; Fax: + 44(0)171 240 8830; Email: PIC99@iee.org.uk; URL: http://www.iee.org.uk/Conf/PIC99

Summary: This new international conference aims to attract industrialists and academics with an interest in how people control complex systems – and in the tools that support them. These people may be working in control rooms for chemical plants, power stations or ships, in aircraft cockpits or motor cars, or in police or military command centres. A key aim of the conference is to bring together practitioners from different application areas so that they can learn from each other's experiences. The conference will have a broad technical scope and include: case studies from the power, chemical, aerospace or transport industries; developments of new display and control equipment; presentations of research results in ergonomics and psychology

HCI International '99: 8th Int. Conference on Human-Computer Interaction

22–27 August 1999, Munich, Germany

Submissions by 30 November 1998

Further Info: HCI International '99 – Conference Secretary, Fraunhofer IAO, Nobelstr. 12, 70569 Stuttgart, Germany; Tel: +49 711 970 2331; Fax: +49 711 970 2300; Email: HCI99@iao.fhg.de; URL: http://hci99.iao.fhg.de

Summary: Under the general theme of 'Creating New Relationships', new links and synergies will be explored between information technologies and their users, between people working together, and in the context of the rapidly evolving global information society. The conference will provide an international forum for exchanging and discussing ideas, research results and experiences related to analyzing, designing, developing, applying, and evaluating information and communication technologies for work, leisure, and personal growth.

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We are always looking for people interested in contributing to HCI group activities by, writing for Inter*faces* magazine, helping run the annual conference or joining the executive. If you are able to contribute in this way or if you have ideas for 1-day meetings or new activities please contact the membership secretary, Ismail Ismail (I.Ismail@cs.ucl.ac.uk; Fax. 0171-387-1397).

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Dynamics in Document Design:

Creating Text for Readers

Karen A. Schriver

Dynamics in Document Design: Creating Text for Readers. Karen A. Schriver. John Wiley & Sons, 1997. 560pp. ISBN 0471-30636-3.

Reviewed by
Roy Johnson, Mantex Information Services

This is a substantial piece of work produced by someone who feels passionately about document design, both as a functional and aesthetic activity, and as an under-rated profession. Karen Schriver has a lot of experience, and plenty to say.

The book is structured so as to place the whole business of information design in a historical and political context. The first two chapters deal with defining document design and showing how it has evolved from the nineteenth century to the present. This is followed by a chronological map of graphic design as a profession in the context of education, science, and technological developments in the twentieth century.

The next four chapters deal with how readers perceive and react to information, as well as offering theories of typography and layout. Finally, there is a major section on how designers can learn from user feedback, a superb twenty-one page bibliography, two indexes (author and subject), and a very interesting appendix discussing the use of common typographic symbols.

Schriver takes a reader-centred as opposed to a 'product-focused' approach. Any design solutions are acceptable only insofar as they assist the reader's understanding. In this respect she might have given more emphasis to the subtitle of her book, *Creating Text for Readers*, which appears only on the title page. The problem is that for the majority of 500-plus pages we are bombarded with too much on the process of her investigations rather than her results. There's a great deal on 'how the research was conducted' and 'what we found out about users' response to the data'. This approach might be suitable for academic research papers but it seems out of place here, even though some of the readers' responses to Web screens were interesting. (The lesson is – keep it simple, make it readable, give plenty of information.)

For instance, the author discusses the problems of establishing academic respectability for writing as a discipline – which is less to do with document design than the sociology of a profession. Then in her chapter on the history of design in the twentieth century she goes into the details of plain language campaigns in the USA, the UK, Canada, and Australia – plus the 'History of the Mechanical Pencil'. All of this is reasonably interesting, but it's a long way from a book that is intended for 'the writers and graphic designers who create the many types of documents people use every day'.

The fundamental problem seems to be that the book is trying to do two things at the same time. It's offering an academic study of communication theory as well as a practical guide to good design. (The majority of the abstractly titled second chapter – 'Evolution of the Field: Contextual Dynamics' – could be placed directly in an academic journal on the history of education in the USA.) Sometimes these two objectives work against each other. For instance, the author gives a lengthy account of research into teenagers' responses to drug-prevention brochures, revealing how political correctness and naïvety in their design makes them ineffective. But one glance at the examples by anyone with an ounce of wit would reveal the same as fifty-six laboured pages of research and analysis.

