Beyond GIS: The Promise of Spatial Humanities

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“We know not through our intellect but through our experience.”

Maurice Merleau-Ponty, *Phenomenology of Perception* (1945)

**Post-Modernism**

subjective, experiential
contingency, ambiguity
fluidity, simultaneity
multiplicity, diversity
emphasis on agency
skeptical, especially of experts
New Framework for Learning

Unstructured interactions
Volunteered information
Blurred disciplinary boundaries
Does not privilege expert
Networked participant-collaborators
Open to experiential knowledge
What perspectives engage humanists?

- Multiple realities
- Interdependency
- Intercultural and trans-cultural
- Multi-scalar and inter-scalar
- Hybridity and complexity
Spatial Turn and GIS

Increased attention to space and spatiality, beginning in 1960s

New technologies support the spatial turn, with GIS the primary tool-kit

Critique of GIS

Emergence of GIScience
“Relationships that jump out when presented in a spatial format such as a map tend to clog a narrative, choking its arteries, until—even if the narrative does not expire—the reader, overwhelmed by detail, is ready to die of tedium and confusion.”

Spatial turn in humanities in 1980s/1990s

Emphasis on integration, visualization, and spatial analysis through GIS-facilitated tools and methods

Strategic datasets (various national HGIS projects)

International collaborations

New genres of scholarship in history, archaeology, cultural studies, etc. (e.g., Historical GIS)
Spatial Humanities

National Historical GIS

Welcome to the David Rumsey Map Collection Database and Blog. The Map Database has many viewers and the blog has numerous categories.

The historical map collection has over 27,000 maps and images online. The collection focuses on rare 18th and 19th century North American and South American maps and other cartographic materials. Historic maps of the World, Europe, Asia, and Africa are also represented.

Popular collection categories include antique atlas, globe, school geography, maritime chart, state, county, city, pocket, wall & case, children’s, and manuscript maps. Search examples are United States map, Geology maps, California map, Afghanistan map, America map, New York City map, Chicago map, and U.S. Civil War maps. Browse map categories Where, Who, When, or What. The collection can be used to study history, genealogy, art, explorations, local and family history. Learn more.

Watch 360 degree QTVR of the Collection Space
Browse Lists of the Collection's many Atlases

Rand McNally Official Railway Map Of The Pacific Coast States Including Territory East To Denver; Rand McNally and Company, 1901: Oze Map

Quicklinks
The collection may be viewed with the following applications:

- LUNA Browser
- MapRank Search
- Google Earth
- Google Maps
- Second Life
- 2D GIS
Electronic Cultural Atlas Initiative

About ECAI
- Cultural Atlas Portal: Link to example projects or browse cultural atlases in Google Earth.

Activities
- Dynamic Map Catalog: Search the ECAI Clearinghouse of cultural material which uses place and time as a common element.

Community
- Participate in the ECAI community through twice yearly conferences and international working groups.

Technical Infrastructure
- ECAI technical infrastructure illustrates the vision of sharing distributed data and using time enabled mapping tools.

Research & Development
- Collaborate to identify research topics and

ECAI uses time and space to enhance understanding and preservation of human culture.

Highlights

Upcoming:
- ECAI / PNC 2011 Joint Meetings
  October 19-21, 2011
  Sasin Graduate Institute of Business Administration of Chulalongkorn University
  Bangkok, Thailand

Past Events:
- Western Han Dynasty Exhibits
  Virtual Masterpieces From Ancient China
  April 16-22, 2011
  CITRIS Tech Museum
  345 Sutardja Dai Hall, UC Berkeley

- ECAI Workshop: Visualization, Computation, and Analysis in Large Text Corpora and Cultural Collections
  16 March 2011
  Academia Sinica, Taipei, Taiwan

- Joint Conference with KAIST & VSM
  October 2010
  COEX Conference Center, Seoul, Korea

- ECAI / PNC 2010 Joint Meetings
  Nov 30 - Dec 3, 2010
  City University of Hong Kong, Hong

- ECAI Workshop, in collaboration with the Central Library of Fudan University
  May 2010
  Fudan University, Shanghai, China

Projects:
Projects and Publications

Projects with HGIS components
   Salem Witchcraft Trials, e-Williamsburg, etc.

