Cultural Heritage Informatics:
Introduction

ICHIM provides an opportunity, every two years, to examine developments and trends in the communication of cultural heritage using modern interactive computing technologies. Past ICHIM meetings, beginning with 1991, have each been shaped by specific technical advances that took place in the previous years. At ichim91, museum interactive multimedia was pretty much defined and confined by the videodisc-kiosk interactive installation. By 1993, we felt liberated by the advent of CD-ROM's which could be published for use at home or in schools, beyond the walls of the museum (although at a distance from the exhibition of 'real things'). Just as the CD-ROM began to look like a viable communications medium, in 1995, the Internet began to stir with applications that would soon make it a major player in heritage access services. By 1997, the World Wide Web was the de facto application environment of choice (although not yet truly capable of carrying streaming multimedia to most users). As a consequence, interface issues came to the fore.

In some ways, the respite we have had in emerging new dissemination technologies since 1997 has enabled practitioners reporting projects to **ichim99** to attend to the fundamental issue: how best to represent cultural knowledge digitally. Of course, there are some purely technological frontiers still being explored in this meeting: hand-held devices using wireless communication, virtual reality reconstructions of entire environments with walk-through interfaces, and high speed multi-media access for example are all "hot topics". But the primary focus of presentations this year is on how to capture, store, and present the virtual. And with this, there is a quiet and troubling sub-text with great resonance among cultural professionals: how to present it in a way that augments the authority of the real thing, rather than undermining it.

Authoring

In the beginning is the content. It may be an artifact or a theme. And the issue is how best to communicate it, in an engaging (interactive) and flexibly deep, way. Communicate to whom? Communicate by what methods? Di Silvestro et.al. discuss how to identify audience requirements for cultural multimedia and Ramsay reviews the different kinds of interactives and assesses audience response to these. Linking research into what we need to know about users, and how acting on what we know improves communication in these technologies, will be an ongoing arena of study.

But what about the subject itself? Should the topic influence how we communicate? Sumption and Bordoni examine how specific content, computing history and art, affect the communication of culture, and when it is useful, or even necessary, to create simulacra in order to communicate about reality.

And when we create these complex multimedia elements, is there any way we can use them again? Is this investment even something we can learn from? Garzotto et.al explore what design factors could make multimedia reusable and how to think about what it is that will get reused. Matthews reports on a kind of high-level reuse of design and design rules in an evolving family of museum kiosks and publications which can inform anyone thinking about getting the most out of multimedia investments over a substantial period of time.

In practice, many other considerations often come to the fore. Whitty, Heng and Martin reflect on authoring case studies in which a combination of social, intellectual and technical factors effect the ultimate shape of the product.

Tools and Techniques

Visitors can carry technology around with them, staff can communicate with each other and all their needed information resources wherever they are, and multimedia can fully surround and envelop users rather than sitting at screens and keyboards. These possibilities raise questions first about *how* and then about *why* and to *what effect* new multimedia presentation techniques can be used to best advantage

Papers by Evans and by Opperman explore how handheld computer technology has and will continue to transform the experience of visitors and probe the opportunities it presents for cultural programming. Kriszat, and Dabney and her colleagues, explore how three-dimensional visualizations are transforming the work of archaeological professionals as much as the perceptions of the lay user of archaeological documentation. Marty explores the implications for museum practices when new technologies are implemented within the institution. Milekic, and Sparcino and her colleagues, examine the individual psychological dimension of interactive multimedia use.

Access

Those exploring the world of cultural information come with prior knowledge and experience. The challenge of using that awareness to make links across cultural documentation created by many different projects, worldwide, inspires the development of knowledge representation standards such as those discussed in papers by Doerr and Crofts and Spinazze and Perkins. Collaborating among institutions and sharing information among systems without such standards is a challenge addressed in papers by Mallen, Briatte, and Geber, each focusing on locally significant issues with broader implications.

From inside cultural projects, the challenges of access to cultural information often seems less a matter of interoperability with other projects that simply a matter of making the contents of one's own project usable. These issues are addressed in case studies by Birdsey and by Swales et.al.

To a great extent, national and international cultural information policies effect access. Pantalony addresses the on-going struggle over copyright and intellectual property, while Magness-Gardiner explores how information systems designed to deal with illegal transborder movements of cultural artifacts can contribute to the creation of a worldwide information system that serves to document culture.

Conclusions

Clues and hints in these papers contributed greatly to the discussions at the opening and closing sessions on authenticity in cultural presentations at **ichim99**. In the opening session, attendees and panelists explored what it means that the virtual can seem so real. Professional obligations to interpret, and to document, can reduce confusion users already have about the specific items in our collections; can also add to the distance between the real and the virtual by relying on archetypical constructs to build our interpretation. Peter Samis's paper on questions about what the authors of the original

objects at the root of cultural heritage itself, thought, and how their view can be presented and represented. In the closing session, curators at the Museum of Modern Art in New York explored contemporary architecture with realizations that lure the visitor across the boundary between virtual and the real - into the digital Looking-Glass world.

The personal and institutional interests, technical capabilities and intellectual trends, that are influencing the evolution of cultural informatics presentations continue to take unexpected twists and turns. Every two years, when the **ichim99** program committee reviews proposals made to it about the best programs of cultural heritage documentation in the world, its choices reveal, and much as they apply, the new standard for interactive multimedia. When the conference emerges, and these proceedings are drawn together, we often see bigger issues in the aggregate than were yet recognized.

When we reviewed individual papers this year the on-going questions: 'what is communicated' and 'does it work' had fresh nuances:

- How do we create, and present, rich knowledge representations capable of exposing the many layers of reality while drawing the visitor in unfettered?

- Can we make representations that will have powerful impacts and yet are cost effective to create and enable re-use within a variety of contexts and for different audiences?

Both questions, visited again and again throughout each presentation at **ichim99**, challenge us to take what we have done and think rigorously about next steps in making interactive multimedia a universally accessible experience of both that which is culturally representative and of that which is unique. We are delighted to present a volume that confronts these questions for the international cultural heritage informatics community.

David Bearman and Jennifer Trant
Pittsburgh, Pennsylvania
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