The author also devotes forty pages to the difficulties of linking two VCRs and a TV by following the manufacturer's instructions. The problems of such tightly printed instructions – which I think we all know – are elaborated at the expense of solutions. It's not really clear which group of readers would need an extended account of grappling with poor instruction manuals. Most of the book's readers will want advice on design that is more effective and efficient. She becomes more instructive when she arrives at a chapter on typography and the use of space in good document design. However, a case study on the appropriateness and legibility of type is preceded by twelve pages describing the research conditions before we reach the results.

When the author introduces the application of Gestalt psychology to perceptions of visually presented information, we seem to be due for profound revelations, but instead we're taken straight back into the realm of the obvious. Yes – those mobile phone instruction leaflets are badly designed. She spends ten pages describing a problem which a good graphic designer such as Robert Parker would show you in one. She even finishes by describing the design of her own book. It's an elegant production, but this sort of thing is self-indulgent, and it isn't helped by language which is often trying harder to be impressive than to communicate clearly. 'I present a ten-stage iterative heuristic for structuring content' isn't exactly a reader-centred style, is it?

The overall argument is that designers must pay attention to readers' needs – both for the sake of the reader and the successful outcome of design. When designing documents for general public consumption, the writing should be very simple, the diagrams clear, and all stages in any process clearly distinguished. All this is worthy and good. If only the author had followed her own advice, and hadn't spent such enormous amounts of effort proving what seems rather obvious.

This is a piece of work that I suspect is bidding to become a standard text. On the strength of its research, it may well succeed; but busy writers and designers will probably want advice that is more succinct. They don't have time to be reading 500-page manuals. However, I'm sure it will find its way into the library of any institution which pretends to teach the principles of good written communication.

The Active Web

Part 1

The web is changing. Its pages are no longer static, but moving, changing, interacting. Even as we watch, it is evolving from an information repository into a distributed interface to a global networked computational engine. But this change has its price. Can users understand what they are seeing? How do you choose the right technology? Or do you just try a bit of everything? No, the right answer, as with any design problem, is to match the technology to the needs. Sometimes, for marketing or image reasons, this means the newest technology just because it is the newest and sexiest. But when functionality and usability matter it is likely to mean a blend of technologies and often a socio-technical solution, involving, dare we say it, people!
This is the first part of a two-part article. In this part we'll look at the issues affecting the choice of an appropriate web technology and at the use of basic animation and media. In the next issue of Interfaces we'll examine several scenarios for adding interactive elements to web pages and for generating and updating web pages from databases.
keywords: *world-wide web, interaction, design, HCI, CSCW, Java, JavaScript, JDBC, CGI, servlets*

Why I'm writing this

I'm writing this article because I've had to tell it more times than I care to count. Again and again undergraduate and postgraduate students have come to me wanting to do a project using the web. What technology should they be looking at?

Of course, there is so much to choose from:

- general languages and mechanisms to make your pages come alive: Java, JavaScript, CGI, servlets, VRML, Active Server Pages, Dynamic HTML
- vendor-specific products to access data stored in their own database or media formats: ShockWave, Oracle Web Server, Domino
- research systems: including HyperAT discussed in this issue of Inter*faces* [7], GMD's BSCW (Basic Support for Cooperative Work) web-based shared document repository [2, 16], and other systems presented at numerous web conferences and workshops [3, 4, 5]
- streaming media: CuSeeMe, RealVideo, RealAudio
- push technology: although this is perhaps on the wane, it looks forward to the coming of interactive TV and PopuNET [12]

The essence of design is to choose techniques appropriate for the material and purpose. Although this may mean the latest or most exciting technology, often it will not. Most important, most students (and, looking at systems around us, many interface designers) look only to a technical solution. The real art is in designing the whole socio-technical system. This has the added plus that the technical part is easier and more robust!

I've sent my students scurrying through every bookshop and library, searching for a good comparison of techniques. But to no avail. Books on CGI scripting tell you why it is a good idea, books on Java tell you about applets, books on Dynamic HTML tell you everything it can achieve, and of course the vendor-specific products will give you the earth.

So, I'm writing my own short account to save me telling my students the same story again and again next year and also so that you can perhaps give it to yours.

The static web – should it stay still?

In the early days the web was simply a collection of (largely text) pages linked together. The material was static or slowly changing and much of it authored and updated by hand. Some pages were generated on the fly, in particular the gateways into ftp servers and to gophers, which were so important in adding 'free' content to the web (see my discussion of this in [10]). However, even here the user's model was still of a static repository of information. Web surfers may not have always known where they were, but they had a pretty good idea of what they were seeing and that if they came back it would be the same.

