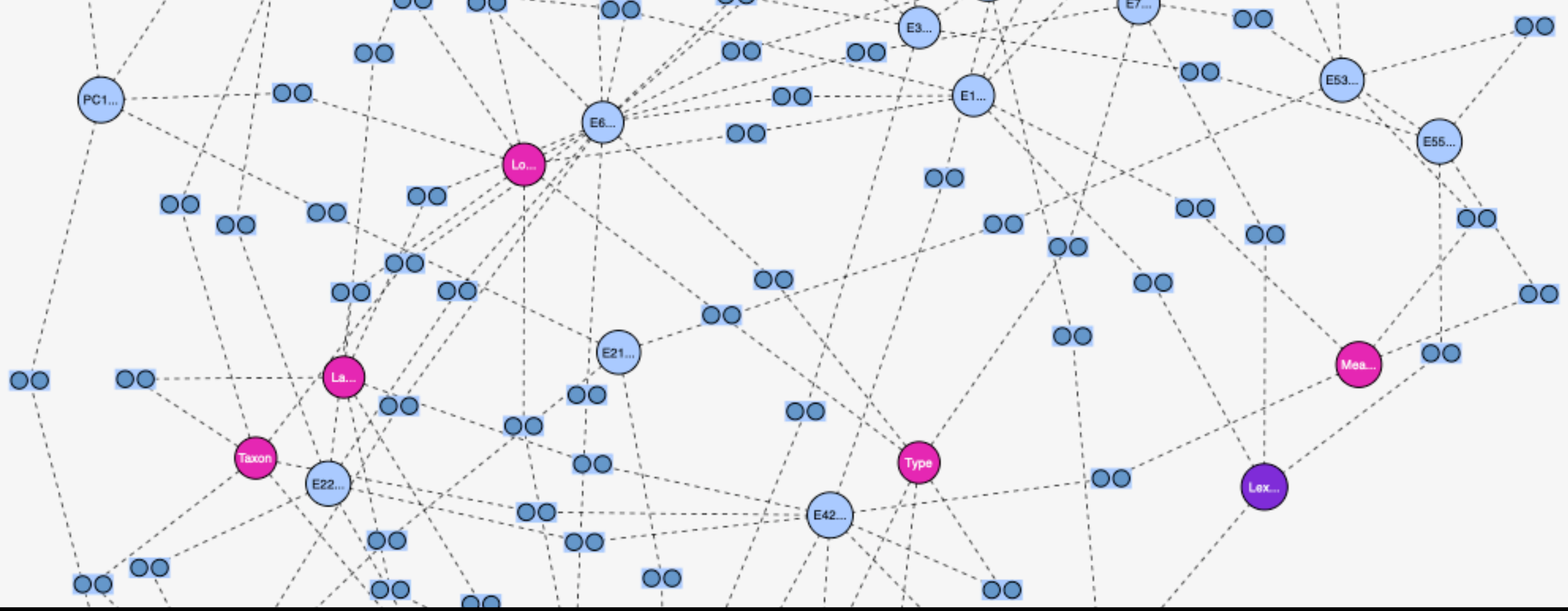
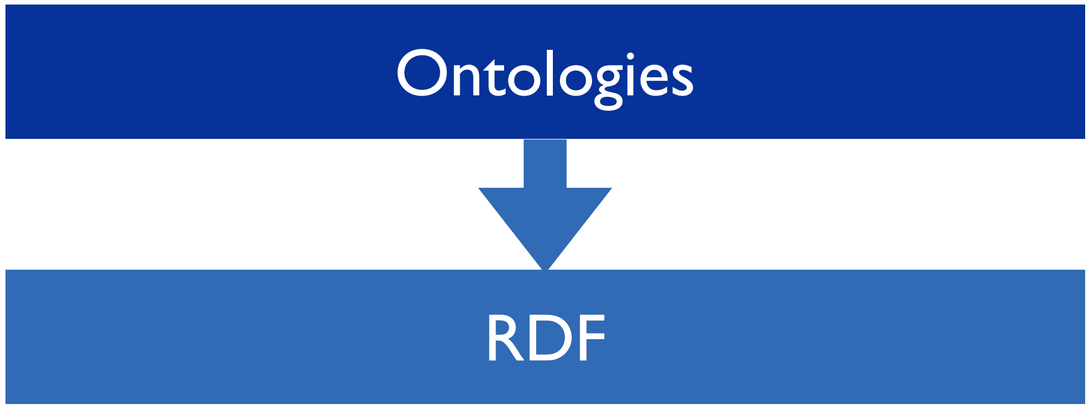


