Session

- What Europeana is and does
- Pulse report of EuropeanaTech 2018 conference
- Précis of infrastructure oriented to research needs
- How the Europeana approach can inform us

Europeana

- EU initiative to improve access to cultural heritage content
- **Strategy: aggregate*, facilitate, distribute*, engage**
- Uses linked open data techniques for metadata aggregation and enhancement (for discovery and reuse)
- Critical that the technological innovation is coupled tightly with capacity and community building
- Strategy: 2011-2015, 2015-2020

*Humanities, arts, and social science research practices are invested in: constructing, reconstructing, deconstructing, explaining, and contesting versions historical and contemporary life, tracing in/authenticity, being expressive, and making arguments about identity, truth and meaning, and much much more

*In that process of interpretation and reflection, maintaining

Europeana

- Platform for the discovery and reuse of cultural heritage collections maintained by contributors
- >3000 content contributors of cultural heritage discovery metadata to discovery platform
- Community network, and leader in and contributor to communities of practice
- Expert communities - Technology, Copyright, Research, Education, Impact, Communication

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- Topics of interest
  - Uptake of IIIF for image interoperability for use in image viewer and annotation tools e.g. Mirador (EPFL), Slow Looking (Cogapp), Digital Manuscripts Toolkit (Bodleian/Mellon)
  - Investigations into ontologies, data models and data reusability
  - Machine learning to enrich metadata and content and big data
  - Reliance on Wikidata and questions on where "authority" lies
  - Quality and completeness of metadata created by humans or machines

Opportunities
Connecting and collaborating with community

Issues
Reuse of heritage infrastructure for research projects working at scale

Critical for advanced OCR techniques to deal with handwriting

Rhys Owen

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Wrangling Cultural Heritage Data in New Zealand Unexpected Connections

Rhys Owen (Te Rarawa) is Technical Lead for research-funded digital humanities projects directed at Wai-te-ata Press, Victoria University of Wellington, by Dr Sydney Shep, Reader in Book History and The Printer. He comes with longstanding experience in data visualisation, systems design and specialised cultural heritage assets for research and user interaction. Working in an agile, cross-disciplinary collaborative environment, his DevOps code is instantiated as infrastructure connecting data with deliverables, thus empowering research and further collaboration through "creative conversations" - a touchstone at WTA Press. Current challenges are with ontology-empowered visualisations across a variety of corpora, with legacy and emerging technologies for machine transcription of newspapers in english, chinese and maori in collaboration with PapersPast, and with social graph analytics in an inter-cultural National Science Challenge project.

When the barriers are removed (or not)

"We've now been given the imagery (60G) on a disk by PapersPast, and have an ENGR 302 student team to improve the OCR and use a hadoop cluster in the Engineering and Computer Science school to operate on the whole image corpus. Rather than just hand them the disk, I'd prefer to get the primary imagery data on the cloud for better for collaboration and the future. So CloudStor looks great - and the individual researcher allocation is now 100G. I'm really interested in the S3 gateway facility, and the possibility to be able to provide read-only access. Next year, I'd like to be able to keep the project running in the cloud, perhaps using Amazon EMR.

I will be uploading to my CloudStor space and experimenting with command-line access from the existing gitlab.com pipeline to try to stay one step ahead of the students, but I'm very interested in the S3 gateway and the possibility to have the image corpus as a discrete object storage with its own authentication and access."

From: Rhys Owen
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Artificial Intelligence & Deep Learning

Laurens Hogeweg

Learning Engineer | Naturalis Biodiversity Center | Netherlands >
| Research Institute

Laurens Hogeweg is a deep learning engineer at Naturalis Biodiversity Center and COSMONiO Imaging BV. He has a background in machine learning of medical images, obtaining a PhD in that area at Radboud University Nijmegen, but since then has switched to broaden the application of machine learning to biological images. Currently he works as a deep learning engineer at Naturalis Biodiversity Center to develop a deep learning platform for biodiversity applications. The platform focuses on both natural history collections and species observations in the wild. The platform will be made accessible to researchers as well as the general public.

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Theme 1: Artificial Intelligence & Deep Learning

