

AHRC ICT Methods Network Expert Seminar on Visual Arts

FROM PIGMENTS TO PIXELS

Chelsea College of Art and Design, London, Thursday 27 April 2006.

ABSTRACTS

Image as Experiment

Charlie Gere, Lancaster University, Lancaster, UK.

Despite the title of this seminar, which suggests a continuum between pigment and the pixel, digital images are qualitatively different from other, older forms of image production such as photography, painting, drawing and so on. Digital image tools, the products of which increasingly dominate our visual environment, are themselves products of techno-scientific laboratories – including research for radar as well as work undertaken in places such as the Lincoln Lab, which made Ivan Sutherland's *Sketchpad* software possible. Much of the early work by computer artists took place with the help of similar laboratories. Digital images are not the means by which we represent some external reality, they are experiments in process and in exploring the means by which our media make our world. They are performative rather than constative. The digital image signals the end of representationalism in both philosophical and artistic terms. It extends the critique of such thinking originally undertaken by avant-garde and abstract art. Digital images show that we live increasingly in a culture of experimentation, a laboratory for living, in which media are some of the most powerful tools for research. We have therefore to rethink what we mean by the image in the digital age, and what we expect of it. Much of the most interesting work towards this rethinking is being done by so called 'new media' artists, and it is through examples of such work that I will address the question of the digital image.

You Can't Test Drive a Locked Car: Facilitating user choices in complex datasets.

Stuart Jeffrey, ADS/AHDS Archaeology, University of York, UK.

The ADS/AHDS Archaeology hold a large collection of digital resources that are intended to act as source material for both the teaching of archaeology in Higher Education (HE) and further research in archaeology within the HE sector. Many of the resources the ADS/AHDS Archaeology hold are comprised of multiple file varieties such as text, still images, spreadsheets and audio-visual. Increasingly they are also comprised of databases, 3D, VR and Geographic Information System (GIS) files. These file types are designed to have an element of interactivity and in the case of databases and GIS files are designed to allow user-defined queries in order to derive full benefit from them. Unlike many types of data they cannot be passively consumed. This richness in interactivity raises a number of challenges for organizations hosting and delivering such resources. Included amongst these are the following questions: Is additional software needed and available to access the files? Without downloading and experimenting with a large dataset how can the user be informed of the levels of interactivity available and/or required? Is the user required to understand the underlying processes and data structure when interacting with the data? If so, how are they informed? How can the user target the right data at the right level of detail for their purposes without downloading and examining it? All of the above issues are to some degree relevant for passively consumed data, but the impact and implications for resources that require some kind of interaction are far greater, especially when data volume and application specificity are considered. Potentially, very useful resources will remain untapped because the likely user community is not aware of what they are and what they are capable of doing. This paper will cover these general issues and examine current approaches to allowing users a clearer understanding of, and easier access to, complex resources, looking particularly at web-based applications employed at the ADS and elsewhere. This paper will also examine likely future trends in the use of such datasets as well as potential trends in their accessibility.

The Semantic Web Approach to Improving Access to Collections

Kirk Martinez, University of Southampton, UK.

One of the ways to increase access to collections is to allow "search engines" to access them, not simply as a bundle of words in HTML pages but in a structured way so that "author" for example is preserved. Several approaches have been developed for this cross-collection integration and the modern semantic web vision will be outlined. The use of the CIDOC Conceptual Reference Model will be illustrated as a way of mapping several different metadata sets to one common knowledge structure. In order to allow image content to be used in queries content-based retrieval can be integrated and research in this area will be explained through examples from the SCULPTEUR and eCHASE European projects. Browsing structured information can be too complex so a few approaches to this will be outlined, including mSpaces and adaptive search fields. Current research into linking image features or clusters with meaningful concepts will also be presented.

Use and Development of Traditional Text-Driven Methods (e.g. metadata, thesauri) for Cataloguing and Aiding Retrieval of Digital Images

Tom Morgan, National Portrait Gallery, London, UK.