REPRÉSENTATION DES CONNAISSANCES

NICOLA CARBONI

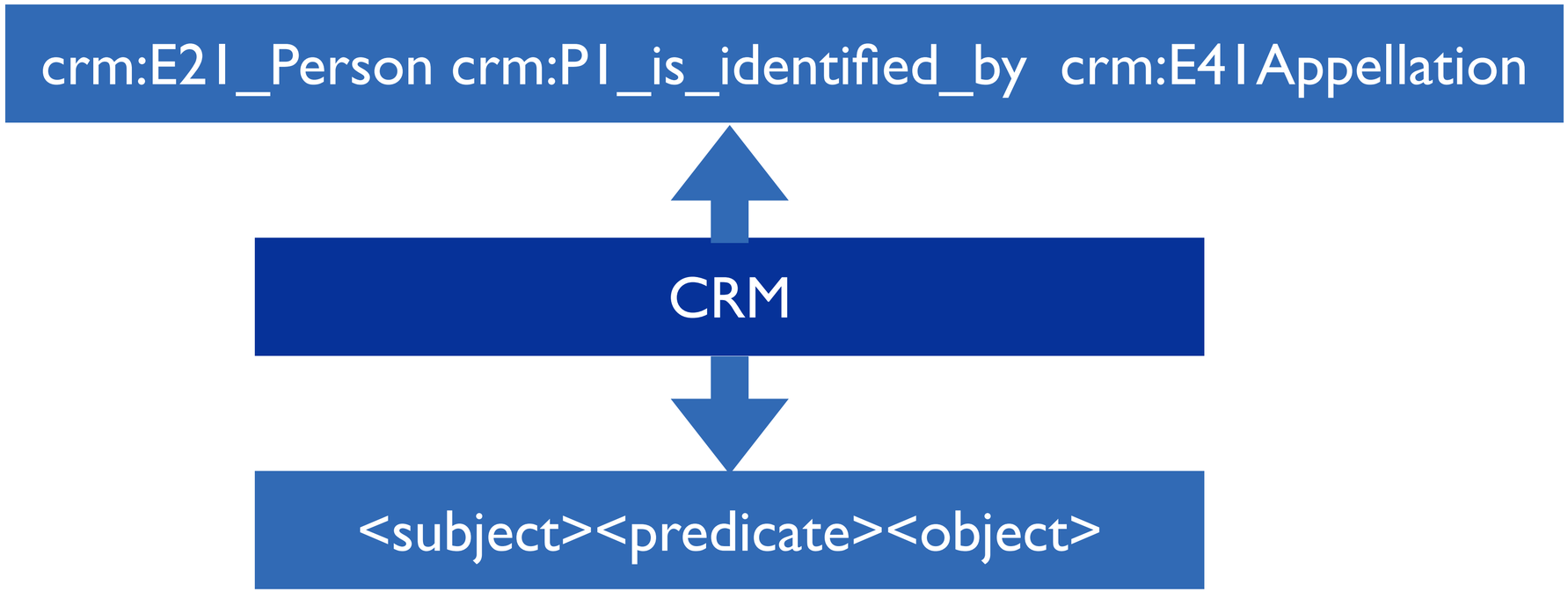
Model

Mapping



Model

Mapping



Model

Representation of the structure within your data

Mapping

Transform each piece of information according to the built model

Author

Work

Owner

E21 Person

E22 Human-Made Object

E39 Actor or E74 Group

E21 Person:

Name
Gender
Birth
Death
Place/country of Birth
Place/country of Death
Coordinates

E22 Human-Made Object

Title
Description
Measurement
Time of creation
Material
Identifier

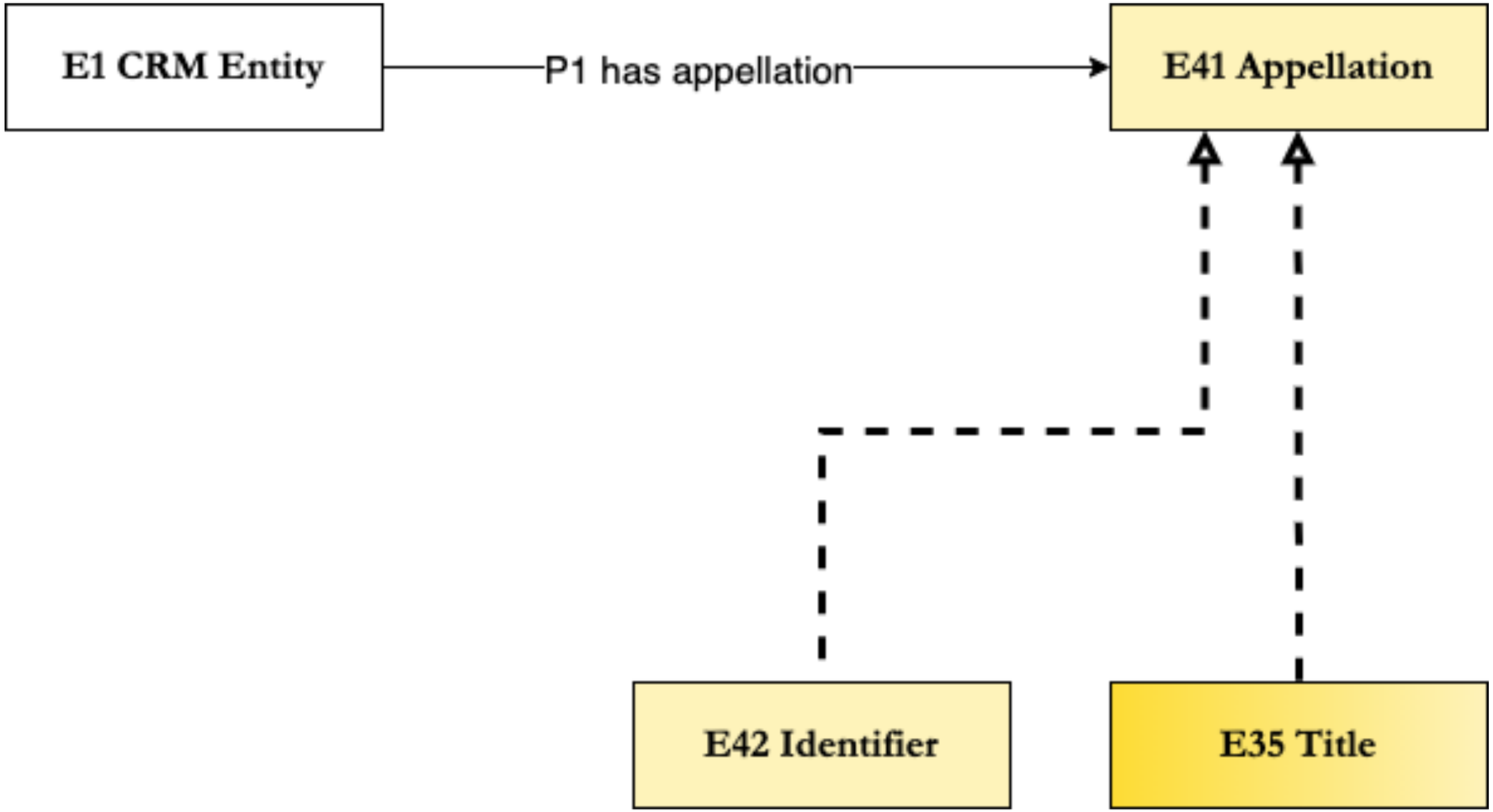
E39 Actor => institution

Name
Place where it is
Country where it is
Coordinates

E22 Human-Made Object

Title
Description
Measurement

Material
Identifier


E1 CRM Entity
P1 has appellation
E41 Appellation
E42 Identifier
E35 Title

E35 Title

This class comprises textual strings that within a cultural context can be clearly identified as titles due to their form. Being a subclass of E41 Appellation, E35 Title can only be used when such a string is actually used as a title of a work, such as a text, an artwork, or a piece of music. Titles are proper noun phrases or verbal phrases, and should not be confused with generic object names such as "chair", "painting" or "book" (the latter are common nouns that stand for instances of E55 Type). Titles may be assigned by the creator of the work itself, or by a social group. This class also comprises the translations of titles that are used as surrogates for the original titles in different social contexts.

