



Authenticity, Forensics, Materiality, Virtuality and Emulation *Advances in the curatorship and scholarship of personal digital archives*

A DIGITAL LIVES RESEARCH SEMINAR

from the Personal Digital Manuscripts Project at the British Library

Date: 5 July 2010

Time: 10:00 to 17:00

Venue: Foyle Suite at the Centre for Conservation at the British Library

This is a *draft* outline of the forthcoming research seminar (v0.8). There will be a fuller version with short biographical notes and brief summaries in due course. It is anticipated that there may be some additional speakers.

Introduction

Recently there have been significant and exciting advances made in the curation of personal digital archives. Seemingly distinct aspects of computing have come together to yield a vision of future curation and research in the archival context.

The use of forensic technologies has arisen from a profound concern that future digital scholarship must be based on personal digital objects that have been properly authenticated and that future historical research should be able, at a minimum, to interpret available dates, times and origins appropriately. This is digital scholarship and science taken to the microscopic scale of magnetic flux transitions, hexadecimal code and file system analysis.

At the same time there has been a desire to capture the context of creativity and historical happening in the fullest way, and this is manifesting itself within the computer environment, at the mesoscopic scale, in the evocative viewing of the personal digital objects through the original graphical user interface, complete with desktop layout, folder directories, application toolbars, and network volumes, resources and venues, and in the selection of menu items with a mouse, trackpad or touch screen - with this research experience being made possible through the use of emulators and virtual machines and bootable disk images.

Beyond the original computer environment, there is the capture of the physical environment through immersive photography, 3D graphical imagery and

audiovisual interviews in the presence of archival objects. This is digital scholarship at the macroscopic scale of the virtual experience of local landscapes of home and study, of lab and studio.

Within the British Library, the Personal Digital Manuscripts Project has recently been reinvigorated by internal funding, and it will be introduced over the course of the seminar. Its aim is to provide for enhanced curation, for the integration of digital and analogue components of personal archives, and for streamlined workflows through authenticated capture, processing and access of personal digital objects via emulation as well as migration.

Invited Speakers

Erika Farr and **Naomi Nelson** of Emory University will report on the pioneering use of emulation for the digital archives of Salman Rushdie. In the words of their introduction to the emulated environment: “Rushdie’s exact directory structure is available to browse, and each file can be opened in the application in which it was created, such as MacWrite Pro or ClarisWorks”.

Christine A. Finn writer, broadcaster and researcher will provide an account of her original research with the vintage computer community and of the classic computers themselves as contemporary archaeological *Artifacts*, the title of the book that arose from her fieldwork in the Silicon Valley.

Vincent Joguin President and CEO of Joguin SAS will provide an overview of the EU-funded project *Keeping Emulation Environments Portable (KEEP)* including an introduction to the *Olonys* universal virtual machine (which he codesigned for longterm portability) and the *Disk2FDI* software for floppy disk imaging.

Matthew G. Kirschenbaum of the University of Maryland will discuss digital materiality from the perspective of the humanities researcher, arising in part from his exploration of computer media forensics and restorative activities in capturing digital creativity, and following on from his ground-breaking book *Mechanisms. New Media and the Forensic Imagination*.

Michael G. Olson of Stanford University Libraries will report on his establishment of a Digital Forensics Lab for digital archives (the first of its kind in the USA) and the context of his work with personal archives including that of the evolutionary biologist Stephen Jay Gould.

Jussi Parikka of Anglia Ruskin University who conducted his doctoral thesis on a media archaeology of computer worms and viruses at the University of Turku will discuss some of his more recent research as well as a multidisciplinary initiative, the Cultures of the Digital Economy Research Institute (*CoDE*), of which he is Director.

Daniela Petrelli of the University of Sheffield will reflect on the findings of the EU Marie Curie project *Memoir: Remembering Things Past*, an examination of personal digital objects as the source of memories, most especially autobiographical. The design and impact of digital devices that are integrated in everyday life and enable ready recollection and reflection will be contemplated.

Gabriela Redwine of the Harry Ransom Center at the University of Texas will introduce aspects of the Mellon-funded project that is producing a report entitled *Computer Forensics and Born-Digital Content in Cultural Heritage Collections*, of which she is a coauthor along with Richard Ovenden of the Bodleian Library of the University of Oxford and principal author Matt Kirschenbaum of the University of Maryland. She will briefly consider some of the ethical issues that arise in the use of forensic technologies.

Seth Shaw, described in a popular account as ‘a new age archivist’, ‘part detective, part archaeologist’, will outline approaches to digital archiving being undertaken at Duke University including work with the emails of an economics Nobel laureate.

Matt Shreeve of Curtis+Cartwright Consulting will introduce the JISC project that is directed at *Clarifying the Purpose and Benefits of Preserving Software*, in association with the newly founded Software Sustainability Institute.

Jeff Ubois who is exploring new approaches to personal archiving for Fujitsu Labs of America will summarise the *Personal Archiving 2010* conference which he organised in San Francisco and will discuss future possibilities.