- Where AI and deep learning can advance heritage documentation and processing workflows (and solve collection documentation and access to collection content problems)
- Comparing human and AI interactions in deep learning to gauge what is an acceptable attribution of categories
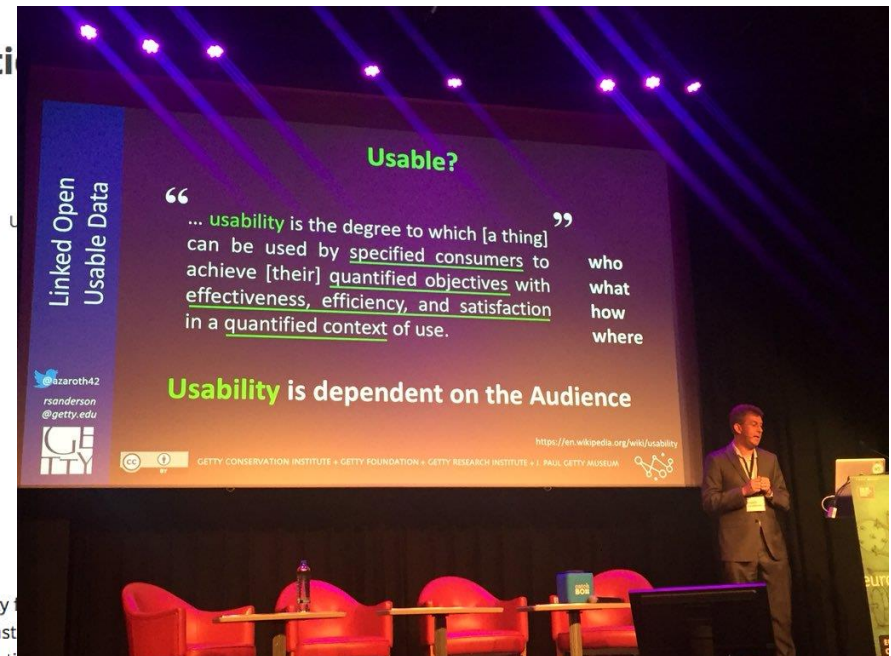- Considering open and closed world assumptions

Interoperability Informatics

Network Associati[on]

Robert Sanderson

Network Association Member

Semantic Architect | J. Paul Getty Trust | U[...]

Dr. Robert Sanderson is the Semantic Architect for the J Paul Getty Trust, with responsibility [...] direction of cultural heritage data information systems spanning the Museum, Research Inst[...] Institute and Foundation. His main goal is to find the right balance between ease of publication and consumption of data, and the precision of the data's semantics. Ongoing projects include the publication of the Museum and Research collections via IIIF (iiif.io) and Linked Open Data, with the model and process being documented at https://linked.art/. He is chair of the JSON-LD work in the W3C and proposed chair for the W3C

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Theme 2: Interoperability Informatics

- Where new heritage informatics approaches fit into heritage practices (and solve collection documentation, interoperability and access to collection content problems)

Centralisation & Decentralisation

Network Association Member

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Valentine is responsible for advising, sharing knowledge and communicating Europeana's scientific coordination and R&D activities. She also coordinates the further development and adoption of the Europeana Data Model.

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Theme 3: Centralisation & Decentralisation

- How to balance the benefits and efficiencies of centralisation, with building capacity and enabling decentralisation in the delivery of discovery services

Europeana Research (Infrastructure)

Research Community Engagement

"open to all the professionals **dealing with cultural heritage and research** at cultural and/or research institutions, universities, ministries and local governments, and the private sector."

"to get a **deeper insight into the researchers' needs** and to meet them where they concern the use of digital cultural heritage. "

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Europeana Research (Infrastructure)

Academic Research Focus

"We recognize the huge value of linking researchers with cultural heritage institutions. Bringing Europe's galleries, museums, libraries, and archives within digital reach **allows researchers to access a much wider scope of material and opinion**. Europeana Research exists to make that flow of information easier."

"To help us reach our goal of **promoting the use of our data in academic research**, we receive guidance from the Research Advisory Board, which

Europeana Approach

- Community engagement
- Research requirements gathering
- Academic advisory board
- Grants program
- Curated datasets
- Data services (range of APIs)

Reflections

- Breaking new research ground with digital heritage content is proliferating within heritage and research institutions and more clearly *when there are partnerships between them*

- Collaboration has enabled new research infrastructure to be built across heritage/academic boundaries

Reflections

- Digitisation of heritage material has boosted research infrastructure development in Europe

- Pan-national and national data services in support of humanities and arts research have been invested in and are being consolidated, e.g. CLARIAH

European exemplars e.g. CLARIAH

"CLARIAH is a national project to develop a digital infrastructure to link large amounts of data and software from various humanities disciplines together and make them digitally searchable."

"The digital infrastructure enables researchers to conduct innovative and data-intensive research. The *CLARIAH* consortium consists of more than 40 partners: in addition to all Dutch humanities research institutions, a number of university libraries, heritage institutions, public organizations and companies are also affiliated. *CLARIAH is funded by the NWO National Roadmap for Large-Scale Research Facilities*

Tinker

Tinker is an early prototype of the Data Enhanced Virtual Lab (DEVL) developed to support Australian researchers in the Humanities, Arts and Social Sciences (HASS).

LET'S PLAY

- Inspirational
- Passionate
- Research
- Heritage
- Infrastructure
- Leadership
- Community

Thanks to..

europeana

aarnet
Australia's Academic
and Research Network

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