Examples:

"The Merchant of Venice" (McCullough, 2005)
"Mona Lisa" (Mohen, 2006)
"La Pie or The Magpie" (Bortolatto, 1981)
"Lucy in the Sky with Diamonds" (Lennon, 1967)

E42 Identifier

This class comprises **strings or codes assigned to instances of E1 CRM Entity in order to identify them uniquely** and permanently within the context of one or more organisations. Such codes are often known as inventory numbers, registration codes, etc. and are typically composed of alphanumeric sequences. Postal addresses, telephone numbers, urls and e-mail addresses are characteristic examples of identifiers used by services transporting things between clients. The class E42 Identifier is not normally used for machine-generated identifiers used for automated processing unless these are also used by human agents.

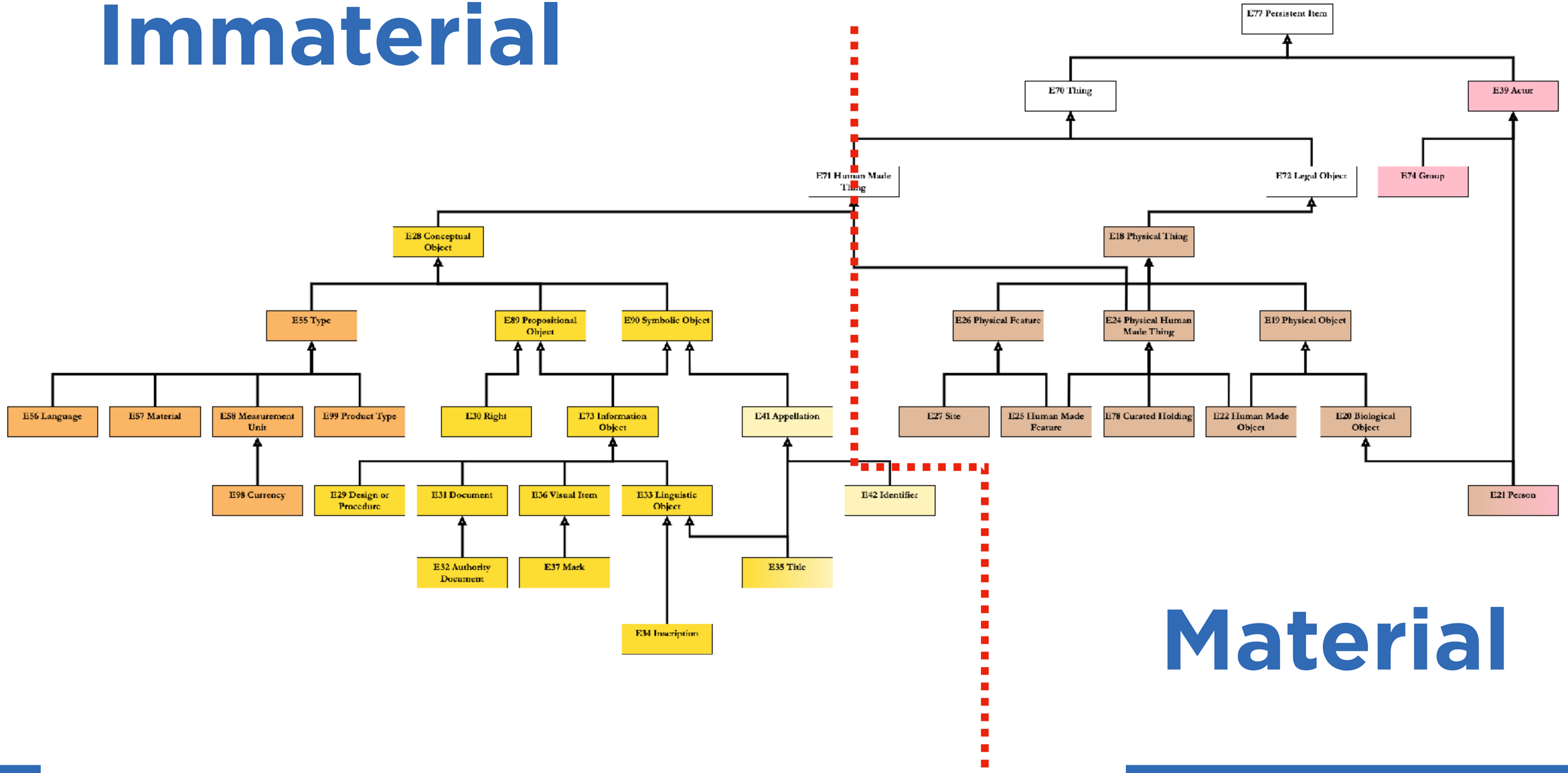
Examples: "MM.GE.195" "13.45.1976" "OXCMS: 1997.4.1" ISSN "0041-5278" ISRC "FIFIN8900116" Shelf mark "Res 8 P 10"

E22 Human-Made Object

~~*Title*~~
Description
Measurement

Material
~~*Identifier*~~

Immaterial



Material

Conceptual object

This class comprises non-material products of our minds and other human produced data that have become objects of a discourse about their identity, circumstances of creation or historical implication. The production of such information may have been supported by the use of technical devices such as cameras or computers.

