Ontologies for prosopography
CIDOC-CRM

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DH2014, Lausanne, Workshop July 8th
Agenda

• Prosopography
• Event centric modelling
• Models for information integrations
• Modelling relations between actors
• Conclusions
• Thank You
Prosopography is the investigation of the common background characteristics of a group of actors in history by means of a collective study of their lives.

Lawrence Stone 1971
Prosopography

• Prosopography is not biography.
• Data sets about persons have for many years been used in multivariable statistical analysis.
  – The purpose is not to reconstruct the life of an individual, but to detect patterns in a group.
• A new trend is prosopography network analysis
  – networks of persons where the edges in the network are relations between the persons (i.e. what is found in modern social media).
Prosopography – areas for conceptual models (ontologies)

- **Source**
  - The physical source, inscriptions, manuscripts, books, census

- **Provenience**
  - The path from source to digital format, transcriptions, conversions of data sets

- **Information in the source data**
  - persons, background, relatives, income, profession, relations to other persons etc.
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Event oriented analysis and model:

- Objects
- Abstracts
- Places
- Actors
- Events
- Time-span
- Appellations
- Types

Events
- involved
- where
- when

participate in

identify

characterize
The CIDOC CRM
Top-level classes useful for integration

E55 Types

E39 Actors

E28 Conceptual Objects

E18 Physical Thing

E2 Temporal Entities

E52 Time-Spans

E53 Places

Location

participate in

affect or / refer to

refer to / refine

E41 Appellations

refer to / identify

at
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Models for information integration

• CIDOC CRM
  – Developed by ICOM-CIDOC 2001 ->
  – Intellectual guide for information analysis
  – Formal ontology, object oriented definition
  – Expressed in RDF/OWL
  – Extensions for archaeology, scientific, observation, spatiotemporal reasoning
  – Ongoing work on a reference model of data provision and aggregation
Models for information integration

- FRBRoo
  - Developed jointly by IFLA FRBR revision group and ICOM-CIDOC 2003 ->
  - Harmonized with CIDOC CRM
  - Formal ontology, object oriented definition
  - Expressed in RDF/OWL
  - Extension PRESSoo for serials
The CIDOC CRM
The hierarchy for data integration

• Examples from the formal definition
  – The E2 Temporal Entity Hierarchy
  – The Participation Properties
  – The E70 Thing Hierarchy
The CIDOC CRM

The E2 Temporal Entity Hierarchy
The CIDOC CRM

The Participation Properties

Diagram showing participation properties such as:
- P25 moved (moved by)
- P11 had participant (participated in)
- P93 took out of existence (was taken out of existence by)
- P31 has modified (was modified by)
- P92 brought into existence (was brought into existence by)

Generalization and Specialization arrows are shown connecting these properties.
The CIDOC CRM
E70 Thing

Generalization

Specialization
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Relations between persons

- **SNAP** (Standards for Networking Ancient Prosopographies, http://snapdrgn.net/)
  - mentions at least 65 relations

- **CIDOC-CRM**
  - Only one explicit relation between persons
  - Mother, father, siblings etc. are modelled through events
  - Contains a general model-schema for relations between actors/persons
  - Kinds of relations are expressed via types, e.g. connected vocabularies in SKOS
Relation parent – child

- **E21 Person**
  - P152 has parent
  - P98 Was born
    - E67 Birth
      - P96 By mother
      - P97 From father
        - E21 Person
Relations between persons: marriage

- E5 Event
  - E53 Place
  - E52 Time-Span
  - P14 participating
    - E21 Person
      - P14.1 in the role of E55 Type Bride
      - Spouses
    - E21 Person
      - P14.1 in the role of E55 Type Groom
Relations between persons: marriage

E55 Type
wedding

E53 Place

E52 Time-Span

E5 Event
P95 has formed
E85 Joining

E53 Group

E55 Type
Married couple

P14.1 in the role of

E21 Person

P14.1 in the role of

E21 Person

Spouses

P107 is current or former member of

E55 Type
Groom

E55 Type
Husband

E55 Type
Wife

E55 Type
Bride

P107.1 kind of member

P14.1 kind of member
Relations between persons: marriage without events

- **E21 Person**
- **E21 Person**
- **Spouses**

**E53 Group** → **E55 Type Married couple**

**P107 is current or former member of**

- **E55 Type Husband**
- **E55 Type Wife**

**P107.1 kind of member**

**Spouses**
Relations between of persons/actors

- A relation is modelled as a group
- Related actors are members
- In asymmetric relations, use typed properties
- Events express changes over time
  - establishing, joining, leaving, dissolving
- Information with no dating, no place
  - shortcuts from actors to group
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Summing up

- CIDOC CRM
  - Formal ontology – supports deduction systems e.g. investigation databases
  - Can be expressed in RDF/OWL
  - Coherently integrates information at varying degrees of detail
  - Designed for mediation of cultural heritage information
  - Enables story telling / provenance of cultural objects and persons
Summing up

• Information integration
  – View the contextual information as first class objects
  – Add provenance to your database system
  – Keep track of the events your objects has been involved in
  – Link your objects to accepted authorities/vocabularies
Thank You

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