Major HGIS projects

Major publications and conferences in HGIS and spatial humanities
Salem Witch Trials: Accusations

Legend
- Accusers
- Accused
- Households

Layers
- Accusers
- Accused
- Households
- Townships
- Roads
- Rivers

Public Fast Declared

March 1692

Spatial Humanities
The Spatial History Project at Stanford University, a part of the Bill Lane Center for the American West, is made possible by the generous funding of the Andrew W. Mellon Foundation.

RECENT UPDATES
01 June 2011

RECENT PUBLICATIONS:
- Conceiving the Ocean
- A Data Model for Spatial History
- Nootkaberians, CMC Participation and the Salmon Industry in Southern Chile
- When the Loss of a Finger is Considered a "Minor" Injury
- Land Speculation in Fresno County: 1850-1891

CURRENT PROJECTS:
- Shaping the West
- Terrain of History
- Tooling Up for Digital Histories
- Holocaust Geographies
- Chile's Aquaculture Industry, 1950-2000

OUR TEAM:

PRINCIPAL INVESTIGATORS

DAN EDELSTEIN - (Principal Investigator) Dan Edelstein is an associate professor of French at Stanford...

ANDREW GERHART - (Principal Investigator) Andrew Gerhart is a PhD candidate in the Emmet Interdisciplinary...

MICHAEL KAHAN - (Principal Investigator) Michael Kahan is the Associate Director of Urban Studies at...

RICHARD WHITE - (Principal Investigator) Richard White is the Margaret Byrne Professor of American Hist...

ZEPHYR FRANK - (Principal Investigator) Zephyr Frank is an Associate Professor of History at Stanford...

JON CHRISTENSEN - (Principal Investigator) Jon Christensen is the principal investigator for the Center...

MATTHEW BOOKER -
Mapping and Analysing the Geography of Fiction with interactive Tools

TOWARDS A GEOGRAPHY OF FICTION

It all starts with the supposedly simple questions: Where is literature set and why there? Europe offers an abundant wealth of fictionalised landscapes and cities. The nascent research area of literary geography / literary cartography aims at visibly rendering such complex overlays of real and fictional geographies. Against this background that an interactive prototype of a »Literary Atlas of Europe« is currently under development at the Institute of Cartography and Geoinformation, ETH Zurich.

STATISTICAL SURFACES AS BLOCKIMAGES
Mostly mapping/spatial primitives
Requires technical expertise
Incompatible with much humanities data
About space, not place
Where is time?
Contributions to scholarship debated
Scanty uptake by humanists
Spatial Humanities

Barriers

Systems
Data
Culture
Literacy
Spatial/Geographic
Visual
GIS and (re)discovery of the map: vision of rigorously measurable, infinitely sharable information across temporal and spatial scales

Where does GIS fit with post-modernism’s emphasis on indeterminacy, ambiguity, fluidity, particularity, and other non-standard characteristics?

Can GIS fit the needs of historians and other humanists?
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
Virtual Center for Spatial Humanities

Formed in 2008 as a collaboration among three research universities:
Florida State University, West Virginia University, and Indiana University-Purdue University, Indianapolis

**Goal:** Move beyond GIS and toward the spatial humanities, a post-modern and post-structural approach that bends technology to the needs of humanists; blends GIScience with the humanities to understand the reciprocal influence of space and place on culture and society.
Moving beyond GIS
Making geo-spatial tools open to humanities data
Embracing multimodal approach
Using VREs and immersive environments
Creating collaborative spaces
Developing a new epistemology (nonlinear, fluid, reflexive)
“[M]aps will be more than the sum of their parts: they will possess ‘emerging’ qualities, which were not visible at the lower level....Not that the map is itself an explanation, of course: but at least, if offers a model of the narrative universe which rearranges its components in a non-trivial way, and may bring some hidden patterns to the surface.”