It was a pleasant, if somewhat boring world, but from a usability viewpoint was wonderful – a consistent interface to terabytes of information. Who could ask for more? Indeed, this is one of the key arguments Nielsen brings against frames-rich sites in his famous alertbox, *Why frames suck (most of the time)* [6] – frames break this simple user model and hence cause trouble. Nielsen calls for a new richer model for the web, which preserves the simplicity of the old model, but which can accommodate and guide the development of new features.

Well, if frames cause trouble, what about applets, timed refreshing pages, roll-overs, dynamic content creation? What are we interacting with – is it information, is it computer systems? In fact this has been a problem with hypertext interfaces well before the web existed. Back in 1989, Janet Finlay (our editor) and I wrote about the potential problems of these shifts between passive and active paradigm within an interface [8]. Our solution was to accept these differences, but to make them evident to the user through the design of an effective medium of interaction. Of course it's easy to say…

"As HCI researchers and designers, we can neither ignore nor uncritically accept new technology in the web. The active web is here, our job is to understand it and to learn how to use it appropriately."

As HCI researchers and designers, we can neither ignore nor uncritically accept new technology in the web. The active web is here, our job is to understand it and to learn how to use it appropriately.

Alan Dix

Let's look at the issues which affect the choice of active web techniques.

The user view

One set of issues are based on what the end-user sees, the end-user here being the web viewer.

- **What changes?** This may be a media stream (video, audio or animation) which is changing simply because it is the fundamental nature of the medium. It may be the presentation or view the user has of the underlying content, for example, sorting by different categories or choosing text-only views for blind users. A special form of presentation change is when only a selection of the full data set is shown and that selection changes. The deepest form of change is when the actual content changes.
- **By whom?** Who effects the changes? In the case of a media stream or animation the changes are largely automatic – made by the computer. The other principal sources of change are the site author and the user. However, in complex sites users may see each other's changes – feedthrough.
- **How often?** Finally, what is the pace of change? Months, days, or while you watch?

We'll use the 'what changes?' categories as we examine alternatives and trade-offs in more detail below. But first we need to also look at the technological constraints.

Technology and security

The fundamental question here is where 'computation' is happening. If pages are changing, there must be some form of 'computation' of those changes. Where does it happen?

- **client** One answer is in the user's web-browsing client enabled by Java applets, various plug-ins such as ShockWave, scripting using JavaScript or VBScript, and most recently Dynamic HTML with layers, CSS and DOM.
- **server** The second is at the web server using CGI scripts (written in Perl, C, UNIX shell, Java or whatever you like!), Java servlets, Active Server Pages or one of the other server-specific scripting mechanisms. in addition, client-side Java applets are only allowed to connect to networked resources on the same machine as they came from. This means that databases accessed from client-side JDBC must run on the web server.
- **another machine** Although the pages are *delivered* from the web server, they may be *constructed* elsewhere. For hand-produced pages, this will usually be on the page author's desktop PC. For generated pages, this may be a PC or a central database server.
- **people** Of course, as noted earlier, the process of production and update may even involve people!

It is easy to roll out maxims such as 'users first', but, in reality, the choice between these options is not solely a matter of matching the end-user requirements. The best choice also depends on the expertise of the web developer and external limitations. If the server runs on a UNIX machine, you can't expect to use Microsoft Active Server Pages. On the other hand, if you are designing for an intranet you may even get to influence the choice of client software and so make it easier to use more complex client end.

The choice of technological solution is also heavily influenced by issues of security. When we do any computation on data the computation and the data must be in the same place [11]. This apparently simple factor means that if we want to keep data secure (read 'on well protected servers') then we must also perform the critical computation on the servers. For example, imagine a password check. It would be foolish to send the correct password to a Java applet to check!

Animation and media

Simple animations, such as animated gifs and QuickTime movies are now passé. The appropriate use of them is rather rare. The majority are used as the on-screen equivalent of Las Vegas neon lights, not only threatening neurological damage, but sucking up network bandwidth and CPU cycles in the process. The worst offenders are perhaps cycling animated gifs which cause reloads every cycle. Of course long cycles with subtle changes are OK (but then I would say that because I've used them myself in my Magisoft pages [14]). On the other hand there are excellent uses of short video clips to add life and give explanations of

Magisoft Wand – watch it carefully

Continued overleaf…

The Active Web

dynamic phenomena. An example is the Glasgow University web site for the Hunterian Museum, which is aimed at children [13].

