

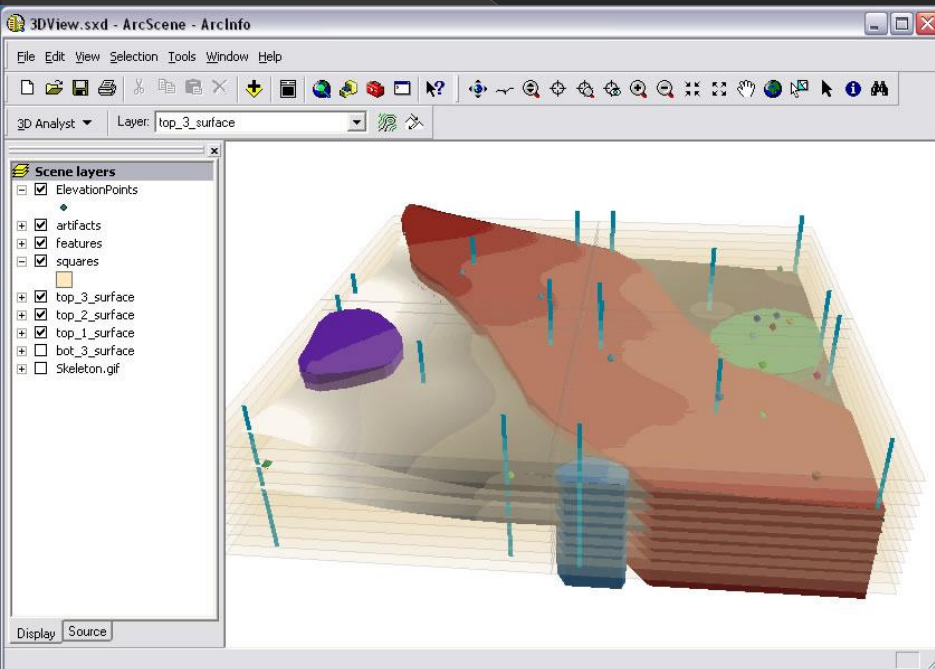
Semantic enrichment in the archaeological field: the case of Calakmul

Muriel van RUYMBEKE, Roland BILLEN,
Anne-Françoise CUTTING-DECELLE

Archaeological semantic enrichment



Archaeological semantic enrichment

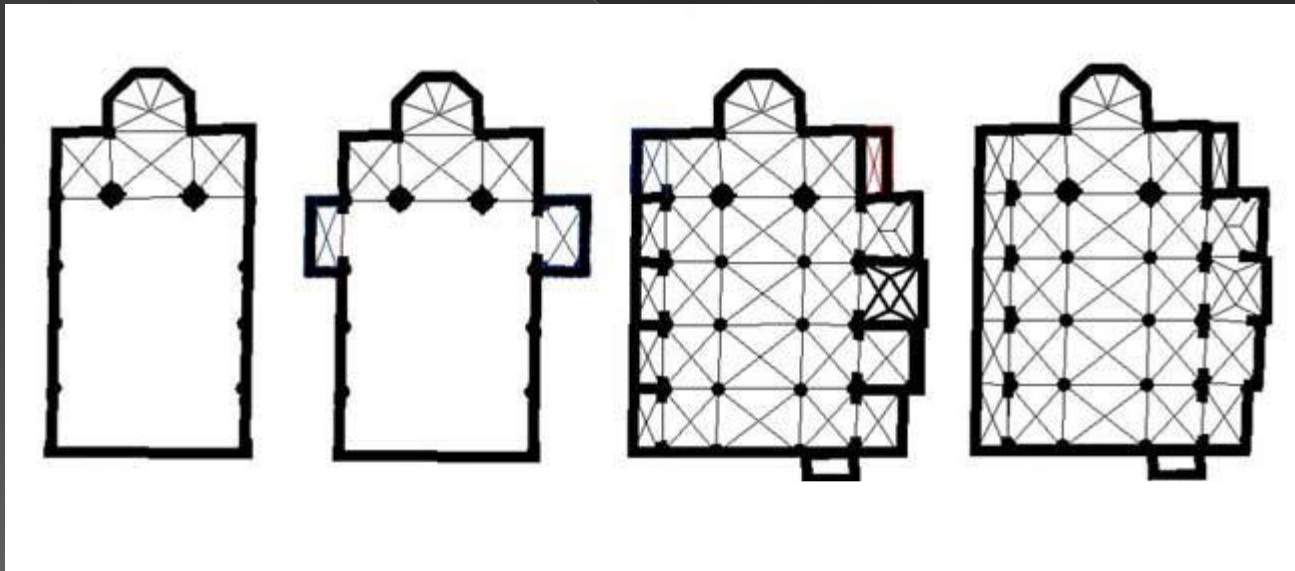


Archaeological data specificities

- Objects change over the time

Archaeological data specificities

- Objects change over the time



Archaeological data specificities

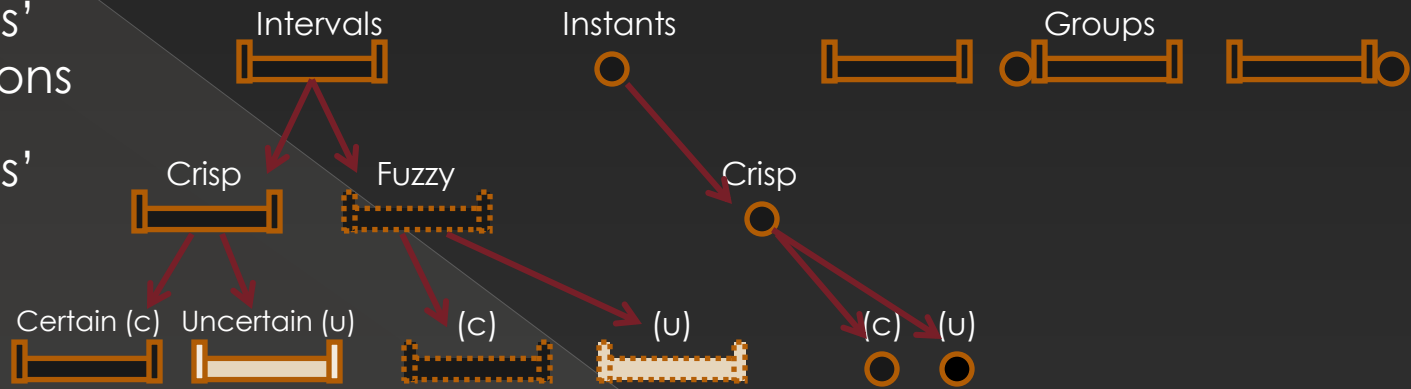
- Objects change over the time
- Information is often incomplete, fuzzy and uncertain

Archaeological data specificities: the temporal example

Temporalities' representations

Temporalities' natures

Level of certainty



For intervals: 4 possibilities:

Crisp and certain: + 584 → + 628

Crisp and uncertain: maybe + 584 → + 628

fuzzy and certain: + 584 (± 20 years) → + 628

fuzzy and uncertain: maybe + 584 (± 20 years) → + 628 (± 10 years)

