SSHA Portland 2005

Big Social Science History

Rivière -

Cap Tourmente National Wildlife Area

MRC DE L'ÎLE-D'ORLÉANS

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Samt-Ferre

Mapping biographical trajectories of historical characters in space and time: a practical approach.

Sainte Anne-

de-Beaum

Parc du Mont-Sainte Anne

Casgrain

Pierre Racine

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FROM TRAVEL ACCOUNTS TO BIOGRAPHICAL TRAJECTORIES

- From Marco Polo, Columbus, Coronado, De Soto, Drake, Champlain, La Salle, Cook, Lewis & Clark...
- To Darwin, Humboldt, Napoleon, Jefferson, Reagan, Franklin, Einstein, Picasso, Bush... National Wildlife Area

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 And why not: Pioneers, Ordinary peoples, You and Me ... Saint-Francois

BIOGRAPHICAL SOURCES

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MAP EXAMPLE

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Source : Goetzmann William H. et Williams Glyndwr (1992) *The atlas of North American exploration: from the Norse voyages to the race to the pole.* New York: Prentice Hall General Reference, 224 p.

LIFELINE'S REPRESENTATION PROBLEMS

- Maps shows too few details Much less then their narrative counterparts...
- Maps show no temporal information
 Or just the minimum...
- Indexing is too limited

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It is difficult to find information quickly... Ex. All travelers who went to the Rockies at the end of the 19th century

MONTAGNAIS

Champlain and Grave • ign There is no mean of analyzing lifelines to inhabitants. Indians to inhabitants. Indians srince a quantitative way West

LIFELINE'S REPRESENTATION SOLUTION

A temporal geographical information system dedicated to the analysis of biographical accounts would allow better mapping and analysis of historical characters' itineraries

PROBLEM

GIS ANSWER

- Map with too few details —
- Maps with no temporal information
- Indexing

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No quantitative analysis —

- Multi-scale maps "like using a microscope"
- Thematic and dynamic mapping animation
- SQL queries

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Powerful quantitative analysis tools

DATA COLLECTING AND SHARING PROBLEMS

Data difficult to collect

- Tedious work requiring many contributors...
- Remote collaboration difficult, historical records hard to get...
- Data follow weak standards and are difficult to compare..

faune de Cap-Tourmente

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Work is duplicated..

Hypothetical spreading

- Ignorance...
- · Delays...

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Work lost, forgotten or even unused..

Saint-Francois

Collecting chil nace Sharing

DATA COLLECTING AND SHARING SOLUTION

A web portal dedicated to the analysis of biographical accounts would allow improved group collecting and sharing of factual data about historical characters

PROBLEM

WWW ANSWER

Online data capture; at anytime, from anywhere; standard database model; no matter the number of collaborators

Instant access to latest changes; everybody, anywhere, anytime; without human handling

Software engineering techniques applied to research in historical geography or Wikipedia



MODELLING LIFELINES

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• Events (instantaneous and located in space)

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•Episodes or states (lasting and not located)

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PROBLEM TO DISPLAY EVENTS IN DIFFERENT VIEWS (Multiple representation)

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FUZZY MOMENTS AND FUZZY LOCATIONS

Goal

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 Being able to describe event's uncertain moments in a relational database. Moments may be absolute or relative.

SELECT DISTINCT events.owner FROM events WHERE events.moment =

'the turn of the 20th century' - 'about 10 years'

- → Develop comparison (=, <>, <, >, <=, >=) and mathematical (+, -) temporal operators
- Being able to describe event's uncertain location in a spatial database.
 - → Develop comparison (=, <>, <, >, <=, >=, north, south, east, west) and mathematical (+, -) spatial operators

Solution

- Using an object relational spatial database (PostgreSQL) to develop complex data types.
- Using fuzzy logic. Assign a percentage to a gradation of limits around the fuzzy zone.

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FUZZY LOCATIONS



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CONCLUSION

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- Modeling biographies in a relational spatiotemporal database can be very useful
- Once biographies have been quantitatively described we can represent and analyze them in different ways
- Some developments are required before we can achieve this goal
- A web portal is the best way to collaborate at the tedious task of capturing characters' life
- Historians should do this themselves instead of relying on others to do it (possibly in the wrong way...)