The need to download movies and gifs puts sharp limits on the length of clip that can be shown. Streaming media over the Internet, such as RealVideo, RealAudio and CuSeeMe, allow potentially unlimited sources. As well as longer prepared clips, these techniques allow live transmission (e.g. live radio broadcasts over RealAudio) and long recorded sequences for asynchronous communication. An excellent use of the latter is the Classroom 2000 project [1, 15], which links recordings of audio and video during a lecture with pen strokes on an electronic whiteboard, so that students can play the part of a lecture associated with any slide, or annotation.

Figure 1 – **Hunterian Museum: learning about Romans**

Figure 2 – **Classroom 2000: recording a lecture**

Acceptable streaming video and audio is achieved by a combination of high compression and large client-end buffers. The former leads to loss of quality including blurring and ghosting after rapid changes in screen content. The latter leads to delays, often of several seconds, which makes it impossible to support video-conferencing (CuSeeMe uses little buffering and hence is more likely to suffer break-up of video and audio). The challenges of achieving high quality transmissions (e.g. for video on demand) and low latency (e.g. for video-conferencing) are active research topics in multimedia technology.

Stepping back a bit to look again at this, note that it is often not raw bandwidth which is the problem on the Internet, but packet losses and jitter (varying latency). This can be solved by trading off quality against

...continued from page 19

delay, which is OK for fixed content, or low pace change (as in Classroom 2000), but is problematic when we require a *high pace* of interaction (as in video-conferencing).

Are you interested?

Are you working on active web technology either as a researcher or practitioner? If so you may be interested in a workshop on 'The Active Web' to be held in February 1999. The call for papers will be on the web by the time this issue reaches you, so look at:

http://www.hiraeth.com/conf/ActiveWeb

for up-to-date information ...

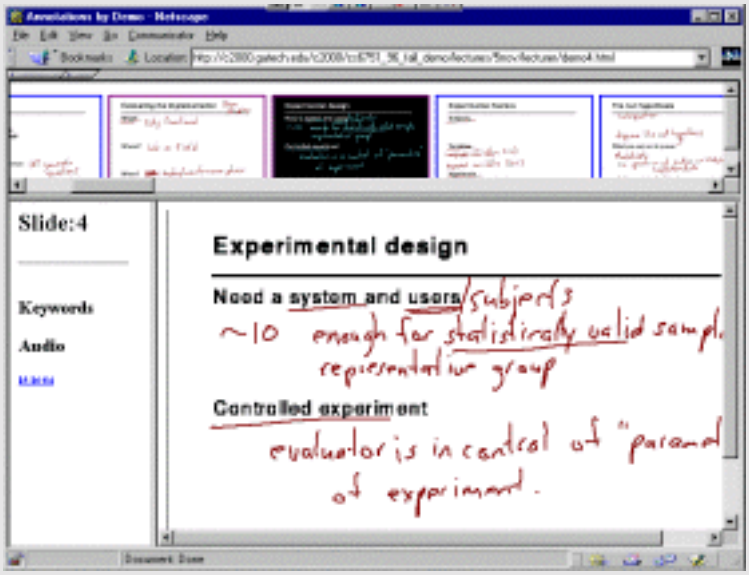

Figure 3 – **Classroom 2000: indexed playback on student's web browser**

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Other URLs to visit

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14. Magisoft Wand (animated gif) <http://www.magisoft.co.uk/>
15. Classroom 2000 project, GVU Georgia Tech. (Real Audio and Video) <http://www.cc.gatech.edu/fce/c2000/>
16. Basic Support for Cooperative Work, GMD, Germany. (web-based shared document space) <http://bscw.gmd.de/>

The web version of this article has more active links to technology and examples:
<http://www.hiraeth.com/alan/papers/ActiveWeb/>

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CHI 98 Human Factors and Computers

Los Angeles 18–23 April 1998 – Trip report

Andrew Monk and Leon Watts

Andrew Monk and Leon Watts were supported by the ESRC Cognitive Engineering Research Programme (Grant L127251024). Andrew Monk's visit to the conference was also supported by Academic Press.

On the way to L.A. we stopped off in Pittsburgh to visit the HCI Institute at CMU. Andrew Monk gave a talk: "Participants, bystanders, and eavesdroppers: overhearing during video mediated communication". We also took part in a teaching session organised by our host Bob Kraut. The HCI Institute has a very impressive list of staff including Bonnie John, Sara Kiesler, Brad Myers, Christine Neuwirth and Randy Pausch. The current director, Dan Olsen, is in the process of moving back to Brigham Young University. It will be interesting to see who they recruit to take his place. The Institute is effectively an HCI department within a "School of Computer Science", the latter being more like a faculty in a British University. They make their own tenure decisions and teach their own courses (graduate only). Our main reason for visiting was to talk with Bob Kraut and Jane Siegel about their research on the use of video-images-of-work that closely parallels our own on multi-media communication in remote assistance tasks. We also had some productive meetings discussing their ambitious "Home net" project. Sponsored by Apple and other companies, they have put a PC and internet connection in the homes of 110 carefully selected families and then monitored their usage over a two or three year period (see Kraut et al., CHI 98 Conference Proceedings, for the latest results from this study).

