OpenAtlas
How to Reference Historical Points in Space and Time

Alexander Watzinger
July 5th, 2021

CC-BY 4.0
OpenAtlas

https://openatlas.eu

• Open source, browser based database software
• Acquire, edit and manage research data
• Historical, archeological and prosopographic projects
• Developed by a small core team

https://demo.openatlas.eu/overview/network/
Model

CIDOC Conceptual Reference Model

- International standard (ISO)
- Developed by CIDOC CRM Special Interest Group
- Specifies classes for entities like actor, source, event, place and rules how to link them
- Stored in an object oriented network

https://demo.openatlas.eu/overview/model
Historical Points in Time and Space

Uncertainty in Historical Projects

- Temporal and geographical information about persons, places, events, … provided by historical sources can often be imprecise or only partially available

- Nevertheless we like to use acquired data for
  - Answering research questions
  - Data analysis, e.g. social network analysis
  - Visualizations
Uncertainty in Time

Challenges

See below a fictional but very typical list of persons in a historical project.

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex the Ascetic</td>
<td>1473 – Nov. 1563</td>
<td>Disciple of the Hello World order</td>
</tr>
<tr>
<td>Berni the Brutal</td>
<td>First half of 15th cent</td>
<td>Proud council member of LARP</td>
</tr>
<tr>
<td>Christoph the Cruel</td>
<td>Not before May 1482</td>
<td>Scholar of the Wonderbar</td>
</tr>
<tr>
<td>Jan the Jester</td>
<td>1666, circa</td>
<td>Artist at the House of Rising Paint</td>
</tr>
<tr>
<td>Nina the Necromancer</td>
<td>ca. 15th cent.</td>
<td>Gravedigger at the Full Moon College</td>
</tr>
<tr>
<td>Stefan the Seer</td>
<td>Estimated birth in 1412</td>
<td>Visionary at mount Chefan</td>
</tr>
</tbody>
</table>
Uncertainty in Time

Possible Approaches and their Disadvantages

- Dates as free text (like in example)
  - No search, calculations or statistics
  - No visual representation
- Formatted dates with uncertainty categories
  - Differences of interpretation at data entry and data analysis
  - Only limited scientific usability
- Dates with defined time spans or eras
  - E.g. decades, the Middle Ages, ...
  - Differences in era definitions
  - Analysis and statistics possible but imprecise

https://thanados.net/charts
Uncertainty in Time

Solutions and Implementation in OpenAtlas

- Begin and end date
- Both can be a time span
- If uncertain, choose a wide enough time span
- Possibility to also
  - Add comments
  - Add era types
  - Connect via event (dates)

https://demo.openatlas.eu/insert/person
Uncertainty in Space

Challenges

- Spatial data for places is often imprecise or only partially available
- There may be multiple possibilities
- Even if places still exist today they can differ in location and expansion

https://thanados.net/
Uncertainty in Space

Solutions and Implementation in OpenAtlas

- Available geometries
  - Point, line
  - Polygon (exact)
  - Polygon which is big enough to be certain that the location is inside
- A combination can be provided
- Additional information can be added
- Links to external reference systems, e.g. GeoNames

https://demo.openatlas.eu/insert/place
Conclusion

Uncertainty in Space and Time in OpenAtlas

- Data can be entered very precise (exact day, GIS)
- Uncertain data can be entered by choosing a big enough frame where one is sure it is inside it
- Removes burden at data entry to specify a grade of uncertainty and worries about suggesting “incorrect” data
- Although this approach solves many issues it still can provide challenges using this data for presentation or analysis
Thank you for listening

https://openatlas.eu