

Bio CRM – elämätarinoiden kuvaaminen linkitettynä datana

Jouni Tuominen

*HELDIG – Helsinki Centre for Digital Humanities, University of Helsinki, <http://heldig.fi>
Semantic Computing Research Group (SeCo), Aalto University, <http://seco.cs.aalto.fi>
jouni.tuominen@helsinki.fi*

Biographical Conceptual Reference Model

“Create a systematic way to represent biographical information for prosopography, including basic data of people, personal relations, professions, and events with participants in different roles.”

Bio CRM: principles

- **Harmonizing model for different datasets**
 - **Linked Data approach to combine with other cultural heritage datasets**
 - **Separation of the general data model and dataset-specific extensions**
 - **Support for principal query types for prosopographical research**
 - **Intuitive information representation and query writing**
 - **Support for reasoning and validation**
-



Prosopographical use cases

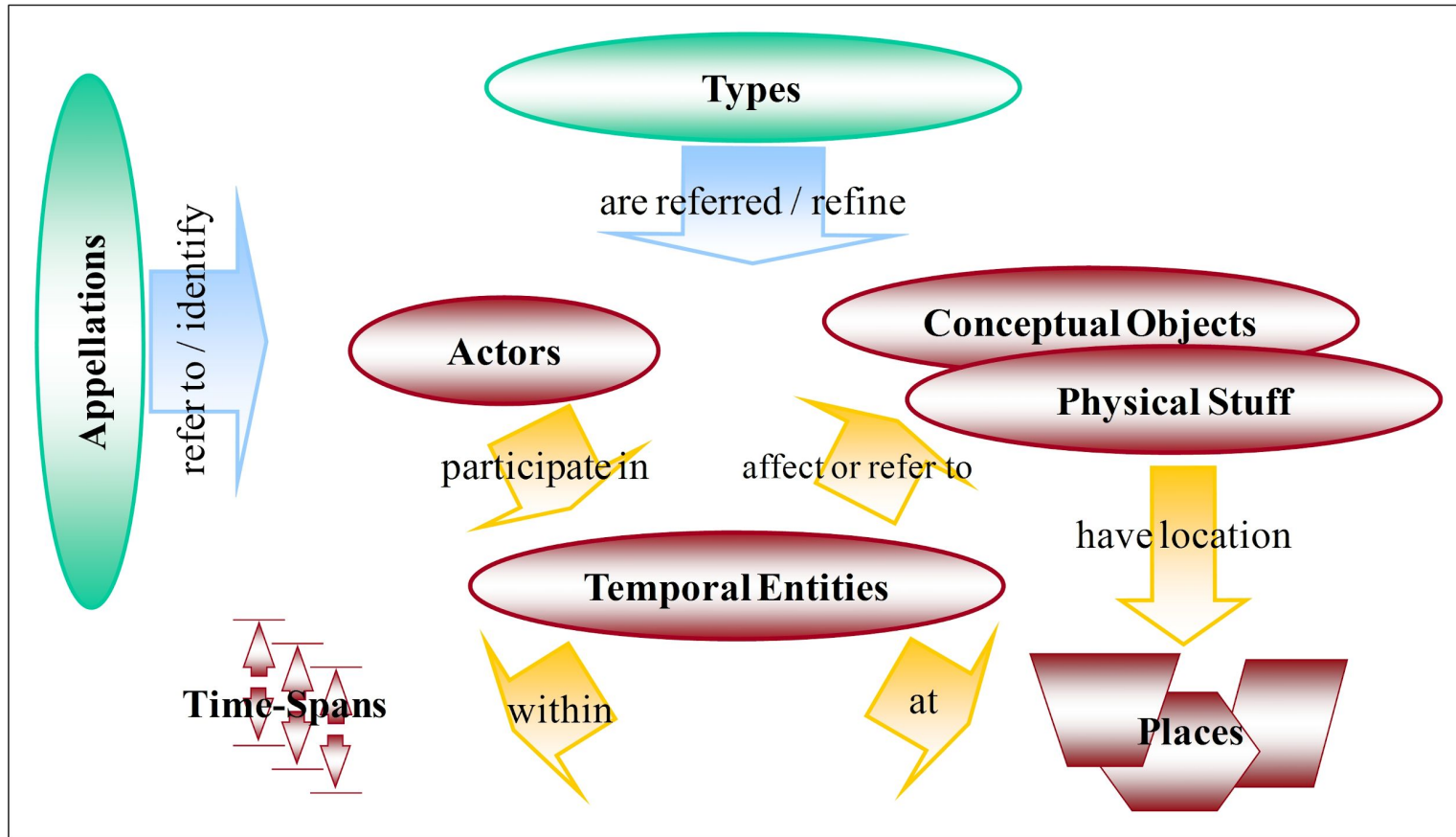
- **Information retrieval.** Find a set of people that share selected characteristics. For example: men who were born in England 1800–1850 and had certain occupations.
- **Network analysis.** Find a network of people based on some criterion. This network can then be analyzed further by network analysis tools or visualizations.
- **Knowledge discovery.** Identify (automatically) a hidden group of people in the data that share some characteristics of interest that are not known before hand.
- **Dynamic analysis.** Analyze the structure and changing composition of a group and the changing roles of individuals or subgroups.