Spatial humanities is an explicit recognition of the reciprocal influence of geographic and constructed space on culture and society. Fuses traditional focus on nuance, voice, experience, text, and image with the systematic approaches of spatial science, computer modeling and virtual reality. Links time, space, and culture dynamically.
Spatial Humanities and Web 2.0

Space as the meeting ground; an integrated perspective on place
Web 2.0 as the toolkit; does not privilege a spatial technology or quantitative data
Open, participatory framework for experts and non-experts
Neogeography
  Participatory GIS
  Volunteered Geographic Information (VGI)
Virtual globes, APIs, mash-ups, and social networking
Gazetteers
Semantic searching
Text mining
Lakes District Project: Mash-up GIS

Mapping the Lakes: A Literary GIS
Visible Past: A Participatory GIS

Maps are supplemented by narratives. They can be enhanced with user comments.

Omaha Beach

By Sorin Adam Matei
Visible Past > Modern > 20th Century > Omaha Beach

Visible Past utilizes as one of its showcase mapping environments a model of Omaha Beach fortifications at the time of the Allies’ landing on the morning of June 6, 1944 (D-Day). The model was produced by the Visible Past team.

Virtual Omaha Beach was built in SketchUp, a modeling platform distributed by Google for creating models compatible with the Google 3D mapping application Google Earth. The model includes the full set of two dozen German fortifications (Widerstandsnest or in German military parlance WN) that the American 1st and 29th divisions encountered on the morning of June 6 1944. Each WN includes a barbed wire enclosure and one or more points of fire: pillboxes, bunkers, mortar pits or field gun emplacements. Many of the artifacts were provided by 3D weapons collections found at the Google Earth 3D Warehouse repository; some of them were reconstructions produced by the Visible Past team members. The 3D artifacts were selected and evaluated according to the historical literature dedicated to Omaha beach.

All artifacts were placed in the field according to information provided by historical
Augmented Reality

Synthesis of real and digital space e.g., Architip

Wearable technology, e.g., Google Glass
188.0, 267.0, 18.0
Drag the mouse in either the photograph or the model to adjust the point of view.

DATE AND TIME SHOWN IN MODEL.
June 21, 10:00
VR is an experiential medium, not a peripheral
It evokes emotion
The experience is social
It is open to everyone
Spatial Humanities

New Scholarship

The Spatial Humanities
GIS and the Future of Humanities Scholarship
Edited by David J. Bodenhamer, John Corrigan, and Trevor M. Harris

Deep Maps and Spatial Narratives

On the Great Plains: Agriculture and Environment
Geoff Cunfer

Past Time, Past Place
GIS for History
Cambridge Studies in Historical Geography

Historical GIS
Technologies, Methodologies and Scholarship
Ian Gregory and Paul Ell

Placing History

Railroaded
The Transcontinentals: Making of Modern America
Richard White

International Journal of Humanities and Arts Computing
Volume 1, Number 1, 2007
Editors: David J. Bodenhamer and Dr. Paul Ell
New Forms of Scholarship

Spatial Humanities
New Geo-Literary Visualizations

Spatial Humanities
Memórias Póstumas
A Novel and a Network in Five Minutes

The Posthumous Memoirs of Bras Cubas

Frederico Freitas, Erik Steiner & Zephyr Frank
Spatial History Lab, Stanford University
Tenement Housing in Rio de Janeiro, 1870s-1880s
Turning Cheap Real Estate into Gold

Choose: 1870 1888

Tenements >10 rooms sized based on number of rooms
Rent Streets Hills

Lorenz Curve of Property Inequality

Cumulative Properties

Cumulative Rent
Sound map - UK Soundmap

The UK Soundmap, the first nationwide sound map, invited people to record the sounds of their environment, be it at home, work or play. Over 2,000 recordings were uploaded by some 350 contributors during the period July 2010 to July 2011. [Further information].