Prior to the conference proper Leon Watts took part in the Basic Research Symposium, a two-day pre-conference event. His paper was entitled "Understanding people and computers", reviewing the state and direction of HCI research. Our paper, given by Andrew Monk, was entitled "Peripheral participation in mediated communication". As in previous years a large part of the programme was given over to research on the fusion of communication and computing devices. Notable amongst these were: Kraut's paper (see above); a thorough study of Lambda MOO by Schiano and White; some interesting ideas on how video quality-of-service may be driven by awareness in a virtual environment, by Reynard et al., and two studies of voicemail usage by Wittaker et al. (the latter are both in the CHI 98 Summary). The presence of mobile telephone companies was very visible and one of the most popular panels was "Baby faces: user-interface design for small displays", with contributions from Ericsson and Nokia. Perhaps the most dramatic of the papers on communication was by Paulos and Canny from Berkeley who had built "personal roving presences", robots with cameras, microphones and speakers, that present an image of their remote operator and can make gestures, etc. Early versions of these personal roving presences were helium blimps of human proportions that could be steered around someone else's building and controlled over the internet. These turned out to be difficult to control and later versions took the form of a drivable trolley!

Other fun technical innovations included haptic displays (amazing what one can do with servo-motors and bicycle cables), pen-based input (three papers), and various applications of sensing technologies (face tracking, sensing emotional state via physiological measures, and a kiosk that senses prospective clients). There were five papers illustrating different forms of Ishii's (MIT Media Labs) tangible bits idea. The user manipulates objects, such as blocks, and these manipulations are sensed to produce effects of various kinds. For example, objects representing components of holographic equipment were used to simulate laser experiments (see Underkoffler and Ishii). The objects were sensed by a computer that could then project a dynamically changing diagram of the laser beams that would be created onto those objects using a ceiling mounted video projector.

The three conference themes were medicine, entertainment and education. I did not follow the education theme. I found the medicine papers worthy but not challenging (they were mainly concerned with computerised records and the like) and the entertainment papers somewhat superficial. The latter divided into papers on the software used in the film industry and supposedly entertaining installations (e.g. an artificial stream with computer generated text projected onto it, by White and Small). Entertainment has to be the way computers finally get into the home, but if these papers are anything to go by, no one knows how to do it yet.
CHI 99 is in Pittsburgh, and one of the conference themes will be HCI for older people. This may have something to do with the fact that many of the originators of CHI are no longer spring chickens. Indeed HCI has a history, as was illustrated in two sessions "Honouring our elders", the elders in question being Doug Engelbart and the designers of the STAR and LISA interfaces. Finally, we should mention the starting and finishing plenary sessions. Both had a high moral tone. The former, by Ben Shneiderman, admonished us to change the world in a socially responsible manner. In the latter Brenda Laurel explained how her idea of humanism had in many ways guided her work on the Purple Moon computer games for 8–12-year-old girls. It is easy to sneer at this kind of rhetoric but I am sure that many HCI researchers do care about making the world a better place. It was stimulating to have two speakers asking us to think about the criteria we use to judge our work from this moral point of view.

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GRAPHIC DESIGN COMPETITION

Design the British HCI Group's new logo for Print and Web

Calling all Graphic/Interaction Designers (especially students) . . .

The British HCI Group is looking for a new logo to express its identity. This is your chance to prove your skills, and add a major item to your portfolio.

The Prize . . .

Your design will be used on the Group's website <http://www.bcs.org.uk/hci/>, all printed publicity (e.g. posters, newspaper adverts), stationery (letterhead), and publications such as Inter*faces* magazine, the proceedings of the annual HCI Conference (published by Springer-Verlag), and all the conference merchandising (bag, T-shirt, etc).

You will be acknowledged as the designer on the website.

Finally, you will receive a copy of the HCI textbook:
HUMAN–COMPUTER INTERACTION (Second Edition)
Alan Dix • Janet Finlay • Gregory Abowd • Russell Beale (Prentice Hall, 1998)
(See <http://www.hiraeth.com/books/hci/> for details)
. . . plus accompanying mouse mat!