Symbolic object

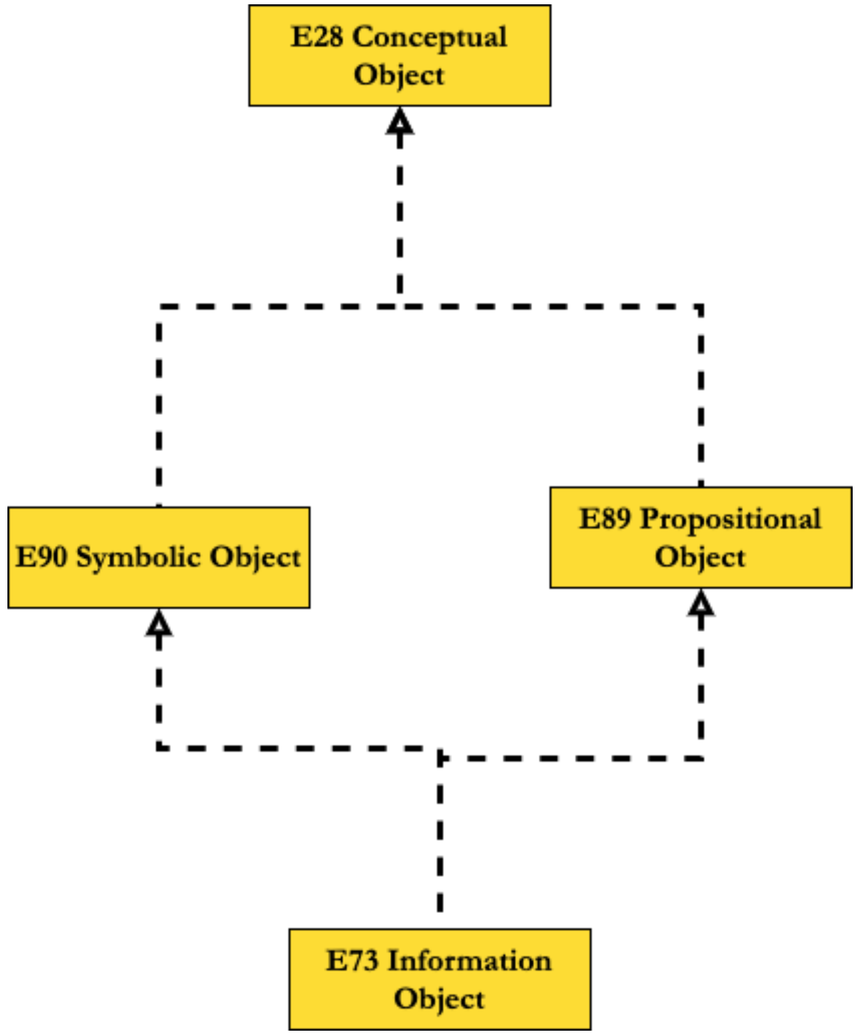
This class comprises identifiable symbols and any aggregation of symbols, such as characters, identifiers, traffic signs, emblems, texts, data sets, images, musical scores, multimedia objects, computer program code or mathematical formulae that have an objectively recognizable structure and that are documented as single units.