Kieron Wilkinson and **István Fábián** of the Software Preservation Society will give a talk and a very exciting pre-release demo of the ready-built *KryoFlux* equipment that provides for extremely low level and accurate capture and analysis of floppy disks.

Simon P. Wilson, a digital archivist of Hull History Centre will provide an overview of the international project *Born-Digital Collections: An Inter-Institutional Model for Stewardship (AIMS)* involving collaboration between Hull University, Stanford University and Yale University.

Members of the British Library

Helen Broderick of the Personal Digital Manuscripts Project will describe aspects of cataloguing and making available digital personal archives by means of the British Library’s newly instituted *eMSS Server*, and the enhancement of the archive through immersive photography of the creative environment: examples will stem from the archives of Ronald Harwood, Ted Hughes and Harold Pinter.

Jude England Head of Social Sciences will chair the final session.

Kristian Jensen Head of Arts and Humanities and SRO of the Personal Digital Manuscripts Project will provide a brief welcome and introduction.

Jeremy Leighton John of the Personal Digital Manuscripts Project will highlight some of the findings of the Digital Lives Research Project (funded by the UK's Arts and Humanities Research Council) including the use of forensic techniques in the archival and historical context. In particular, the concept of Virtual Archival Computing, the use of virtual machines, VM snapshots and the booting of disk images within a forensic framework and over a network will be elaborated. There will be examples from the archives of evolutionary biologists William D. Hamilton and John Maynard Smith.

Demos, Overviews and Topics

Beyond the presentations themselves there will be demos of the forensic capture of digital media involving write-blockers and forensic equipment; and the *KryoFlux* technology.

An outline of the recent developments of the EU-funded *Planets* project (Preservation and Long-term Access through Networked Services, led by the British Library) will be provided, specifically highlighting its contributions to emulation including a remote emulation service over the network, *GRATE*.

Attendees will learn about or be able to discuss the following topics:

- Virtual archival computing and the use of bootable forensic disk images and virtual machines as a means of providing repeatable and authenticated access to original computer environments.
- Personal digital archives as a source of original software for longterm preservation and as a motivating factor in this endeavour
- Low level capturing of magnetic flux transitions on floppy disks as well as higher level bitstream capture that is accurate and measurable
- The anthropology and archaeology of the vintage computer community
- Digital materiality? What is it and why does it matter?
- Universal virtual machines and open source emulators that are compliant with digital preservation requirements
- Why use forensic technologies in the context of digital archives?
- What is enhanced curation?
- Highlights of the Digital Lives Research Project

- The eMSS Server at the British Library
- Issues of licensing and software inheritance and reuse
- Next steps: networked integration

Sessions

There are 4 provisional sessions:

(1) 10:00 to 11:25 DIGITAL MEDIA, COMPUTERS AND ARCHIVES

10:00-10:10 Kristian Jensen

10:10-10:30 Christine Finn: *Digital Lives Opening Lecture*

10:30-10:40 Jussi Parikka

10:40-11:00 Daniela Petrelli

11:00-11:15 Helen Broderick

11:15-11:25 Questions

11:25-11:40 Break

(2) 11:40 to 13:25 FORENSIC TECHNOLOGIES & DIGITAL CAPTURE AND ANALYSIS

11:30-11:50 Seth Shaw

11:50-12:10 Michael G. Olson

12:10-12:30 Gabriela Redwine

12:30-13:00 Kieron Wilkinson and István Fábrián: *Digital Lives Technology Lecture*

13:00-13:10 Questions

13:10-13:25 Demonstrations on Disk Imaging

13:25-14:00 Lunch

(3) 14:00 to 15:40 DIGITAL MATERIALITY AND EMULATION

14:00-14:25 Matthew G. Kirschenbaum: *21st Century Curatorship Seminar Lecture*

14:25-14:30 Questions

14:30-14:50 Erika Farr and Naomi Nelson: *Digital Lives Archival Lecture*

14:50-15:10 Jeremy Leighton John

15:10-15:35 Vincent Joguein: *Digital Lives Research Lecture*

15:35-15:40 Questions

15:40-15:55 Break

(4) 15:55 to 17:00 DISCUSSION, DEMONSTRATIONS, ISSUES AND SUGGESTIONS

15:55-16:15 Presentations and demonstrations on emulation including work from the Planets Project on behalf of Maurice van den Dobbelsteen of Planets and the National Archives of the Netherlands

16:15-16:30 Special topic: the benefits and challenges of software preservation with Matt Shreeve

16:30-16:45 New initiatives in digital archiving: highlighting the potential for institutional collaboration and commercial engagement, with Simon P. Wilson and Jeff Ubois

16:45-17:05 New uses and new values in digital archiving: a discussion of possibilities, to be chaired by Jude England

17:05-17:10 Conclusion

Directions and arrival

Please use the main entrance and go to the Information Desk where you will be directed to the Foyle Suite which is in the Centre for Conservation (*not* the Conference Centre).

Please aim to arrive before 09:45 am.

Organiser

Dr Jeremy Leighton John

Curator of eMSS & Principal Investigator of the Digital Lives Research Project