The Brief . . .

CONTENT

You can revamp our existing logo, or create something completely new. We have no preference.
The only constraints are that our URL and name must be included:

www.bcs.org.uk/hci
British HCI Group (optionally followed by "British Computer Society" or "BCS")

BACKGROUND

The HCI Group is the largest organisation for HCI professionals in Europe. The issues that concern its members fundamentally concern the relationship of people to technology in all its forms in society. Further details on the Group's website.
The HCI Group's logo is often used in conjunction with the British Computer Society's crest of arms: http://www.bcs.org.uk

MEDIA

The design must look good both on the web and in print. We therefore expect you to submit a web format version (GIF or JPEG) and a printable version (e.g. EPS).

We would like the following versions:

Print media:

- Ideally, an arbitrarily scalable 300dpi EPS file. All fonts, etc., should be included in the file if you can.
- Colour, and black and white/grey versions (we often can't use colour) – printed colours to match those of the web logo
- An A4 headed paper design for official correspondence. This should include the BCS crest of arms (which will be supplied to the winner – in the meantime, use the GIF from the BCS website), and should present the following information:

  British Human–Computer Interaction Group
  A Specialist Group of the British Computer Society
  British Computer Society, 1 Sanford Street,
  Swindon, SN1 1HJ, U.K. www.bcs.org.uk/hci
  Email: hci@bcs.org.uk Tel: 01793 417417
  Fax: 01793 480270

Web media:

- 72dpi GIF or JPEG file – if you use colour, a black and white/grey version is not needed
- it's up to you how big you make the main logo (bearing in mind download speed)
- no animated logos please
- you can produce a small icon version as well if you wish
- no Java, JavaScript or plug-ins to be required – just straight graphics + text

SUBMISSION DEADLINE

30 September, 1998

Submissions (on 3.5" disk or by email attachment) and queries to Simon Buckingham Shum, address below.

The winner will be decided by the HCI Group's Executive, whose decision is final.

Dr Simon Buckingham Shum
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The Open University
Milton Keynes MK7 6AA, U.K.
Email: S.Buckingham.Shum@open.ac.uk
WWW: http://kmi.open.ac.uk/sbs
Tel: 01908 655723 Fax: 01908 653169

IMAS JavaFest

Software Development for Real-World Applications
Tweed Horizons Centre, Friday 21st August, 1.30–4.30 pm

Supported by the British HCI Group (a specialist group of the British Computer Society)

The third IMAS Java Summer Workshop will be held on Friday 21st August in the ultra-modern conference suite of the Tweed Horizons Centre, St Boswells, on the banks of the River Tweed, in the heart of the Borders countryside. The venue is about an hour's drive from Edinburgh, and about the same from Newcastle.

Java is rapidly establishing itself as the platform of choice among leading-edge software developers throughout the world. This meeting will provide a unique opportunity to hear from early adopters and innovators about the benefits you can expect, and the pitfalls you should avoid, if you decide to follow their example and adopt Java for your real-world software development.

Whether you are a researcher, interactive media developer, a user or potential user, you will benefit from hearing comment, experience and case studies from leading practitioners. If you are already a Java user, or on the verge of converting, you will have the opportunity to exchange thoughts, experiences and news of the latest developments, and to see for yourself the scope and flexibility of Java in real-world application contexts, including database and network access, graphics, animation and modelling.

Registration costs £30 for IMAS and British HCI Group members, £50 for others. Please complete and return the form overleaf, with payment, to

Sue Cook, Interactive Media Alliance Scotland, 13-17 Forth St, Edinburgh EH1 3LE
Tel: 0131 558 7943, email: imas@imas.org.uk
Web: www.imas.org.uk

Advance Programme

12.30 Registration opens
1.20 Introduction
Mike Forsyth, Calligrafix
1.30 Java in the Real World – A Manufacturing Case Study
Neil Martin, Spektra Systems
2.00 Building an Organisational Knowledge Management System in Java – the Organik Experience
Iain King, Orbital Technologies
2.30 Hyperprogramming in Java
Prof Ron Morrison, St Andrew's University
3.00 Coffee and demonstrations
3.30 Java™ Blend™ – Use Databases without writing SQL
Dr. Gerhard Mueller-Proefrock, Tech@Spree Software Technology
4.00 Panel: achievements, trade-offs and future trends
4.30 Close

