The embarrassment of complexity
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Heritage Science As A Complex System
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The embarrassment of complexity: A phase of transition?

- Old structures of management of complexity seem no longer adequate; new ones not yet in place
- Information spread and density of interaction, spatial extension of info around the globe
- Neither technology nor globalization the cause, but non-linear dynamics
- Played out at different speeds and different time scales
A world airline route transportation map, Wikimedia Commons
Reduction of complexity

- What if reduction of complexity to fewer variables and direct cause-effect relations is not sufficient?
- Too great reliance on numerical reduction of complexity through numbers, indicators, algorithms
- Take on their *Eigendynamik*
- Numerical reduction of complexity constrains or eliminates place accorded to independent human judgment
- Numbers, graphs, algorithms speak only to those who understand how they have been constructed and in which context to use
Towards integrative thinking

- Technologies of humility (Sh. Jasanoff): understanding the limitations of tools
- Unintended consequences of human action
- Managing complexity requires integrative thinking: seeing the world from different perspectives
- Open evolving systems: synthesis, synergy, sometimes synchronicity
- Requires a sense of being part of the whole
Complexity Conference on A Crude Look at the Whole
(4 to 6 March 2013) NTU
Complexity encounters cultural heritage

- Cultural heritage between conservation and innovation
- Conservation/preservation implies protection from change, but must take changes of contexts into account
- Tension between cult of the original/authenticity and acknowledging ambiguity and ambivalence
- Imagined origins, imagined communities and the performativity of imagination
Newly discovered Ostrich Egg Globe (c.1504)
Ancient heritage - a reference frame

- Continuing, but changing influence in the ‘post-classical tradition’
- Images, objects, monuments, rituals, projects, ideas, institutions
- Ideas about classical heritage and traditions: influence between various cultures
Overcoming the tradition-modernity distinction

- Rethinking our history and rethinking normative claims based on history
- Restoration (my Berlin experience): never totally coherent, never totally complete
- Recognition of fragmentation and discontinuity, new archeological discoveries
- Leaving space for future interpretations and findings
HRP-4C Dances thanks to AIST’s Choreonoid Software
RoDyMan
Prof Bruno Siciliano and his team
Overcoming the embarrassment of complexity in cultural heritage

Bringing cultural heritage to life, seeing the past through the lens of the present

Automated Documentation and Illustration of Material Culture through the Collaborative Algorithmic Rendering Engine (CARE)
Curating the past

- Collecting, organizing and sorting of the past in the present context and for future use
- What to select: sheer size and volume, trade-offs
- Criteria of selection and creating new contexts for a curated past
Relevance and meaning of the past for the present

- Re-levare: capability of a search engine or function to retrieve material/data that satisfy the need of users
- To know why it matters or how it is important
- Hidden connections and marked absence and presence
- Making the invisible visible
Reduction of complexity and criteria of selection

- Relevance of the past for today
- Present values and priorities: their relevance for the future
- How to transmit what we think is worth preserving for future generations
- The Shock of the Old
The Shock of the Old
David Edgerton
How to select:
with whom and for whom

- Culture and cultural identity arise from interaction between people over time
- Making people from the past speak to us
- Artwork and artefacts; natural environment and its transformation; belief systems, life-styles, struggles, joys, inspiration...
- People and things; artefacts and ideas; high and low; sacred and profane
Engagement with the past in the present: with whom, for whom

- Research projects with and for citizens science
- Interactive games, visualization tools, active involvement of citizens
- Learning to observe, select, analyze
- Research combines scientific imagination and disciplined ways of working
- Collaborative research: mixing art, science, design, ICT

Snapshot of an interactive map of wind patterns across the USA
How to select: for whom

- Museums and zoos in history: bringing the exotic to the privileged few; later opened for all citizens
  London Zoo 1835

- Today: complemented and vastly expanded through virtual access

- Co-evalness: the (re)emergence of a sense for global history

- How to avoid the ideological traps: tradition vs. modernity (backwardness vs. modernization) and romanticism vs. functionalism
Doric ruins of Tempio di Cerere, Campania, Italy

Eihei-ji Temple, Fukui City, Japan

John Hancock Tower, Boston
'A Crude Look at the Whole' – and an even cruder look at the future

- Preserving, conserving the past for the present and for an open, evolving future
- Acknowledging the ambiguity of empirical reality and its ambivalence
- Allowing for creative mixtures and hybrids
- Creating temporary spaces for consensus and eschewing final understanding
The complexity of curating cultural heritage

- Never complete, never totally coherent, but open for an evolving future
- Cultural identity emerges from interaction between people over time and space

by learning, working, playing and creating it together