Interactive global histories: and the maritime space (1205-1533)

Exploring Maritime Heritage Dynamics
(Singapore 18-20 November 2015)

Panel 3. Maritime Space (Chair: Roger Kain)
OUTLINE

I. The Big Picture

II. Interactive Global Histories as a Scalable Case Study for Engineering Historical Memory

III. 1205-1533 as an Advantaged Time Period for the Scalability of the Case Study

IV. Dataset and Ontology of the Case Study

V. An Experimental Database for Automatic Narratives Generation

Conclusions
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I. THE BIG PICTURE: HERITAGE SCIENCE
From the Tree to the Labyrinth
Interdisciplinary methods/problems

- To answer complex questions;
- To address broad issues;
- To explore disciplinary and professional relations;
- To solve problems that are beyond the scope of any one discipline;
- To achieve unity of knowledge, whether on a limited or a grand scale

Text: Klein 1990, p. 11
Illustration: Daniel Fazer in HHMI, 18/3 (2005/Dec.), Chronicle, p. 1
1st Singapore Heritage Science Conference on
Heritage Science as a Complex System

In the conference we propose to answer the questions: - What does Heritage mean for the future of Singapore? - How can complexity science help Singapore to make the best possible decisions with regard to its heritage and the way it may help Singapore to face the challenges of the 21st century?

Opening Reception: Monday 6 January 9 am
ADM Auditorium, School of Art, Design & Media (Level 2)

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CONFERENCE CHAIRS
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School of Physical & Mathematical Sciences,
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Andrea Nanetti
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INVITED SPEAKERS
Lisa Ackerman, World Monuments Fund, USA
Stefano Bertolo, University of Trento, Italy
Yongkang Cao, Shanghai Jiao Tong University, China
Julia Chee, Oral History Centre, National Library Board, Singapore
Min Fu Chee, National Institute of Education, Singapore
At Lin Cheua, National University of Singapore, Singapore
Reiner Fischer, University of Sydney, Australia
John Stephen Lansing, Nanyang Technological University, Singapore
Khalil Kamara, Nanyang Technological University, Singapore
Ivy Maria Lim, National Institute of Education, Singapore
Theo Ohlman, Nanyang Technological University, Singapore
Helga Nowotny, European Research Council, Vienna, Austria
Alesandro Re, UNESCO-THETECH and STI, Italy
Hui Lin Lina Teo, Independent Scholar, Former at Ministry of Education, Singapore
Woo Pte Wren, National Library Board, Singapore
Julia Watson, Columbia University, USA
Jason Web, Preservation of Sites & Monuments, National Heritage Board, Singapore
Kang Shua Yeo, Singapore University of Technology and Design, Singapore

*CONFERENCE IS FREE AND REGISTRATION IS NEEDED FOR THIS EVENT*
Heritage Science

At the Intersection of
(Digital) HUMANITIES and (Data) SCIENCE
Where data are THE data
(i.e. Treasure of Human Experiences data)
Culture and Computing 2013
Best Paper Award

Interactive Global Histories: For a New Information Environment to Increase the Understanding of Historical Processes

Andrea Nanetti, Siew Ann Cheong and Mikhail Filippov

The International Conference on Culture and Computing
16-18 September, 2013
Ritsumeikan University, Japan
The Maritime Space

“Well, the idea that studying maritime spaces will enable one to break free from the national histories, extolling the achievements of particular peoples and dynasties, that for long dominated writing about the past, has obvious attraction in an age of globalisation. Out of this have grown new ways of studying maritime history, which has long been anchored elsewhere” (David Abulafia)
II. A SCALABLE CASE STUDY
ENGINEERING HISTORICAL MEMORY

[Map of Europe with red markers indicating locations.]

ADVANCED SEARCH

From date: (YYYY.MM.DD)
To date: (YYYY.MM.DD)
Source
Coron and Modon
Where
Who
Governments
Other Notable Things
Events

Search
in a global perspective
III. ADVANTAGED TIME PERIOD TO STUDY THE MARITIME SPACE
The World as seen from Venice

- Morosini (1205-1433)
- Dolfin (1433-58/78)
- Malipiero/Longo (1457-1500)
- Magno (697-1498)
- Marin Sanudo *Vite dei Dogi* (origins-1494)
- Priuli (1494-1512)
- Marin Sanudo, *Diarii* (1496-1533)
Southeast Asia in the Ming Shi-lu
Archaeology (Land and Underwater)
Interactive Global Histories

IV. DATASET AND ONTOLOGY
information society as a complex system
V. DIGITAL MAPS AND AUTOMATIC NARRATIVES
Automatic Narratives Extraction

• **WHO?**
  - Key Actors
• **WHAT?**
  - Key Events
• **WHEN?**
  - Key Periods
• **WHERE?**
  - Key Locations
• **WHY?**
  - Key Factors
• **HOW?**
  - Key Actions

[Diagram of a time-integrated network]
Time-Resolved Dynamics

The diagram illustrates a network with nodes labeled from a to j, showing active and inactive links. The active links are indicated in red, while the inactive links are in yellow. The dynamics of the network are time-resolved, with connections changing over time.
Key Period!

key period
= high intensity of events
Key Events

Network based on Morosini Codex
01.03.1402 to 03-04-1404
Fra Mauro’s *Mappa Mundi*
the knowledge hierarchy

- data = symbols we associate with features in outside world
- information = relationship between data
- knowledge = proceduralised information to act on and solve problems
- wisdom = knowing under which situations to act
Knowledge Aggregation

Exponentially growing data volume
Information and knowledge fragmented
Limitations of Fra Mauro’s *Mappa Mundi*

- **Outdated** when completed
- **No updating** possible
- **Few perspectives** on the world
- **Reflect the interests of the creator and sponsor**
- **No enhancement** of user experience
Digital Maps

- Always **work in progress**
- Continuous updating
- Old information stored in **timeline**
- Not knowledge aggregators
  - No narratives like in Wikipedia
A Digital Silk Road
User-Driven Knowledge Aggregation
An Experimental Database

CONCLUSIONS AND FUTURE WORK
WHAT’S NEXT?

Source: Live Trading News

Source: Ziemba, C.

Source: Hays, J.

Source: Ziemba, C.
Peace is Never Granted
next steps

Data processing. Opportunities & constraints

Crowdsourcing
+ uploading new data
+ tagging existing data
- need for strong reference supervision

Examples:
- Wikipedia
- Wikimapia

Data aggregation
+ exploitation of the existing databases
- individual approach in order to unify data

Examples:
- The Ming Shi-lu
- National & public libraries
- Online resources
Thank You!