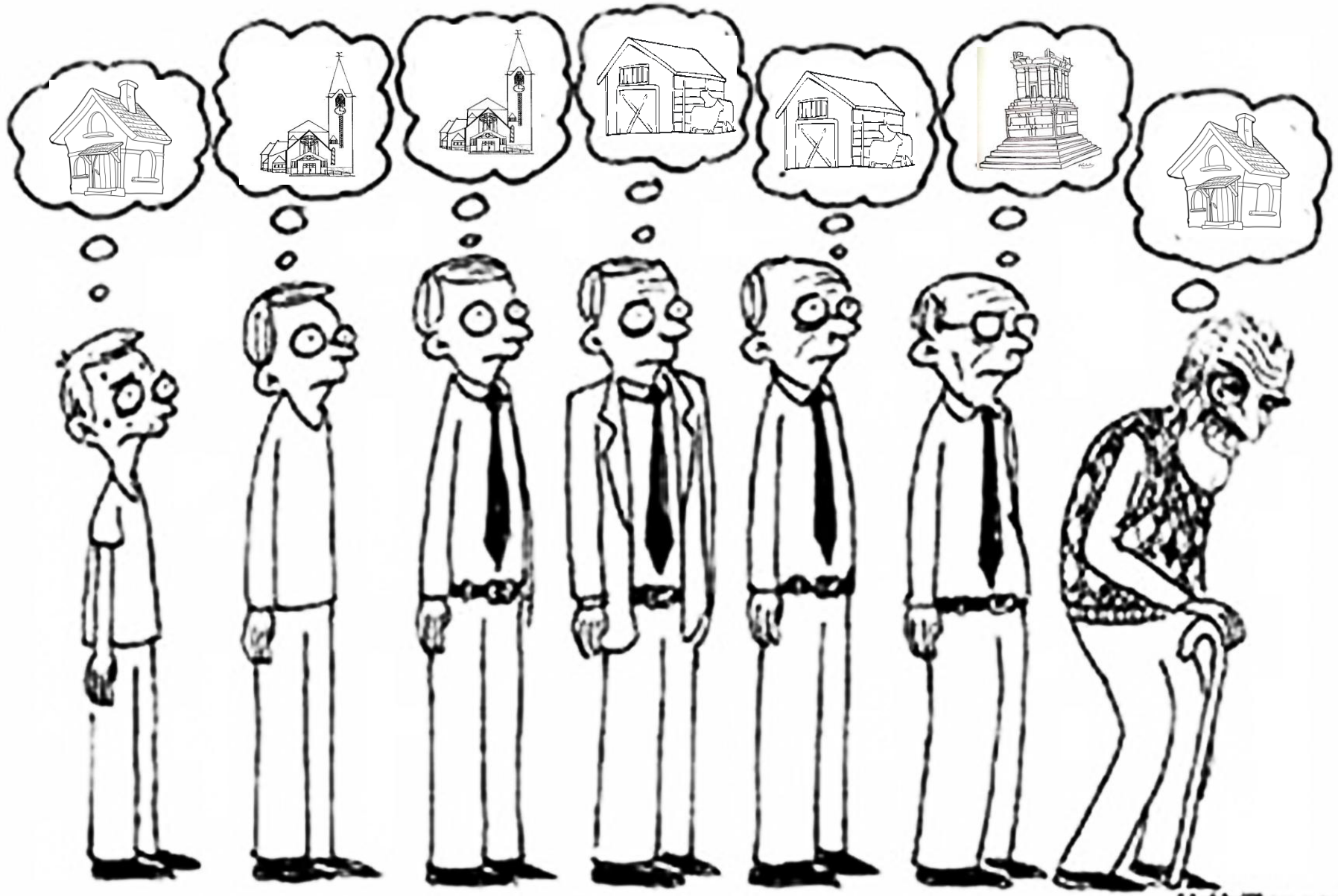
For Instants: 2 possibilities:

Crisp and certain: + 584

Crisp and uncertain: maybe + 584

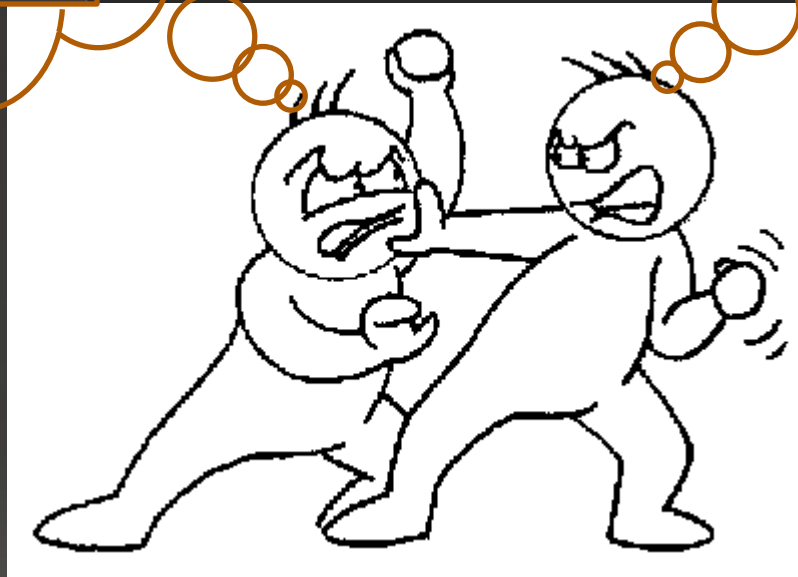
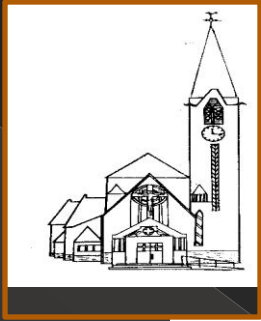
Archaeological data specificities

- Objects change over the time
- Information is often incomplete, fuzzy and uncertain
- Data interpretation changes



Archaeological data specificities

- Objects change over the time
- Information is often incomplete, fuzzy and uncertain
- Data interpretation changes
- Interpretation can be multiple and contradictory