Tech@Spree Software Technology
Tech@Spree Software Technology GmbH is a software engineering and development company, based in Berlin, which is solely focused on object technology, distributed objects and Internet applications. Recently Tech@Spree has been closely involved with Sun Microsystems and Baan in the development of Java™ Blend™ , an exciting new Java product just coming to market. Java Blend is a database adapter technology which seamlessly integrates Java object technology with relational database technology to provide increased productivity to application developers complying with ODMG standards (version 2.0 of 1997). It allows both interactive wrapping of existing databases through Java classes, and the mapping of Java classes to a Relational Data Base System, with automatic generation of the required schemas and the code necessary to access the data.
Dr Gerhard Mueller-Proefrock is co-founder and managing director of Tech@Spree Software Technology. In addition to spearheading Tech@Spree's contribution to Java Blend, Dr Mueller-Proefrock has led several Java/Internet and CORBA application projects for local software and end-user companies, including German TV stations. Prior to setting up Tech@Spree, he was director for object technology at Siemens Nixdorf Information Systems AG. In his talk he will give an introduction to the functionality of the Java Blend tool set, discuss some major architectural issues of the environment, and finally report on early usage experiences from the beta program.

Spektra Systems
Established in 1996, Spektra Systems is an example of a new breed of Scottish software company. The company's success stems from the significant software development and consultancy experience of its team, combined with world class expertise in object oriented and intranet technologies. Spektra Development Services, one of the two major divisions of the company, provides a comprehensive product or application development service on NT/UNIX based platforms using Object Oriented and GUI technologies, specifically C++ and Java.
Neil Martin is principal engineer in the Development Services Division. Spektra are rapidly expanding their investment in and commitment to Java. Neil's talk will review the training, development and performance trade-offs underlying this move.

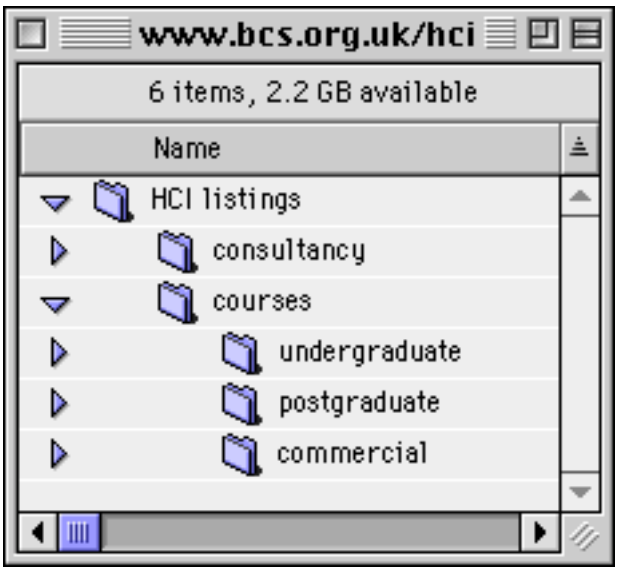
Orbital Technologies
Orbital Technologies was founded in 1995 to develop applications for the 'corporate knowledge era', and was one of the first software companies in the UK to make a total commitment to Java as the development environment for all its applications. The company has grown rapidly, and is in a strong position to reflect on the importance of the early commitment to Java in underpinning its success, as well as the problems in recruitment and training involved in adopting a new and still-evolving system.
Iain King is program manager at Orbital for their recently announced Organik corporate knowledge management system, with responsibility for specifying the product and managing the design process. His talk will explain the design and structure of Organik and how it leverages 'tacit' knowledge, and will review Orbital's experiences of using Java to build a server application.

University of St Andrews
Professor Ron Morrison is head of the Persistent Programming Research group in the Computer Science Department at the University of St Andrews. The group have pioneered advanced programming concepts and techniques, including polymorphic type systems, persistent languages, persistent object stores, hypertext, graphics and linguistic reflection. Two prototype languages: PS-algol and Napier88 have been developed along with a programming technique, hyper-programming, which is only available only in persistent systems.
Recently several of these techniques have been adapted and deployed in a more commercial platform, namely Java, with highly fruitful and promising results. Professor Morrison will review the strengths and weaknesses of Java for industrial-strength software development, with particular emphasis on its support for hyper-programming.

REGISTRATION FORM OVERLEAF

Coming …

The British HCI Group is about to launch two new web-based resources



Watch out for an announcement soon
http://www.bcs.org.uk/hci

IMAS JavaFest registration form

Please return with remittance (made payable to IMAS) to

Sue Cook, IMAS, Forth House
13-17 Forth St, Edinburgh EH1 3LE
Tel: 0131 558 1565

Please reserve place(s) as indicated for the IMAS JavaFest
Tweed Horizons Centre, St Boswells, Friday 21st August

IMAS/British HCI Group member(s) .....
(£30.00 each incl. VAT)

Non-members .....
(£50.00 each incl. VAT)

Total registration cost .....