Soundscapes

Wildlife recordings

Klaus Wachsmann Uganda recordings

Accents & dialects

Music from India

Your accents

Jewish survivors of the Holocaust

Traditional music in England

UK Soundmap
What has emerged are new and exciting forms of convergence, focused on geocultural spaces (or place).

Also, new types of scholarship and new collaborations, while retaining the best of HGIS/Spatial Humanities 1.0.
Opportunities for Spatial Humanities

Life paths and spatial narratives
Spatio-temporal networks
Spatial *imaginaire*
Virtual reality/immersion
Gaming and simulations
Practice theory
Deep mapping/deep contingency
**Goal:** Reveal the complex and contingent context of events within and across time and space

Deep maps (platform, process, and product):

- Links time and space (chronotope)
- Operates across multiple scales (time and space)
- Embodies multiple agents, multiple perspectives
- Recognizes alternate schemes/emergent realities
- Fosters dynamic context (movement, linkage)
- Evokes emotional and experiential (visual and immersive; an affective geography)
Deep maps are:

*Flexible*, inviting exploration
*User-centric*, supporting differing views
*Path-traceable*, supporting narration
*Open*, admitting new material
*Immersive*, evoking experience
Spatial Humanities

Conceptual Schema

Chorography (the universe of data)

Deep map 'prime': constructed around research interest

Deep map 'personal': your working space

Spatial narrative

More curation

More data
New collaboratories that allow:

- Retrieval
- Contextualization
- Hypothesis building
- Flexible narration
- Integration into knowledge networks

**Virtual Research Laboratories (VRL)**

**GRID + Web 2.0/3.0 + Spatial Technologies**

**Spatial Humanities**

**Technical Schema**

**Spatial Story Board**

**Meta Narrative Story Tracker**

(Model tracker)

**Users**

**Display medium**

- Text
- Oral history
- Photographs
- Music
- Video
- Sketches
- Narratives

**Volunteered Geographic Information**

**Social media**

**Neogeography**

**Geospatial semantic web integrator**

**Schematic for a Geospatial Web Deep Mapping platform**
Spatial Humanities

Frameworks: WordPress
Taipei 2007

Frameworks: HGIS

Spatial Humanities

Polis Religious and Community Organization Census Data: Broadway UCM

Demographics

D1. Total number of members or clients: 500
D2. Are these people clients? (individuals served)

D3. Gender Characteristics

<table>
<thead>
<tr>
<th>% Male</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Female</td>
<td>60</td>
</tr>
</tbody>
</table>

D4. Age Characteristics

<table>
<thead>
<tr>
<th>% 0-12</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 13-19</td>
<td>1</td>
</tr>
<tr>
<td>% 20-35</td>
<td>35</td>
</tr>
<tr>
<td>% 36-55</td>
<td>5</td>
</tr>
<tr>
<td>% Over 55</td>
<td>62</td>
</tr>
</tbody>
</table>

D5. Racial and Ethnic Characteristics

<table>
<thead>
<tr>
<th>% White</th>
<th>85</th>
</tr>
</thead>
<tbody>
<tr>
<td>% African-American</td>
<td>10</td>
</tr>
<tr>
<td>% Hispanic</td>
<td>5</td>
</tr>
<tr>
<td>% Asian</td>
<td>5</td>
</tr>
<tr>
<td>% Other</td>
<td>5</td>
</tr>
</tbody>
</table>

D6. Class Characteristics

<table>
<thead>
<tr>
<th>% Upper</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Middle</td>
<td>10</td>
</tr>
<tr>
<td>% Working</td>
<td>35</td>
</tr>
<tr>
<td>% Poor</td>
<td>5</td>
</tr>
</tbody>
</table>

D9. Data regarding all demographics:

Average of 250 people attend the main worship services. 126 attend other activities on the main worship day (specific activities not specified). Majority of families are two-parent structure, however, most members are not parents. Congregation is ready to listen to the community. They've been scared. They want more open communication.