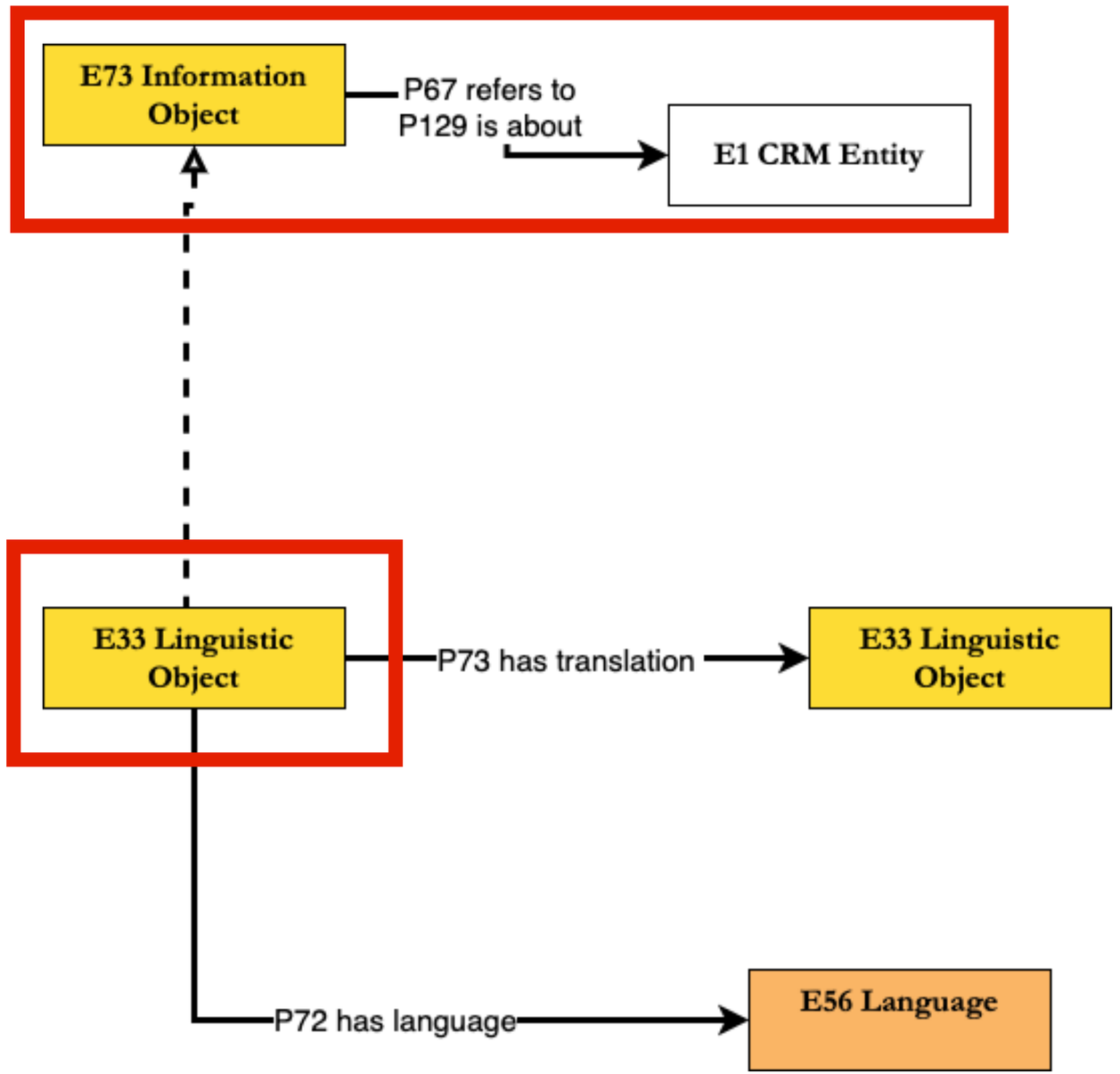
Propositional object

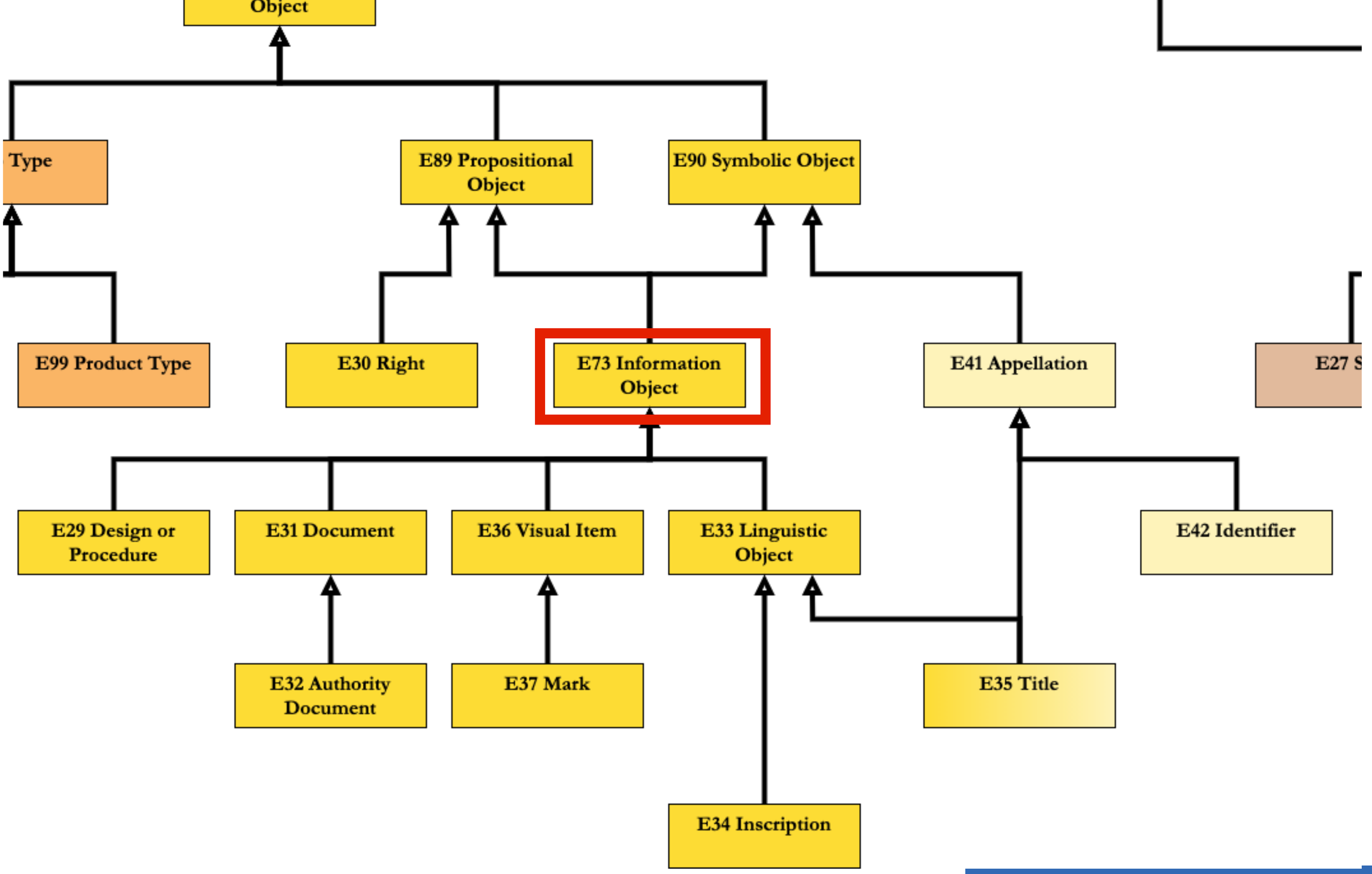
This class comprises immaterial items, including but not limited to stories, plots, procedural prescriptions, algorithms, laws of physics or images that are, or represent in some sense, sets of propositions about real or mental things and that are documented as single units or serve as topic of discourse.

Information object

This class comprises identifiable immaterial items, such as a poems, jokes, data sets, images, texts, multimedia objects, procedural prescriptions, computer program code, algorithm or mathematical formulae, that have an objectively recognizable structure and are documented as single units