Tom Morgan will talk about strategies for image metadata, relating to definitions of purpose and end-user communities. The focus will be on practice in the picture library industry, where the business of using words to find pictures is well established and highly developed. There will be discussion of the simple structures most commonly used, with comparative reference to museum practice and to the expectations of the art-historical research communities. There will be reference to the evolution of meaning, culture and community, including models of user interaction and data capture developed by the likes of Wikipedia and e-Bay

The Problem with Pictures: Use of visual metaphors and 'intelligent' image browsing to increase options for exploring visual material via non-textual means.

Mike Pringle, AHDS Visual Arts, University College for the Creative Arts, Farnham, UK.

Visual arts practice, as its name clearly elucidates, is based on, led by and created through a primarily visual approach. Yet, in the digital age, and particularly on the Internet, facilities and approaches for sharing or finding via visual approaches can seem sporadic, inefficient and, often, unsatisfactory. This paper describes research into currently available tools for exploring digital material and discusses how, through combining technological approaches, plus an increased understanding of user needs, novel and improved methods may be developed for solving specific visual arts problems.

The research is engaged in examining exemplars of current practice in three image-focused approaches for interacting with digital information:

- **Visual metaphors** – the use of images to represent abstract information; an extension or development of the principles of iconography, whereby an archetypal image (or set of images) enables the user to make simple decisions about associated, or underlying, information.
- **Image content** – commonly described as content-based image retrieval (CBIR), this is the principle of using machine-led technologies to identify and exploit useful information within the digital image itself; for example, shapes, colours or tonal values.
- **Visualization of data** – this approach uses abstract, diagrammatic forms to express complex data. Through representations of relationships, and factors such as relevance, such diagrams assist the user in understanding or browsing information.

The research is also concerned with how non-visual information can be further exploited for extending interaction with visual information:

- **Text-based descriptions** – with continued developments in text-based methods for describing information objects (e.g. ontologies, semantics), an increasing number of tools and methods for cataloguing and, hence, finding, images becomes available for those concerned with digital imagery.

As well as exploring exemplars¹ of the approaches outlined above, the research examines how the landscape of the visual arts, particularly in Higher Education and research, impacts on the way technology develops – either improving or impeding. In turn, this may identify ways in which technological development could benefit from increased understanding of the way visual arts practitioners think and work.

Artist Practitioners and the Impact and use of Digital Imagery and the Internet.

Roger Wilson, Chelsea College of Art and Design, London, UK.

I am less concerned with the well-rehearsed issue of technological influence on practice that has been the subject of repetitive debate since painting was declared 'dead' at the announcement of photography. I am much more intrigued by the choices and challenges placed before artists and art institutions by technological advance and the position that both are bound to take to preserve some semblance of independence and integrity.

Technological Issues for Practice-led Research in the Visual Arts

Jonathan Woodham, University of Brighton, UK.

This paper will consider a number of the practical ways in which the application of technology to practice-led research presents both opportunities and difficulties in the context of visual and performing arts and design. However, in the contemporary research environment of intersecting disciplines and methods, the extent to which the visual arts and design have a special position should not be overstated. Such ideas will be considered from a number of viewpoints across the research spectrum, ranging from the role of research in relation to the pedagogic focus of the Centre for Teaching and Learning in Design (CETLD), the relevance of technology and its applicability to the needs of postgraduate researchers in art and design - whether in terms of enquiry, documentation or communication of outcomes - or the ways in which an enhanced understanding of high-level visually-based research processes, contexts and findings may be communicated more effectively through digital means to peer reviewers (such as those serving on funding council or the RAE panels). Attention will also be paid to the ways in which the impact of digital technologies upon archival resources has been of signal importance, especially in terms of providing high-quality tools for visual research. However, the realities of swiftly-developing comparatively youthful archival collections of regional, national and international significance in digital terms is perhaps limited through their ineligibility for core funding under the criteria for the Museums and Galleries in Higher Education Policy of the AHRC, and the latter's discontinuing its Resource Enhancement Scheme. Satisfactory peer review mechanisms for evaluating the relationship between scholarly research and its impact upon the quality and significance of digital resources for the visual arts and design have yet to be fully realised.

¹ Exemplars of the technological approaches mentioned include projects run by: English Heritage, the University of Northumbria, the Department of Electronics and Computer Science at the University of Southampton, the Open University, Birmingham University, and a number of major UK galleries.