CIDOC CRM

- **Event-based model for cultural heritage data**
- **Natural basis for representing biographical data**
- **Person's life can be seen as a sequence of spatiotemporal, possibly interlinked events from birth to death**

CIDOC CRM events (or temporal entities)



What is an event?

- **Are professions events, such as being a bishop or a president, because holding an office occurs in time and space with an agent involved?**
- **Are family relationships events, e.g., getting and being married?**
- **Modeling everything as an event gets quite complicated**

Role-based modeling as a solution

- **Attributes are properties of a person that are assumed to characterize her independently of time and space, e.g., profession**
- **Relationships are established between people and are assumed to characterize the people independently of time and space, e.g., father-of**
- **Events take place in time and space and involve participants in different roles**
- **All these are expressed using roles**



Existing options for representing roles in events

- **W3C PROV (used in EMLO Linked Data pilot)**
- **CIDOC CRM (CRMpc proposal)**
- **VIVO/BFO**
- **Simple Event Model (SEM)**
- **Custom role specific-properties**
- **schema.org**

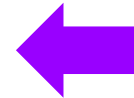
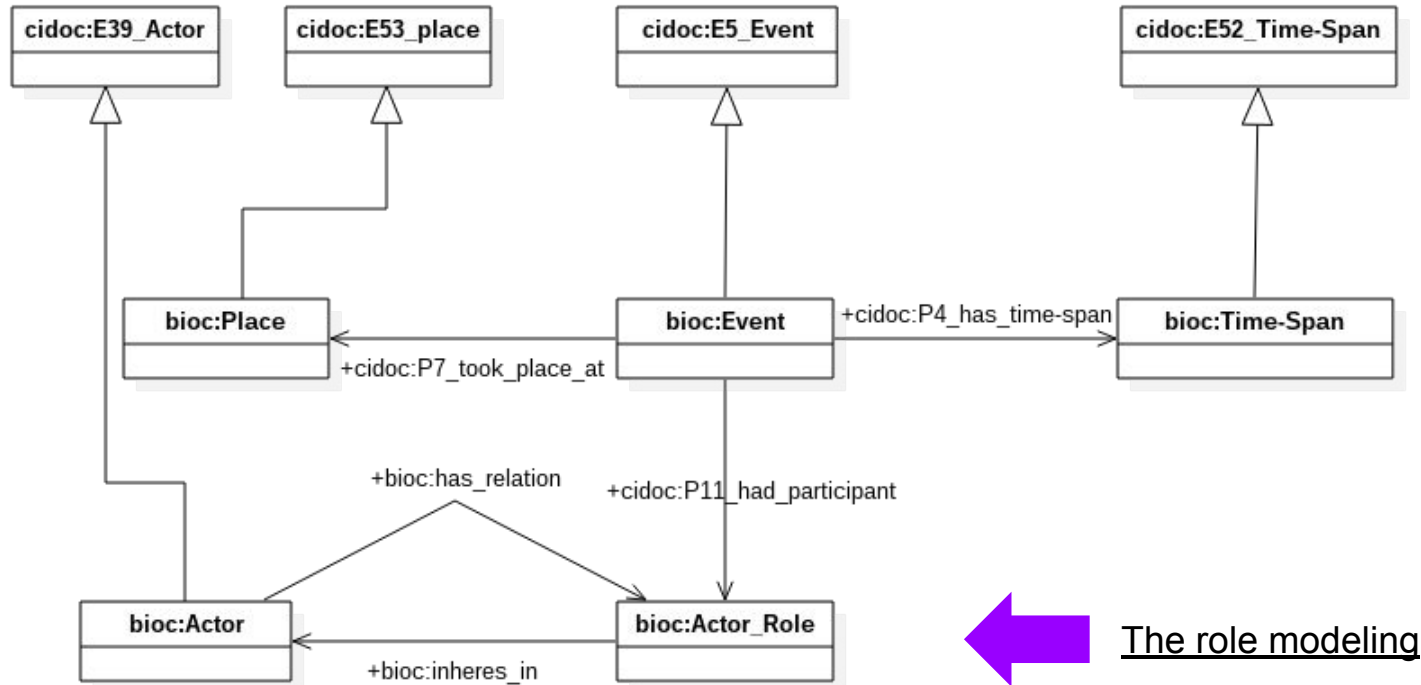
Further discussion:

<https://docs.google.com/document/d/1XplgUBjCz16nYwhmLwxKV5av6dn3QHz5o8pMN6jTUbg>

Roles as instances (VIVO/BFO-inspired)

- **Unary roles (attributes): Female, British, Bishop, ...**
 - John F. Kennedy has the role President
- **Binary relationship roles: Father, Teacher, Member, ...**
 - John F. Kennedy has Spouse Jacqueline Kennedy Onassis
- **Roles in events: Baptismal candidate, Participant, ...**
 - John F. Kennedy has the role Assassination target in the Assassination event in Dallas, Texas on Friday November 22, 1963

Core classes of Bio CRM



The role modeling