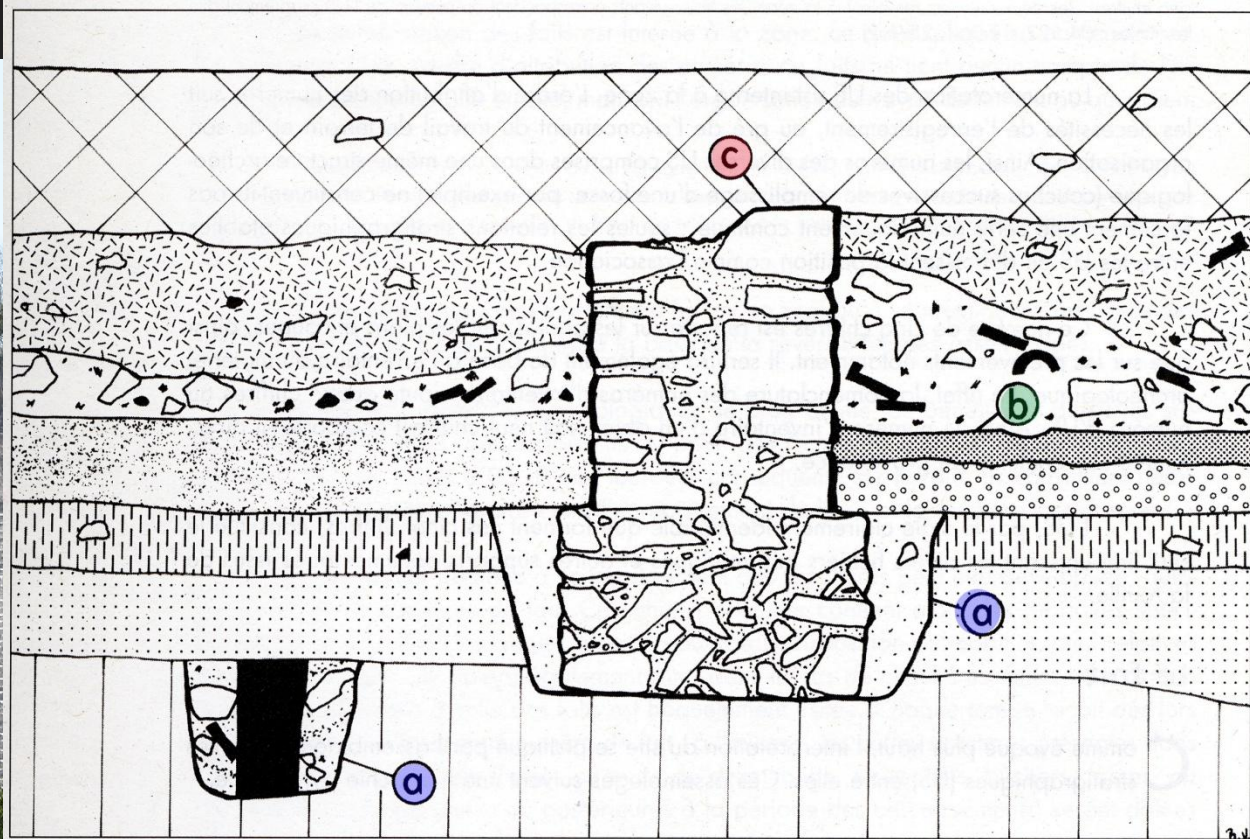
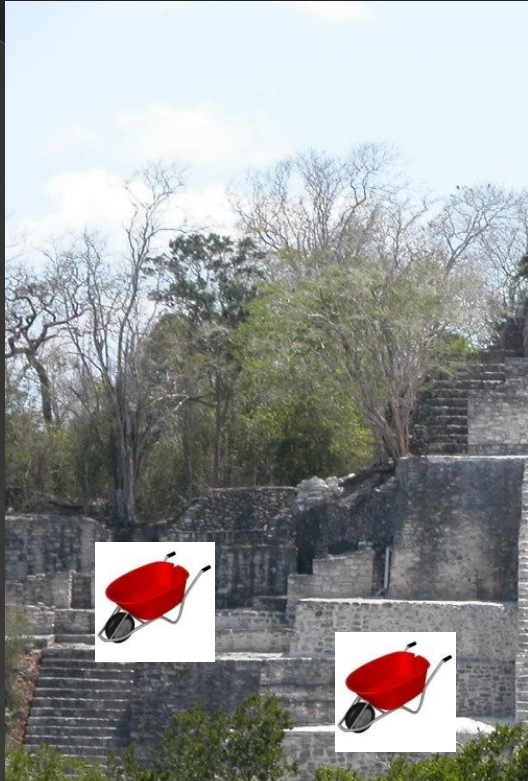


Imagen de las Estructuras II y I en 1932 1ª Expedición Carnegie Institution of Washington