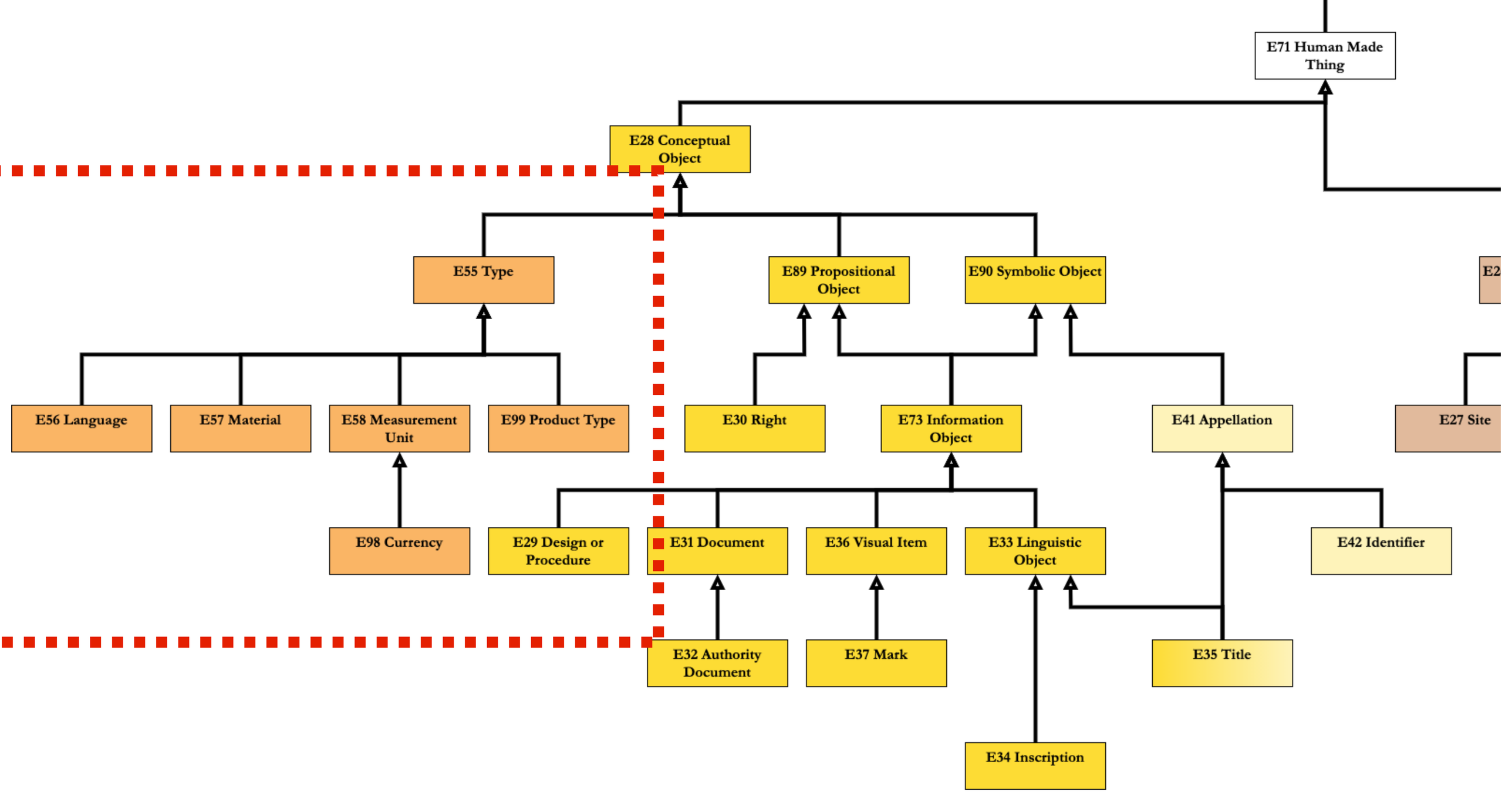

E73 Information Object
P67 refers to
P129 is about
E1 CRM Entity
E33 Linguistic Object
P73 has translation
E33 Linguistic Object
P72 has language
E56 Language

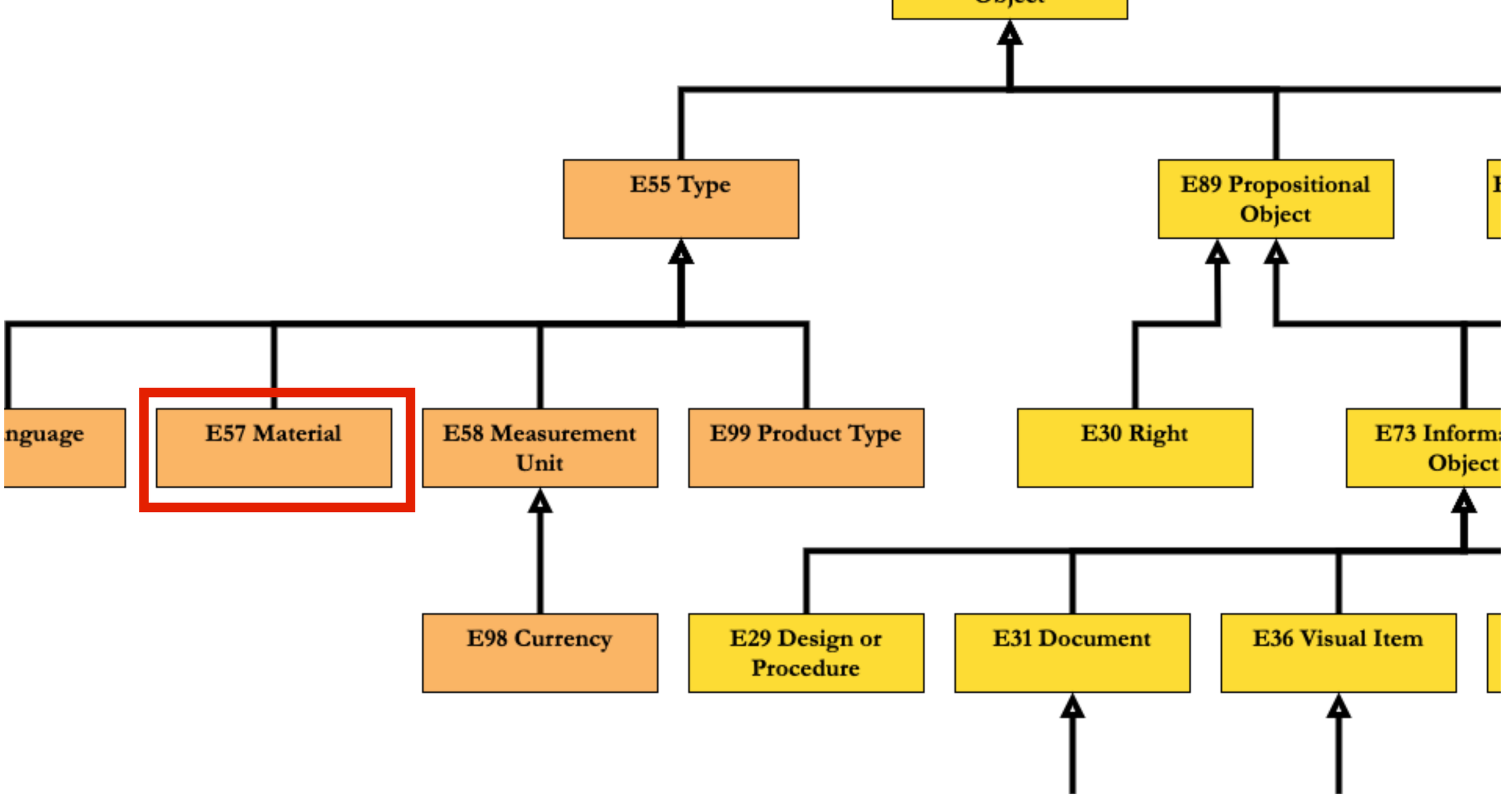

Object
Type
E89 Propositional Object
E90 Symbolic Object
E99 Product Type
E30 Right
E73 Information Object
E41 Appellation
E27 S
E29 Design or Procedure
E31 Document
E36 Visual Item
E33 Linguistic Object
E42 Identifier
E32 Authority Document
E37 Mark
E35 Title
E34 Inscription