D10-13. Geographic Characteristics

D10. Percentage of members or clients from the neighborhood: 7.5
D11. Data regarding the neighborhood members or clients: 92.5
D12. Percentage of members or clients from outside the neighborhood: 92.5
spatial, temporal, & contextual

what/where/when

total perspective
Justitia is the home of the SL Bar Association with many real life lawyers from all over the world. Stop by for one of their many informative discussions on everything from human rights, real (and virtual) estates, taxes, copyright and more. Find legal information, get a referral to an attorney or tell them which topics you want to know more about.
Frameworks: Immersive Gaming
Library Observatory recognizes a unique opportunity the emergence of the DPLA represents: both to imagine new ways of interacting with cultural and scientific resources and to reflect on what collections of such materials mean, what stories they tell. An observatory, after all, is more than a collection of telescopes; it’s also the community of people who maintain those instruments, peer through them, and tell one another stories about the stars. In similar fashion, Library Observatory intends to help us look at constellations of books, manuscripts, and images, and to use those tools to focus our reflections on relationships, meaning, and import of cultural resources as well. The exhibition reflects this bicameral character: we present an interactive tool for searching and visualizing the DPLA collections, accompanied by an interactive documentary that weaves together imagery from the history and latter-day data practices of libraries with analytic visualizations and audio testimonials about the making, use, and enduring significance of library data and the collections they describe.
Driving through Time: Digital Blue Ridge Parkway

Active Facets

Date
- 1800s (2)
- 1900s (7134)

Subject
- Photographs (6832)
- People (1336)
- Alleghany County (N.C.) (1045)
- Roads (1025)
- Construction (884)
- View of road (884)
- Landscape (807)
- Automobiles (793)
- Scenery (623)
- Floyd County (Va.) (551)
  (more)
Walking Through Time

“SatNav for historical maps”
The iPhone app that combines GPS technology with old maps to allow users to walk through time.
Growing Up Chinese

As a child, my parents ran a Chinese Hand Laundry at 29-10 Union Street in Flushing. We were one of a handful of Chinese/Asian families living there. By the time I graduated Flushing High School, my hometown had become New York City’s Cultural Capital.

Hosted by Alvin Eng. Filmed by Christina A. Voros. Edited by Lee Eaton and Suzanne Barber. (3:46)
Spatial Humanities

Imaginative and Historical Cityscapes (Literary Edinburgh)
hyperCities is a collaborative research and educational platform for traveling back in time to explore the historical layers of city spaces in an interactive, hypermedia environment.

Recent Posts

Presner delivers Plenary lecture at Coalition for Networked Information
by presner | May 26, 2011 | In Uncategorized

How To Add an ArcGIS Server Map to a Rich Object
David Shepard | May 19, 2011 | In How To

HyperCities Now: Linking GIS and Twitter (Japan, Egypt, Libya)

Todd Presner delivers the keynote lecture at the Coalition for Networked Information (April 2011):
“HyperCities: Using Social Media and GIS to Archive and Map Time-Layers in Berlin, Los Angeles, Rome, Tehran, and Cairo”

CNI: HyperCities: Using Social Media and GIS to...
Spatial Narratives

Time geography
Text mapping
Geospatial semantic web
But how to:

Capture experiential/metaphorical space?
Enable deep contingency? Integrate structure, process, event? Space, time, place?
Understand the situatedness of the narrator(s)
Represent the narrative(s)? Make the argument?
New collaboratories that allow

- Retrieval
- Contextualization
- Hypothesis building
- Flexible narration
- Integration into knowledge networks

Virtual Research Laboratories (VRL)

- GRID+Web 2.0/3.0+Spatial Technologies
A unique post-modern scholarship with real and conceptual space as an integrating and animating framework:

Visual and experiential
Multiple perspectives
Complex environments
Emergent realities, deep contingencies
Spatial narratives, spatial arguments