Parte de la decoración del Friso de la Subll c 1

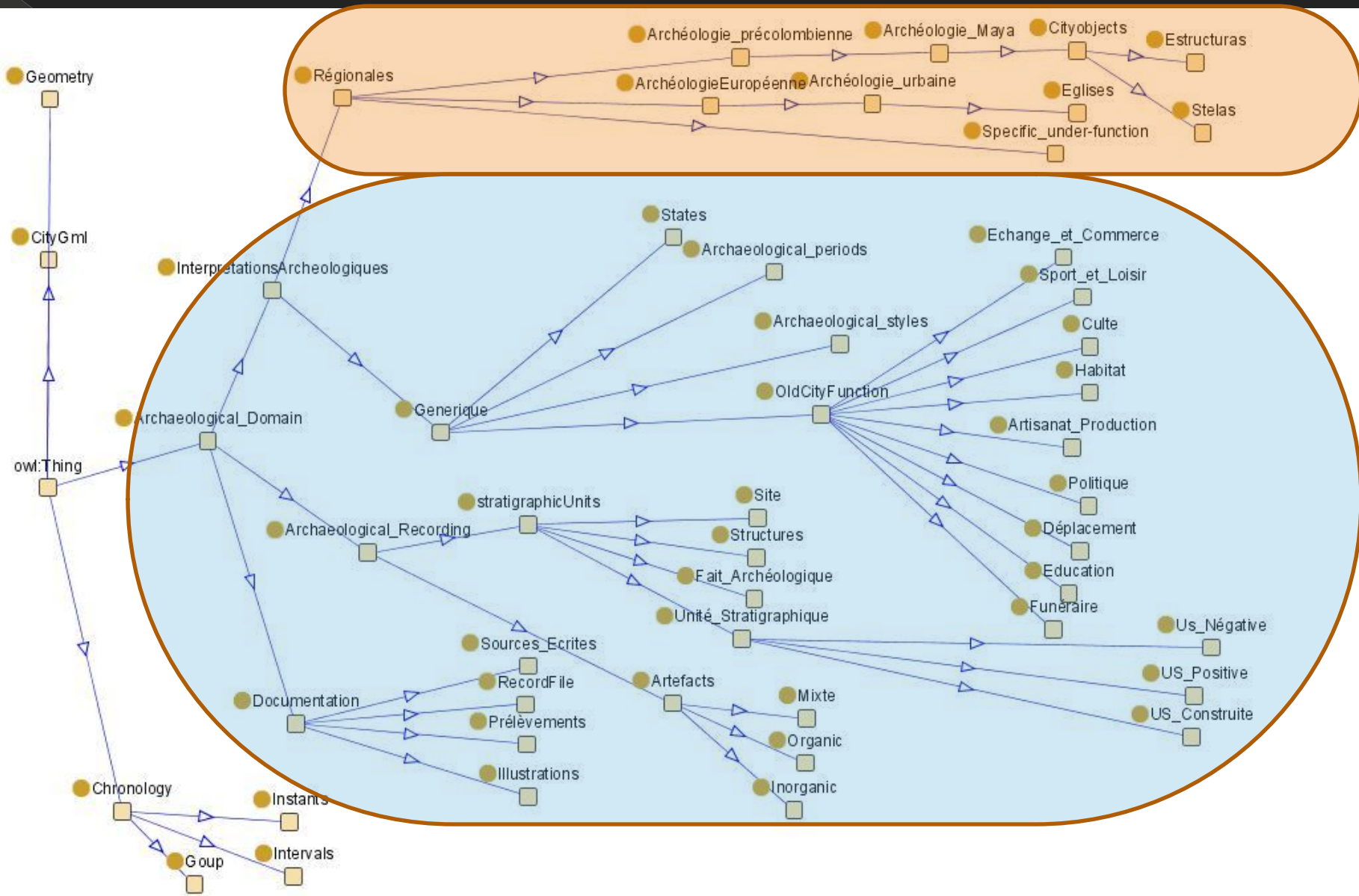


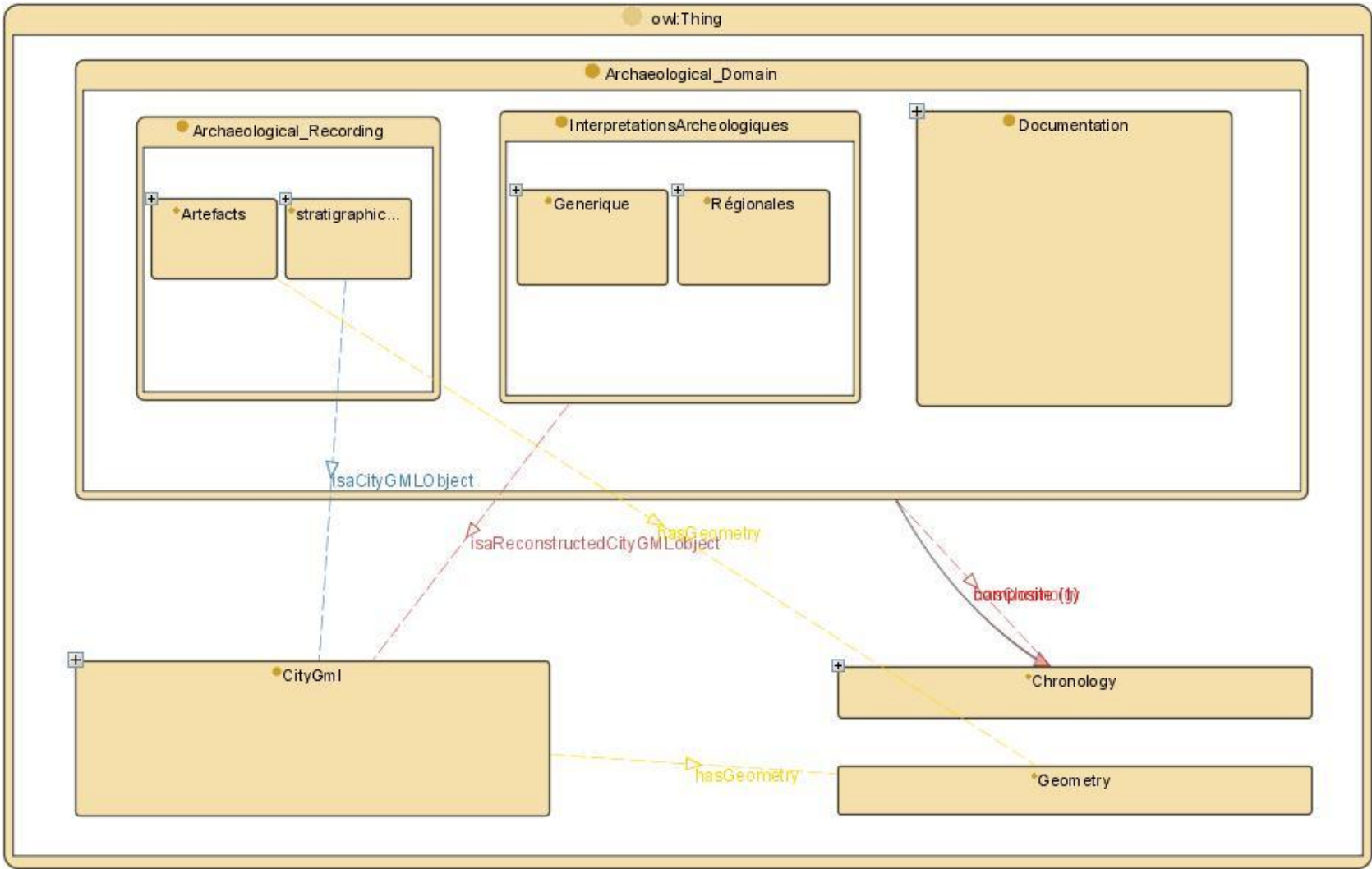
Reconstrucción digital de la Estructura II de Rocío Ruiz Rodarte

