E-Wissenschaft -

Enhancing how?

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A brief lesson in German

• Wissenschaft includes the Humanities in German as much as the science

• It points to the need to common in both domains

• It was used by Greg Crane in a keynote at UK e-Science All Hands
• Emerging data scientist who combine the skills of software **programmer, statistician** and **storyteller/artist** to extract the nuggets of gold

• Statisticians as the sexiest job around (Hal Varian, Google’s chief economist)

• What is scarce is the ability to extract wisdom from them.
Outline

• A brief history in Digital Humanities
  – Methods and Infrastructure

• From Digital Humanities to Arts and Humanities e-Science
  – Methodological Commons
  – Local Infrastructure

• Bringing it all together
New methods to gain individual knowledge
“Humanities scholars have real textual and literary problems to address, problems for which they have developed their own vocabulary (...). Computer scientists face computational problems, in the design and implementation of algorithms (...). But the algorithms need real data and real textual problems (...) not artificially constructed [ones] (...). The humanities provide difficult tasks for computers.” (Hockey)
TEI: Text Encoding

The highlight of Humanities Computing (Hockey)

Ordered Hierarchy of Content Objects

Communicate a theory of a text: ‘TEI is an agreement about how to express disagreement’ (Renear)

Expresses well the freedom and flexibility of a scholar but as a standard for libraries?
New ways of delivering common knowledge
• East London Theatre Archive
• Great Ormond Street Children’s Hospital
It also happens here

- Digital Humanities in Taiwan
- Digitization at the National Taiwan University (NTU) was initiated in 1996.
- 1,000,000 metadata records, 6,000,000 images, and Chinese full-text of 100,000,000 words
- Hundreds of years of history

Building Digital Research Environments
Arts and Humanities e-Science

A new world?
Additions to Methodological Commons
E-Science Experiments

• Here it makes sense to speak of e-Science in Humanities rather than e-Humanities ...
  – Experimental Humanities?
  – Advanced Visualisation?
  – Simulation ...
E-Curator: The third dimension

The knees are on either side of the plastered rectangular panel hanging in front of the legs. R gaatly engraved breadm of a collar around the neck. Face characteristic by coarse features and rather large ears. The open papyrus which he holds is inscribed, and so is the front of the small base on which his feet rest.
MWGrid: Medieval Warfare on the Grid

Some things will never be 'data-rich' – Things from the past – Things which cannot be translated into a formal representation.

The logistical operation undertaken by the Byzantine empire in crossing Anatolia prior to the Battle of Manzikert in 1071.

To address the problems of studying early military logistics directly by modeling these systems as Multi-Agent Systems (MAS).
Digital Humanities Centre at the centre
HiTHeR (High ThroughPut Computing in Humanities e-Research)
Approach: Similarity comparison

HiTHHeR – OCR Problems

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Once upon a time...

Alice was sitting under a tree, reading...
Enhanced Humanities

Bringing it all together
The mission of DARIAH is to enhance and support digitally enabled research across the humanities and arts.
Data-centric Collaboration

- Data Centric Research: large, rich, and complex
- Design interaction around data
- Scholarly lifecycle perspective

Dave de Roure: New e-Science Keynote
European Holocaust Research Infrastructure

To build an infrastructure that supports next generation Holocaust research
A large European consortium including experts from Holocaust research, Archives, Research Infrastructures

A domain that is in many ways most advanced in terms of digitisation and online presence

How can we enhance traditional archives-based research in the Humanities using research infrastructures

In the early 17th century, at the beginning of the Golden Age, elaborately illustrated secular and religious books began appearing on the Dutch market. They were a hit.

Was it the quality artwork? Did people read them for the articles? Or did their popularity stem from their subject matter, everyone’s favorite topic: love?

With intriguing images and provocative text, the books helped young readers quickly learn about the many aspects of romance: choosing a partner, marital fidelity and the benefits of giving of love.

Must modern readers miss out on such wisdom? No!

A digital database powered by

The Emblem Project, a digital humanities project out of the University of Utrecht in the Netherlands, is digitizing these books so they can be accessed via the Web.

Image courtesy of the Emblem Project Utrecht
Summary

• We are on the way to data-driven Humanities
• We have the tradition of Digital Humanities
• We need
  – Infrastructures
  – But mainly ways of working with the data
• We need successful collaboration between CS and Humanities
• European (ESFRI) and international collaboration offers many opportunities
Thank you