

**Taipei  
2009**

# International Grid Symposium

## **Mashing-Up the Grid: Web 2.0, GIS, and the Humanities Grid**

**David J. Bodenhamer  
The Polis Center**

**IGCS/Academia Sinica  
April 21, 2009**

# The Rise of Modern Humanities

Nineteenth-century traditions

- Rationalism and empiricism

- Scientific methods

Twentieth century maturation

- Disciplinary focus

- Professionalization of the disciplines

- Cult of objectivity

- Specialization/ fragmentation

# The Dilemma of Modern Humanities

Twenty-first century transformation

Rapid knowledge discovery

Data deluge

Subjective: individualization, emotion, experience

Participatory

Interdisciplinary, but no integrative framework

- What perspectives engage modern humanists?
  - Interdisciplinary or multi-perspective
  - Interdependency
  - Intercultural and trans-cultural
  - Multi-scalar and inter-scalar
  - Visualizing complexity

- Modern humanists are interested in
  - Place
  - Context
    - ✦ Non-linear
    - ✦ Fuzziness
  - Culture
    - ✦ Variation
    - ✦ Diffusion
    - ✦ Transmission

Tools to address data deluge

Platforms for interdisciplinary discovery

Collaborative

Integrating frameworks

- “e-Science is essentially a mode of working that is reliant on a distributed number of computing resources...which can be made to work together for the purposes of one research outcome.”

[http://www.methodsnetwork.ac.uk/escein  
ce/e-science.html](http://www.methodsnetwork.ac.uk/escein<br/>ce/e-science.html)

- “... information, expertise, standards, policies, tools, and services that are *shared broadly across communities of inquiry but developed for specific scholarly purposes*: [it] is...more specific than the network itself, but...more general than a tool or a resource...for a particular project...or...a particular discipline.”

*Our Cultural Commonwealth* (ACLS Commission on Cyberinfrastructure, 2006)

- e-Science once meant grid
  - Data grid
  - Access grid
  - Computational grid
- Little demand for computational grid in the humanities

- Digital libraries
- Initial goals focused on data
  - Creation
  - Access
  - Preservation
  - Exchange

- Rapid increase in digital materials (Project MUSE, JSTOR, databases, etc)
- On-line access
- Convenient search tools
- Digital archives and repositories (AHDS, D-space, etc.)
- Highly visible projects (Valley of the Shadow, Vision of Britain, etc.)

- Now, e-Science means grid-based collaboration
  - Technical collaboration (e.g., networks, exchange protocols, middleware, etc.)
  - Procedural collaboration (e.g., standards for access and use)
  - Scholarly collaboration
  - ICT-discipline or domain collaboration

Ubiquitous

Speedy

Relatively non-technical

Connective

Collaborative

Open platforms

Wikis

Mash-Ups

Blogs

Social networking sites

Volunteered video

VREs

Games

Mobile devices

# Participatory Learning

“Participatory Learning includes the ways in which new technologies enable learners (of any age) to contribute in diverse ways to individual and shared learning goals. Through games, wikis, blogs, virtual environments, social network sites, cell phones, mobile devices, and other digital platforms, learners can participate in virtual communities where they share ideas, comment upon one another's projects, and plan, design, advance, implement, or simply discuss their goals and ideas together. “

McArthur Foundation, 2008

Unstructured interactions

No disciplinary boundaries

Global potential

Does not privilege expert

Open to experiential knowledge

Based on contributed information

Aggregation of anonymously produced data

Requirements:

Diversity

Independence

Decentralization

Means of reaching collective verdict

Games a key platform

Surowiecki, *Wisdom of the Crowds* (2004)

Harness the problem-solving capabilities of a networked and communicating group of participant-collaborators

Uses Web 2.0 and Grid technologies

Wiki is prime example: based on compromise and consensus (old tradition) but leading to new structures of knowledge

*Levy, Collective Intelligence (1997)*

Spatial turn in 1990s

Space offers opportunity for:

Integration

Participation

Tools and methods

New genres of scholarship

Spatial illiteracy

Highly technical

Expensive

Incomplete data

Moving beyond ESRI

Making GIS truly multimodal

Opening GIS to VREs and immersive environments

Creating collaborative spaces (PGIS)

Developing a new epistemology (nonlinear, fluid, reflexive)

Space as the meeting ground and interpretive perspective

Web 2.0 as the toolkit

Open, participatory framework for a non-privileged environment

Neogeography

Pareto principle (80/20): 80% of the effects  
come from 20% of the causes

We often do not need the full analytical  
functionality of ArcGIS to accomplish what  
humanists need

Use Web 2.0 to create an open community of learner-scholars integrated by spatial perspective

“Crowdsourcing:--contributed spatial information:

Geo-tagging locations

G-wikis

G-blogs

- Life paths
- Networks
- Virtual reality
- Gaming
- Simulations
- Deep mapping

- New collaboratories that allow
  - Retrieval
  - Contextualization
  - Hypothesis building
  - Flexible narration
  - Integration into knowledge networks
- Virtual Research Laboratories(VRL)
  - GRID+Web 2.0

## Spatial Humanities Grid

Opportunities for interchange and experiment

Creation of knowledge base

Building viable partnerships and a sustainable  
community