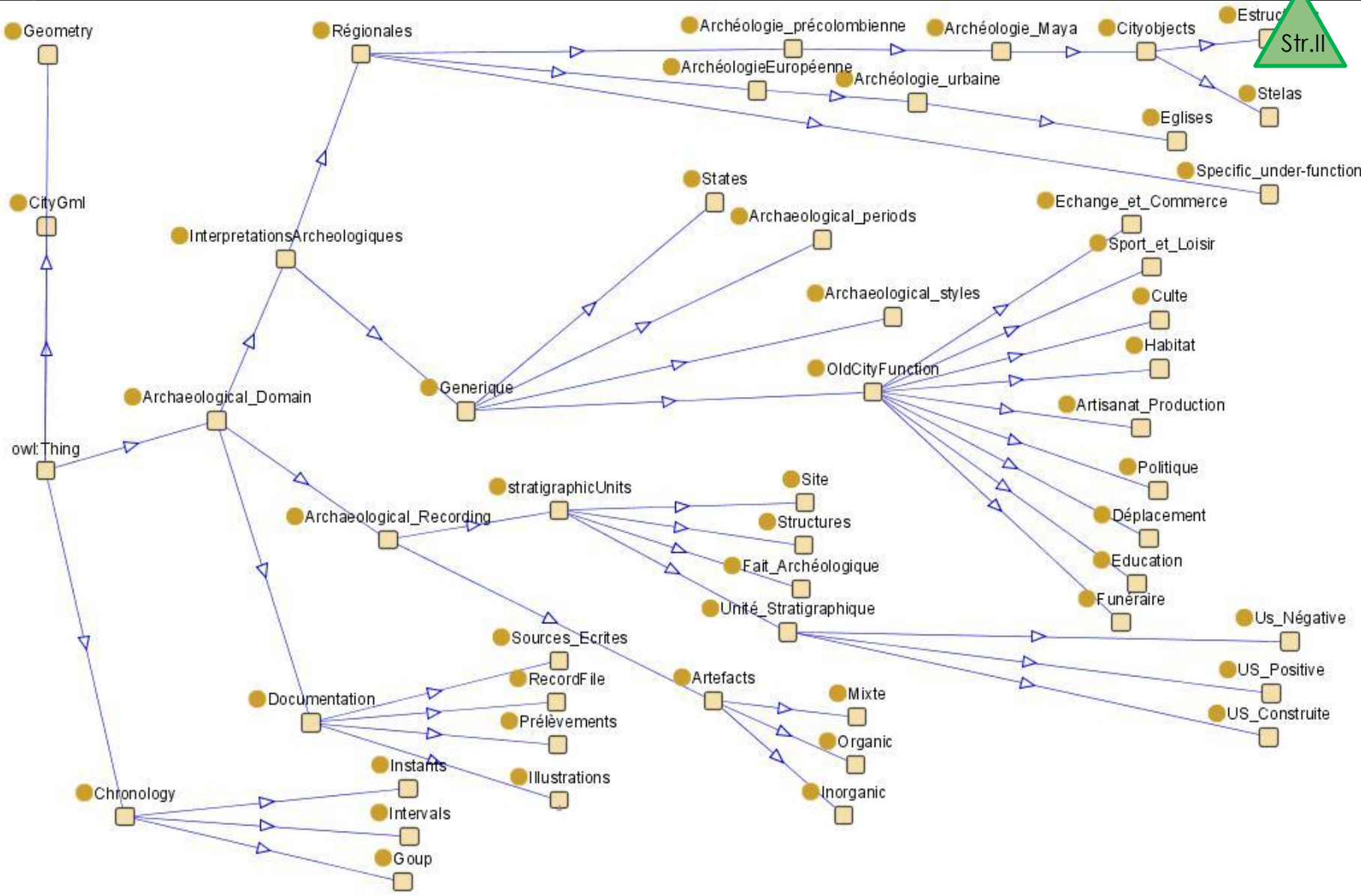
Towards Archaeological ontologies

2 case studies

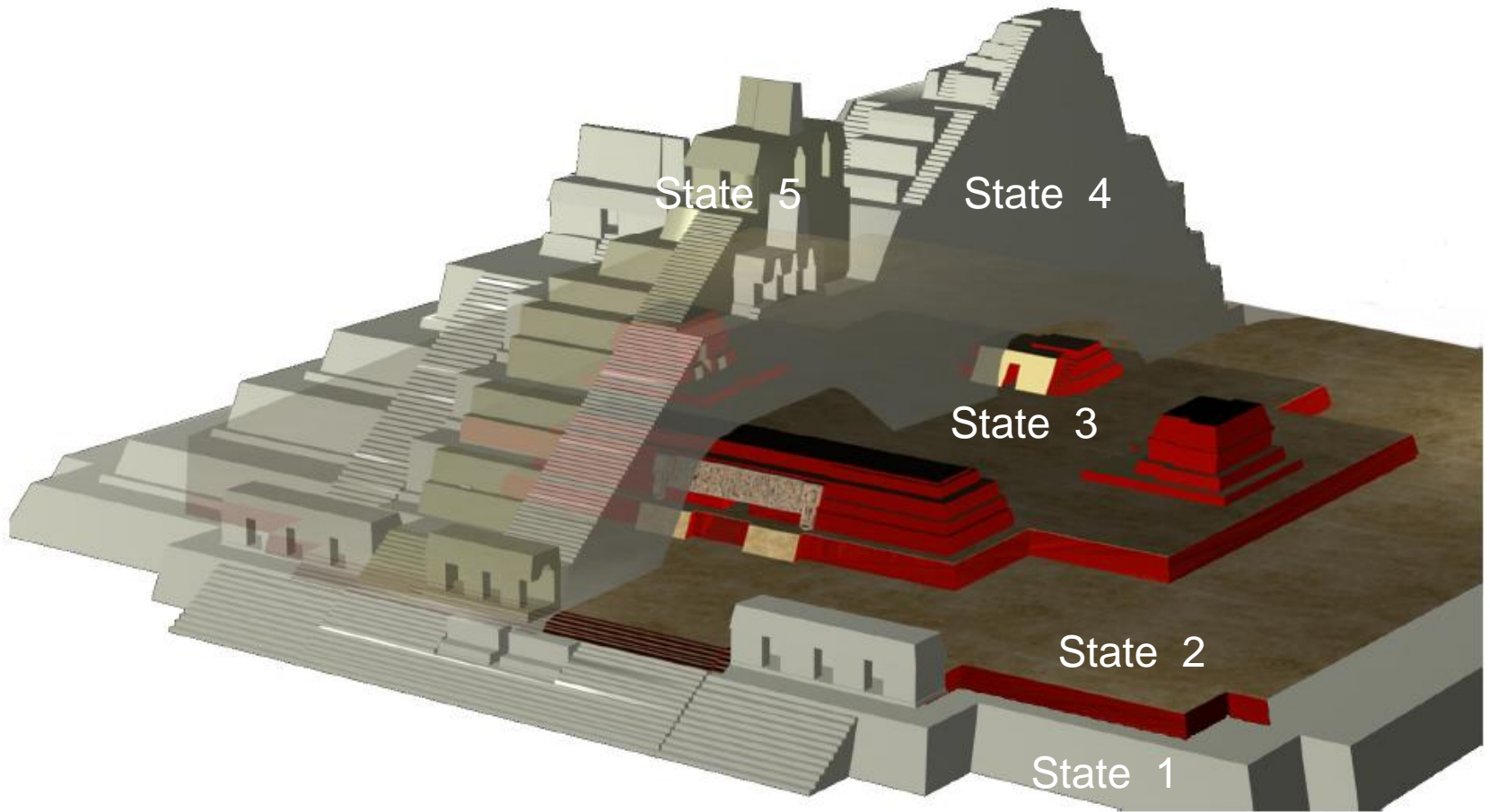




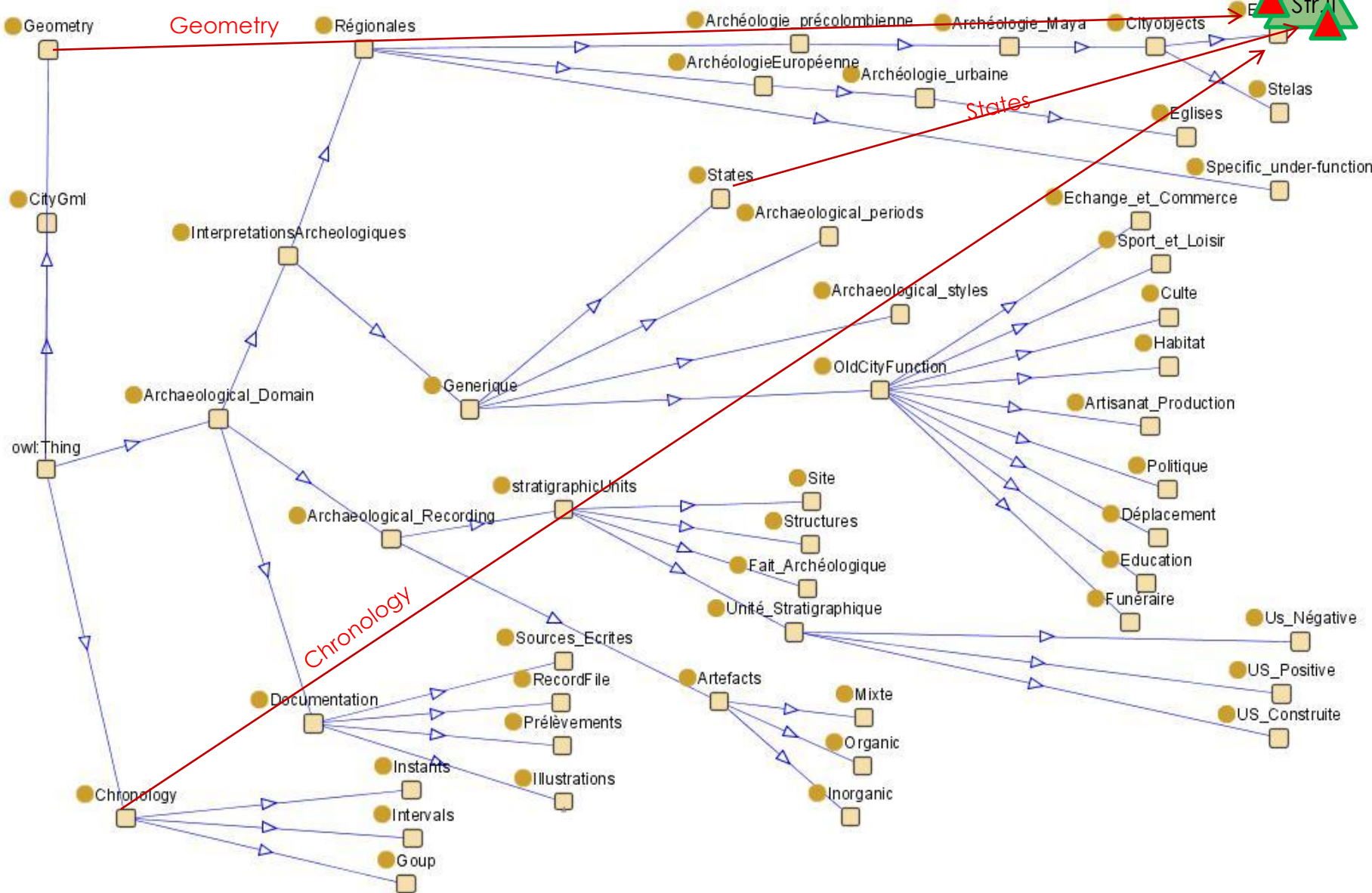


