Conflicting Cultures of Knowledge? Revisiting the Two Cultures

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In a Nutshell

Your poster systems could be greatly improved and even become real life sustainable production systems with cross disciplinary support from humanists....

....if you can explain your proposal clearly.
History: Humanities & Science

• Science means, “reliable Knowledge”.
• What we mean by the Arts is Science. (Philosophy and Theology)
• Therefore the Royal Society of Arts (from 1700’s) promotes of industry and technology.

• 1870s - clear distinction between science and humanities.
• Experiments, science of energy, astronomy, geology and evolutionary biology.
• The right to control resources, education, economics, politics).

Thomas Hobbs  
1588 - 1679  

Robert Boyle  
1627 - 1691
The Two Cultures Debate

• C.P Snow versus F.R. Leavis
• 1959 Rede Lecture, Senate House, Cambridge – published as, The Two Cultures and the Scientific Revolution.
• Science needed to be absorbed into Public Culture – political and economic progress, but.....

“Once or twice I have been provoked and have asked the company how many of them could describe the Second Law of Thermodynamics. The response was cold: it was also negative. Yet I was asking something which is about the scientific equivalent of: 'Have you read a work of Shakespeare's?”
What’s the difference between a scientist and a humanist?

Stephen Hawking

Eric Hobsbawm
...in fact they have a lot in common

• Exercises performed as part of Ariadne with different disciplines.
• Process of reasoning and deduction is very similar between disciplines!
• Knowledge, language and experience?

http://www.ariadne-infrastructure.eu/
....a question of listening & collaboration
..but constraints!

• Time
• Resources
• Short term economics
• Corporatism – affecting both science and humanities.
• Long terms benefits?
“In some form, the semantic web is our future, and it will require formal representations of the human record. Those representations – ontologies, schemas, knowledge representations, call them what you will – should be produced by people trained in the humanities. Producing them is a discipline that requires training in the humanities, but also in elements of mathematics, logic, engineering, and computer science. Up to now, most of the people who have this mix of skills have been self-made, but as we become serious about making the known world computable, we will need to train such people deliberately.”

(Unsworth, 2002)

• Advocates - Cross disciplinary training
“Digital Humanities is the discipline born from the intersection between humanities scholarship and computational technologies.”

Elena Pierazzo

(http://epierazzo.blogspot.gr/2011/01/digital-humanities-definition.html)

- Perceived bias towards literature (two cultures of DH!)
- Origins in text and literature (concordances)
- The main Journal Literary and Linguistic Computing.
- TEI – text encoding
- Many Digital Humanist from the English Department.
- Avoid the words “Information Technology”.

www.ResearchSpace.org
Testing the Intersection

Conflict or Collaboration

Meaningful or superficial?
(16th / 17th) – Life and the Universe: The Wunderkammer

- A network of relationships and meaning based on unity within the chaos of nature. (Patterns / Concepts)
- Not comprehensive but representative across the world.
18th - Collecting & the Enlightenment!

- More sophisticated questions.
- More comprehensive collections.
- Artificial and natural still combined.
- Themes explored – Intersubjective!

- 18th and 19th
- Specialisms and division.
- New Knowledge at the expense of unity.
Edmund Oldfield

Q: Is it an accident that the library, natural history specimens, sculptures and antiquities were part of the same institution?

A: “I think it is”

Antonio Panizzi

Asserted a fundamental distinction between Christian art and “heathen antiquities”

*Siegel, Jonah. The Emergence of the Modern Museum: An Anthology of Nineteenth-Century Sources. OUP USA, 2009.
The “Will to Order” to create harmony?

• The “essence”. The type and nature of a Thing – Western Philosophy

• According to Huxley this instinct has “produced many premature syntheses based on insufficient evidence” (Huxley, 1958, Brave New World Revisited - sec.III. Over Organisation).

• Asian Philosophy – Ars Contextuali – meaning changes depending upon the context that it is placed.

• ‘Family Resemblance’ demonstrates that things described as the same may have different, or no, common characteristics.
Open data, closed data & Linked Data

• BM - History of human development and cultures from pre-historic to the present day.

• Just because you have data doesn’t mean it useful.

• 30 year project to digitise – purpose?

• “Open” and “Closed” systems.
Matthew Arnold versus Thomas Huxley

- An educationalist and Inspector of Schools
- Science is associated with Industry and wealth creation.
- A “blind faith” in machinery obscures real culture.
- The importance of classical sources and literature.