Payment enclosed/Please invoice me*
*DELETE AS APPROPRIATE

PLEASE USE BLOCK LETTERS. PLEASE PHOTOCOPY THE FORM IF YOU WISH.

Name .....

Address .....

.....

.....

.....

Phone .....

Fax .....

Email .....

Alternative Realities

Our current conception of what HCI is and should be cannot possibly last. We are at a transition point in the relationship between people, information technology, and society, and need to break up a few of our cosy preconceptions about the field. **Alternative Realities** is a new regular section which is intended to serve as a forum for expressing much-needed alternative, and preferably controversial, views of what is, should, or will be going on. Contributions are sought which might be brief and jokey, or more serious in tone and deeper in argumentation. Articles should not be merely amusing though – we are looking for meaty issues behind the views expressed, however lightly. So, get it off your chest and write to **Alternative Realities**!

John Waterworth *Department of Informatics, Umeå University, S-901 87 Sweden. Email: jwworth@informatik.umu.se*

Developing ISO standards and new HCI based methodologies is a waste of time

David Singleton

There is close to zero chance that the European IT industry will adopt ISO standards or new HCI methodologies promoted by HCI people. The reasons lie in the economic structure of the IT industry.

ISO standards in computing

Powerful players, IBM before, Microsoft today, promote their own proprietary standards ruthlessly to control customers, lock out competitors and raise profits. As a corollary, a consortium of IT companies promoting a vendor-independent standard is generally a sign of weakness. Vendors, with their own financial and commercial interests to protect, will always seek to manipulate open standards. UNIX, MOTIF, OSI, the list of (relative) failures is long.

But there are exceptions you cry!

Low-level vendor-independent standards such as ASCII do work. But even here vendors war with each other. Most HCI is above this level.

The Internet is a set of open standards controlled by the W3 consortium. Only because Internet standards were 'fully formed' before the IT vendors noticed them, so they temporarily lost control. Microsoft intends to control the Internet via the browser. Old habits die hard.

ISO 9001 is a partial exception. I don't know why it became so successful, but the vendors such as Microsoft, IBM and Oracle who control the IT industry ignore it. Many companies I talk to are now deeply cynical about ISO 9001, and hence CMM will not go very far. The prospects for 9241 and UMM?

HCI methodologies

The problem with HCI based methodologies is that no one in industry has ever used them very much.

Firstly, there are very few HCI people working in the mainstream of commercial IT outside R&D labs. My guess is that there are 10 academics and research students in the UK for every actual mainstream industrial practitioner. No one outside the cognoscenti understands the output of HCI methods; they are therefore unusable in practice.

Secondly, even if an organisation thinks that HCI is important, there are now competing mainstream development methodologies which contain HCI components.

The significant (newish) methodologies are Object Orientation and Rapid Application Development (e.g. DSDM). Both are widely popular and have integrated HCI into other IT development methods. They have significant commercial backing from IT vendors and the large IT consultancies. So, for example, OO programmers design for actors (typically users) and identify use cases. DSDM practitioners 'co-locate' developers and end users in the same room during development.

Conclusion

HCI standards and methodologies developed by Europeans may get adopted by the ISO, but will be ignored by European IT developers without mainstream interest from the US. Some hope the EC will mandate standards and enforce them, or think that because an ISO standard exists it is therefore somehow significant. This is naïve.

We have to understand the basic economic structure and behaviour of mainstream IT if we want influence. Those who fail to understand the past are doomed to repeat it.

About the author

David Singleton runs a usability consulting company (AGS Usability Consulting Ltd.) working in the mainstream IT world. He has been a consultant to the EC evaluating research funding proposals in the HCI area and currently sits on the project board for an EU-funded research project.

He is the author of two commercial technology research reports published by Bloor Research:

Web Based & Client Side Development Tools 478 pages, pub. Bloor Research (1997) ISBN 1-874160-28-7

The Realities of Network Computing (with Roger Adams) 236 pages, pub. Bloor Research (1998) ISBN 1-87416-32-5

He has a Marketing MBA from the International University of Japan.

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Electronic versions are preferred: RTF, plain text or MS Word (5/6) , via email or FTP, or on Mac, PC disks; but copy will be accepted on paper or fax.
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