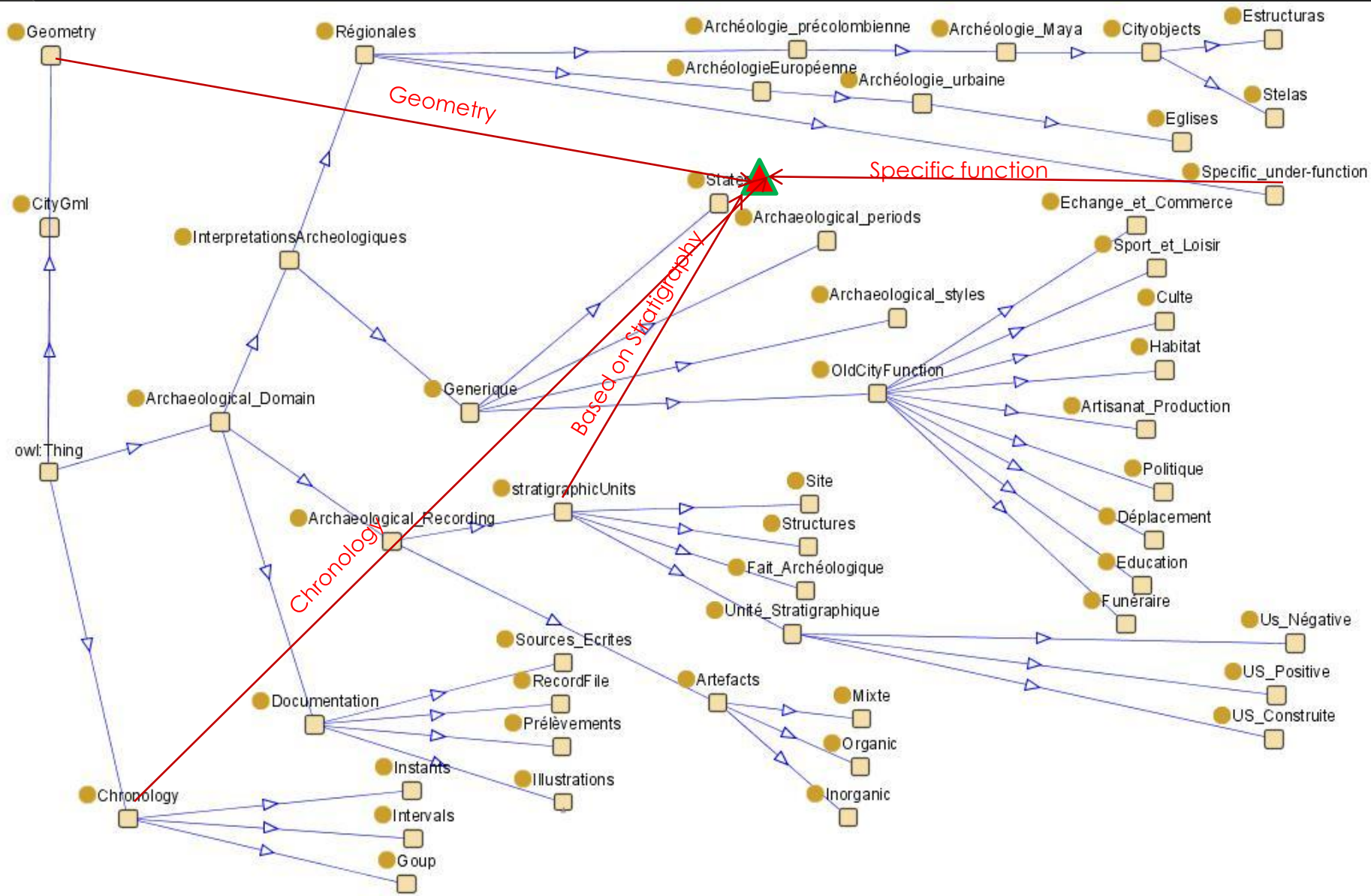


Str.II



Reconstrucción digital de la Estructura II de Rocío Ruiz Rodarte





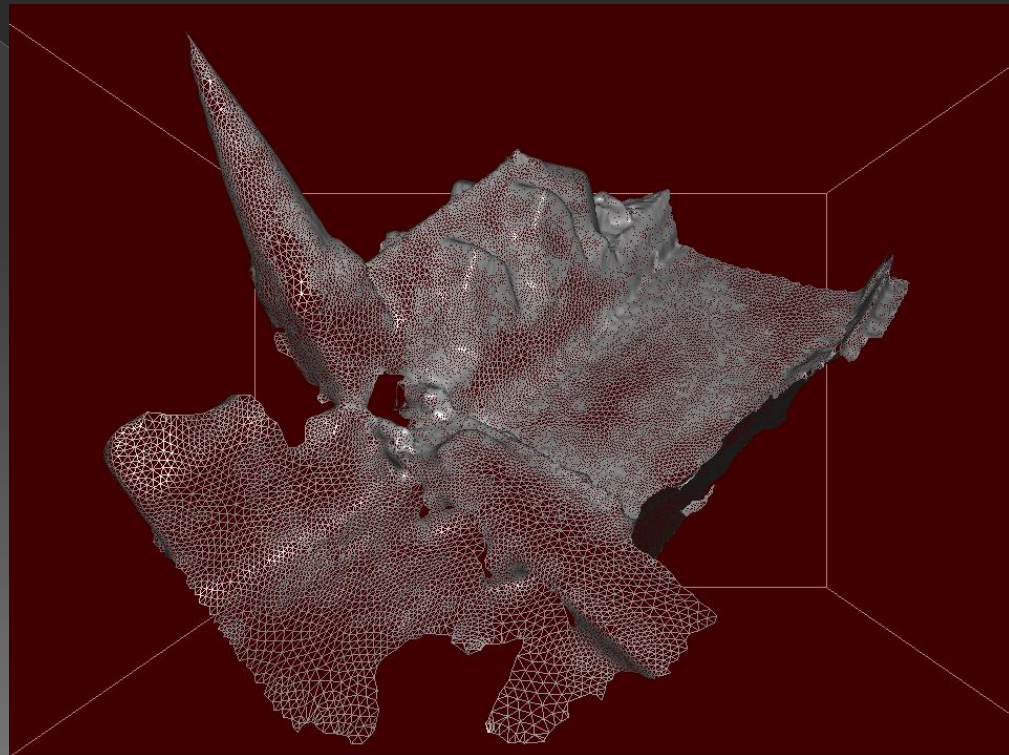