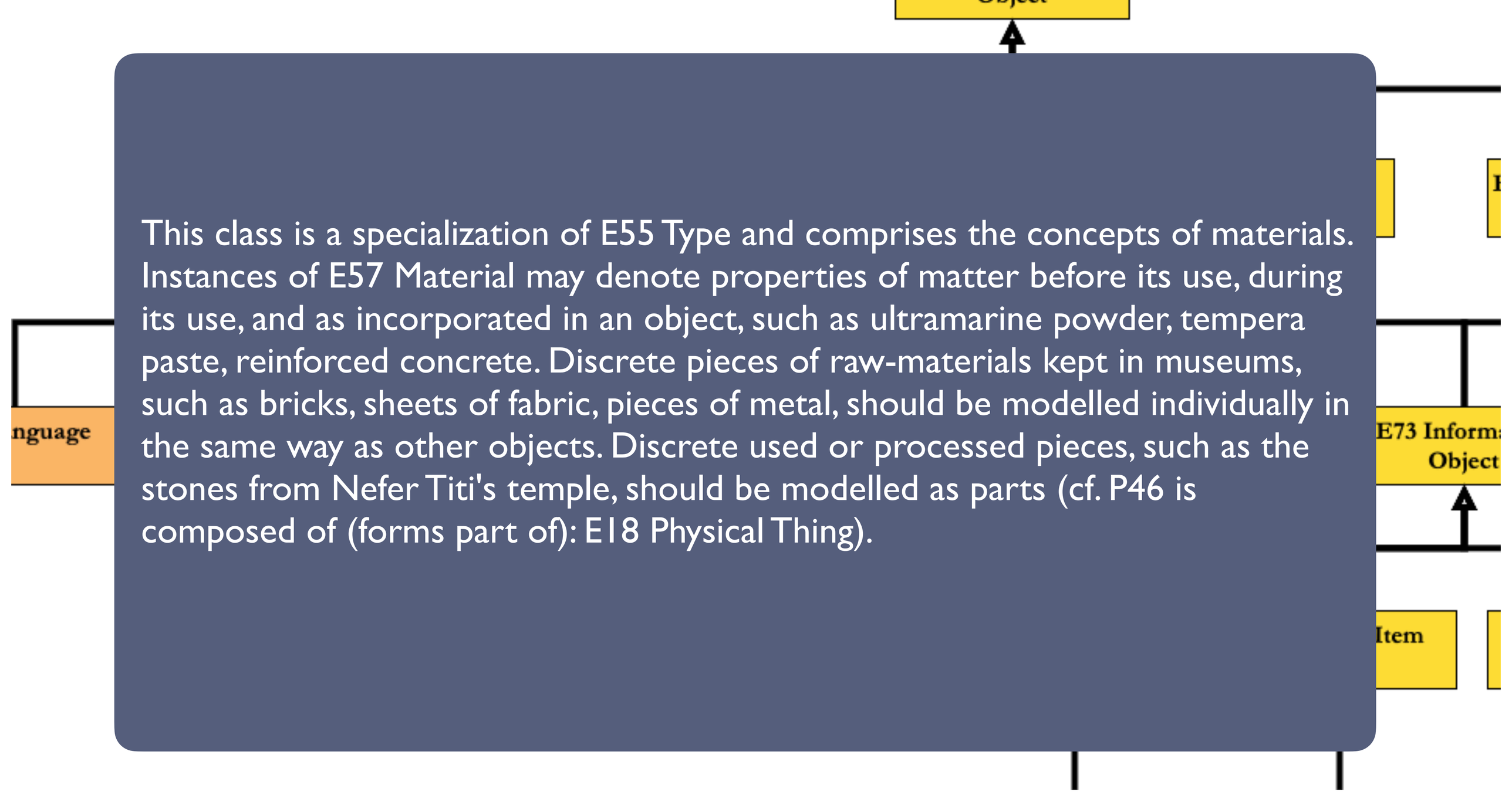
E22 Human-Made Object

~~*Title*~~
~~*Description*~~
Measurement

Material
~~*Identifier*~~


E71 Human Made Thing
E28 Conceptual Object
E55 Type
E89 Propositional Object
E90 Symbolic Object
E56 Language
E57 Material
E58 Measurement Unit
E99 Product Type
E30 Right
E73 Information Object
E41 Appellation
E27 Site
E98 Currency
E29 Design or Procedure
E31 Document
E36 Visual Item
E33 Linguistic Object
E42 Identifier
E32 Authority Document
E37 Mark
E35 Title
E34 Inscription


E55 Type
E89 Propositional Object
nguage
E57 Material
E58 Measurement Unit
E99 Product Type
E30 Right
E73 Inform
Object
E98 Currency
E29 Design or Procedure
E31 Document
E36 Visual Item