“The people who believe most that our greatness and welfare are proved by our being very rich, and who most give their lives and thoughts to becoming rich, are just the very people whom we call the Philistines.”

“However, simply publishing data out of context would fail to respect research methodology nor would it respect the flow of rights and reputation of the researcher. Scientific practice is based on publication of results being associated with provenance to aid interpretation and trust, and description of methods to support reproducibility.”

(2013)

http://eprints.soton.ac.uk/271587/5/research-objects-final.pdf
Linked Data Problems

The Information Paradox

Classical information theory has no room for meaning—but humans persist in assigning meaning. How can we reconcile this difference?

Knowledge Representation

• How can new Knowledge be generated from information?

1. It must be clear what encoded information is referring to – Recipients gain knowledge through the association between the sign and the referent. (Denning, P, Bell, T., Am. Sci (2012))

2. The justification for this new knowledge must be linked to the original evidence. (Doerr, 2014)

Shannon’s Mathematical Theory of Communication (1948)
Linked Data Problems - Consider this!

The body of Aris Kindt (thief)

“grotesquely out of proportion” and the wrong way round (Sebald, 2002, p.18).

The gaze of Dr Tulp’s colleagues are fixated, not on the subject of the examination, but on a large “open anatomical atlas in which the appalling physical facts are reduced to a diagram, a schematic plan of the human being” (Sebald, 2002, p.13).

The content of the image he suggests, has been artificially arranged to “memorialize the achievements of science while exposing the overlooked or forgotten individual destruction that is its price” (Johnson, 2011, p.110)

- What does this mean for reproducibility?
- How do we convey transparency?
- What is the provenance of knowledge?
- Is it Ethical?
Technology led commoditisation of Information

“Can one hope for the 'virtual museum'? Yes, if one holds a universalist view of the world where different contents could be moulded into identical forms. No, if one thinks that each system of representation should keep its own characteristics regarding form as well as contents.”

((Dominique Delouis, 1993 - RAMA)

The value is in the difference!
Cultural Heritage Aggregation

SQUEEZING MULTIPLE PERSPECTIVES into a SINGLE UNINFORMED PERSPECTIVE

“In the past we have focussed on conformity in naming”

HARMONISING PERSPECTIVES

“Increasingly it seems that we should have concerned ourselves with the relationships...between the objects”

David Bearman (1995) Aftermath of the RAMA project
Lessons Learnt

• **Position 1** - The Nature of Cultural Heritage Data
  • Variable and complex – multiple contexts.
  • Incomplete without additional expertise.

• **Position 2** – Engagement Needs Real World Context
  • The same contextual data is needed by the a general interested audience and an academic researcher.

• **Position 3**: Sustainability
  • Never dealt with sustainable ongoing provision.
  • Definable Benefits to all.

Realising lessons of the Last 20 years
http://www.dlib.org/dlib/july14/oldman/07oldman.html
Linked Data ≠ Understanding

Publishing does not create understanding
• Unnecessary invention of new ontologies.
• Difficult to utilise outside a narrow context.
• Not designed as cross disciplinary.
• Makes more sophisticated uses difficult and unsustainable.

• Rich quality contextual data now!
Modern Lowestoft!
An excellent (but difficult) adventure
ResearchSpace
CIDOC – Conceptual Reference Model
A Science / Humanities Collaboration
ResearchSpace Search

• Semantic search based on terminology, not just free text:
ResearchSpace Search

• Semantic search using explicit (but possibly abstracted) relationships:
Data annotation allows us to question and add new relationships, e.g.:
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ResearchSpace
Image Annotation

• Given an image (associated with an object), user can
  • create a geometric outline within image
  • relate this new component resource to terminology
Consider this opinion from the JISC Discovery Summit 2013 from the expert panel.

"...developers are impatient and just want to get access to the data and do interesting things, and on the other side of the equation we have curators reasonably enough concerned about how that data is going to be used or misinterpreted or used incorrectly. I think that this is actually a difficult area because the conceptual reference models are generally more popular with the curators than with the developers[...It is not] clear to me... how we solve the problem of engaging the people who want to do the development...through that mechanism, but nonetheless as this great experiment that we are living through at the moment with opening up data and seeing what can be done [...]unfolds, if we find that the risks are starting to become too great and the value is so poor because the data is being misused or used incorrectly or inappropriately, if that risk is a risk to society in general and not just to the curators ...then we are going to have to find those kind of solutions."

(JISC, 2013)

Paul Walk, former Deputy Director, UKOLN – transcribed from the conference video cast.