Towards Archaeological ontologies

2nd case study



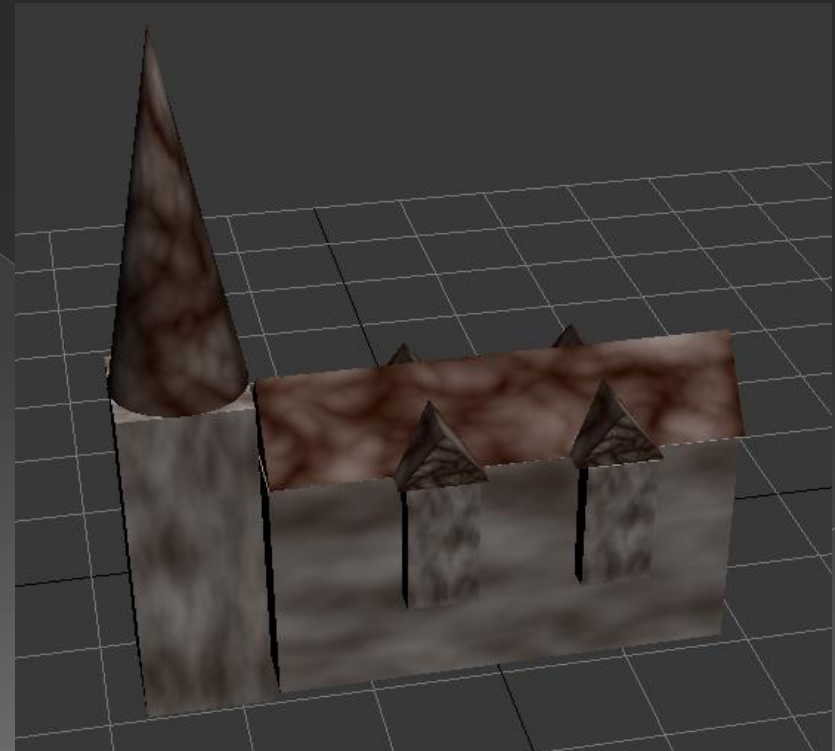
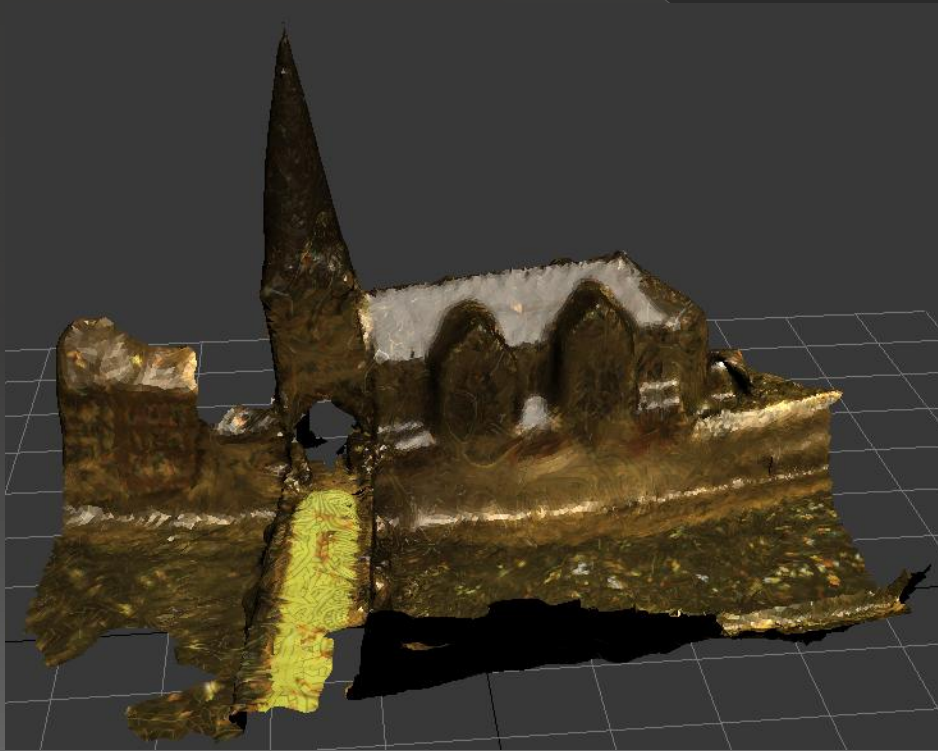
Towards Archaeological ontologies

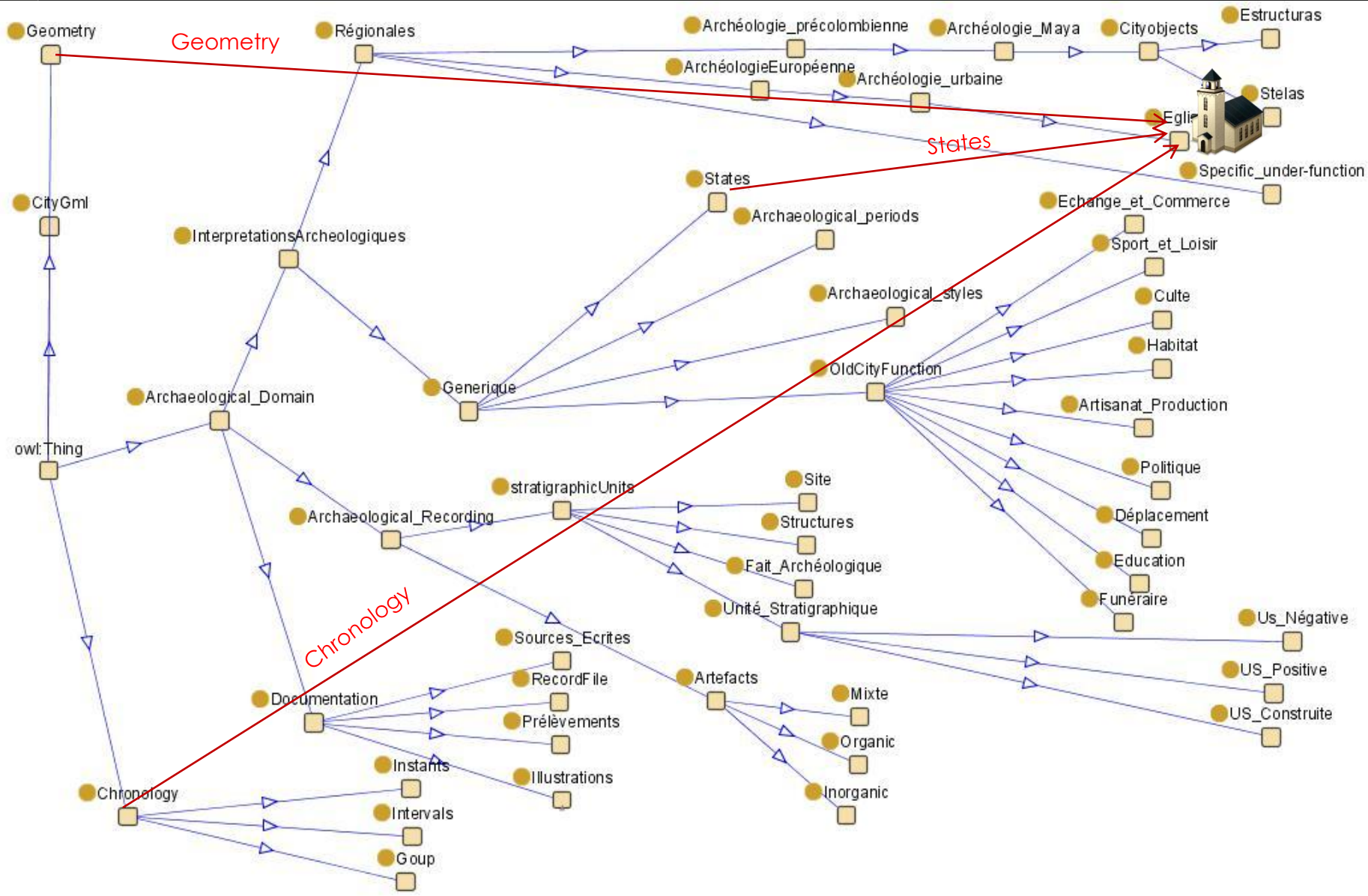
2nd case study

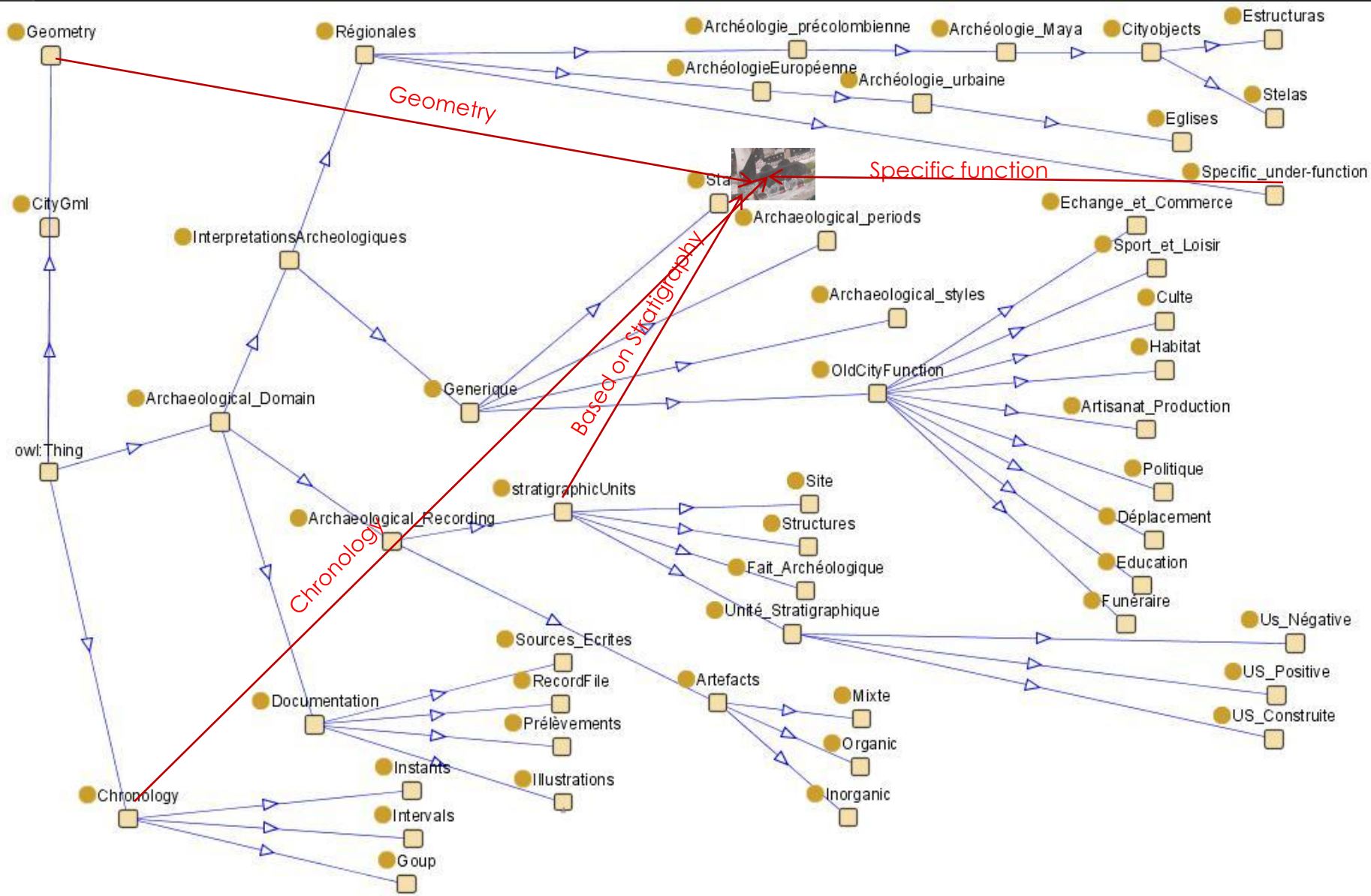


Towards Archaeological ontologies

2nd case study







Conclusions and prospects

- Archaeological information is complex;
 - > uncertainty, chronology, contradictory interpretations...
- Specific archaeological models are needed as well as efficient ways to deal with temporality (→ 4D models)
- CityGML can be used to express part of the related urban semantic and 3D geometry
- This way of managing information is also relevant for urban applications dealing with complex spatio-temporal objects