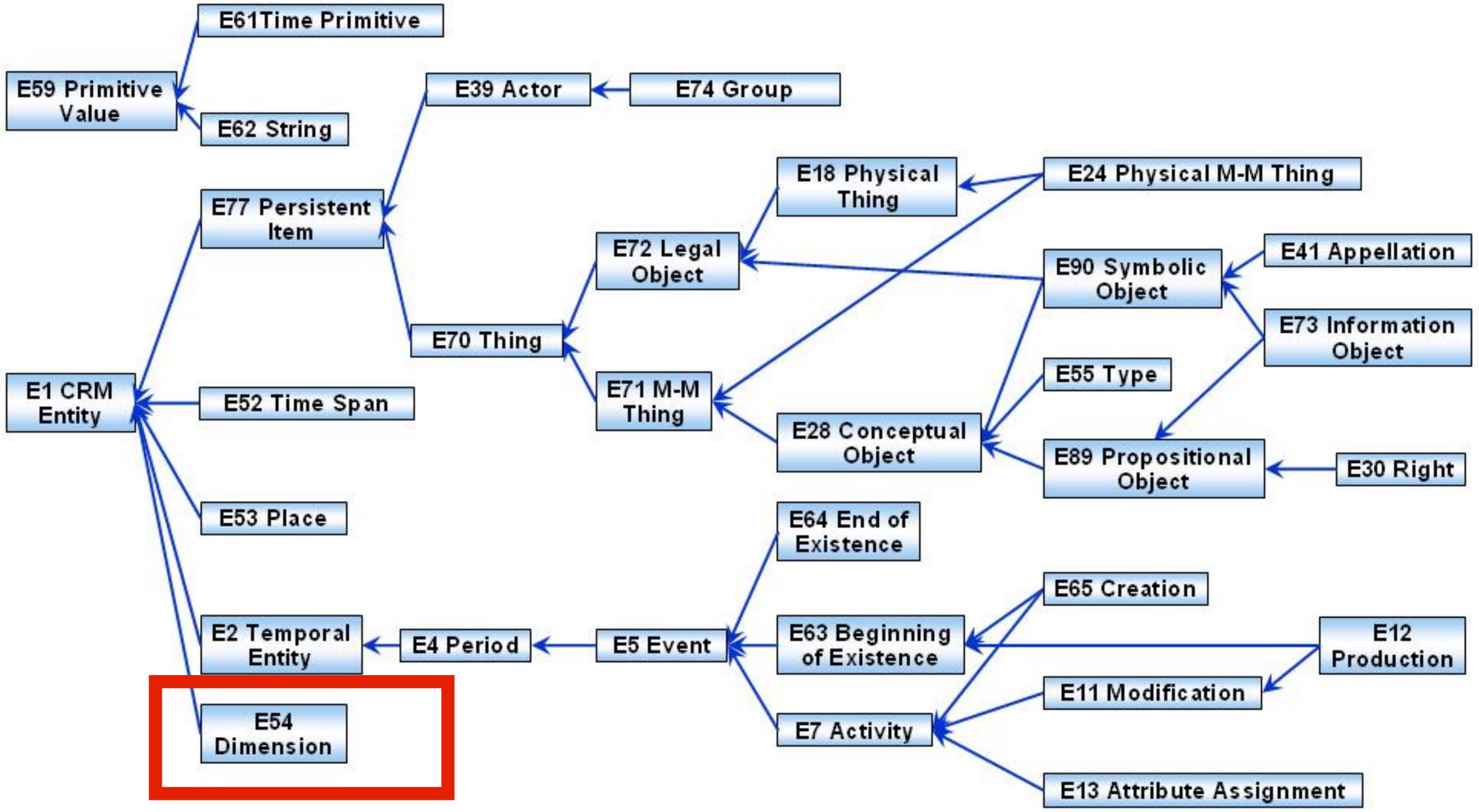


This class is a specialization of E55 Type and comprises the concepts of materials. Instances of E57 Material may denote properties of matter before its use, during its use, and as incorporated in an object, such as ultramarine powder, tempera paste, reinforced concrete. Discrete pieces of raw-materials kept in museums, such as bricks, sheets of fabric, pieces of metal, should be modelled individually in the same way as other objects. Discrete used or processed pieces, such as the stones from Nefer Titi's temple, should be modelled as parts (cf. P46 is composed of (forms part of): E18 Physical Thing).

E22 Human-Made Object

~~*Title*~~
~~*Description*~~
Measurement

~~*Material*~~
~~*Identifier*~~


E61Time Primitive
E59 Primitive Value
E62 String
E39 Actor
E74 Group
E77 Persistent Item
E18 Physical Thing
E24 Physical M-M Thing
E72 Legal Object
E90 Symbolic Object
E41 Appellation
E70 Thing
E73 Information Object
E1 CRM Entity
E52 Time Span
E71 M-M Thing
E55 Type
E28 Conceptual Object
E89 Propositional Object
E30 Right
E53 Place
E64 End of Existence
E65 Creation
E2 Temporal Entity
E4 Period
E5 Event
E63 Beginning of Existence
E12 Production
E11 Modification
E54 Dimension
E7 Activity
E13 Attribute Assignment

E22 Human-Made Object

~~*Title*~~
~~*Description*~~
~~*Measurement*~~

~~*Material*~~
~~*Identifier*~~

E21 Person:

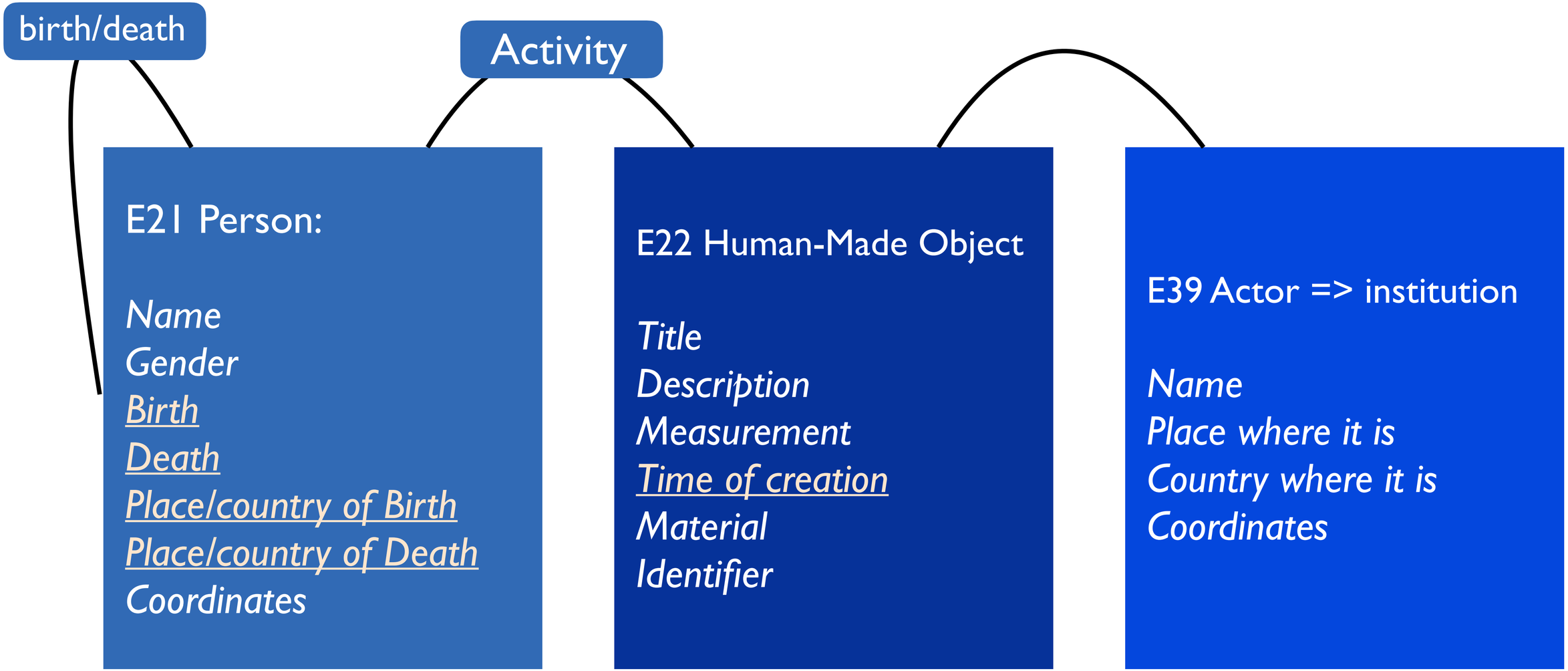
Name
Gender
Birth
Death
Place/country of Birth
Place/country of Death
Coordinates

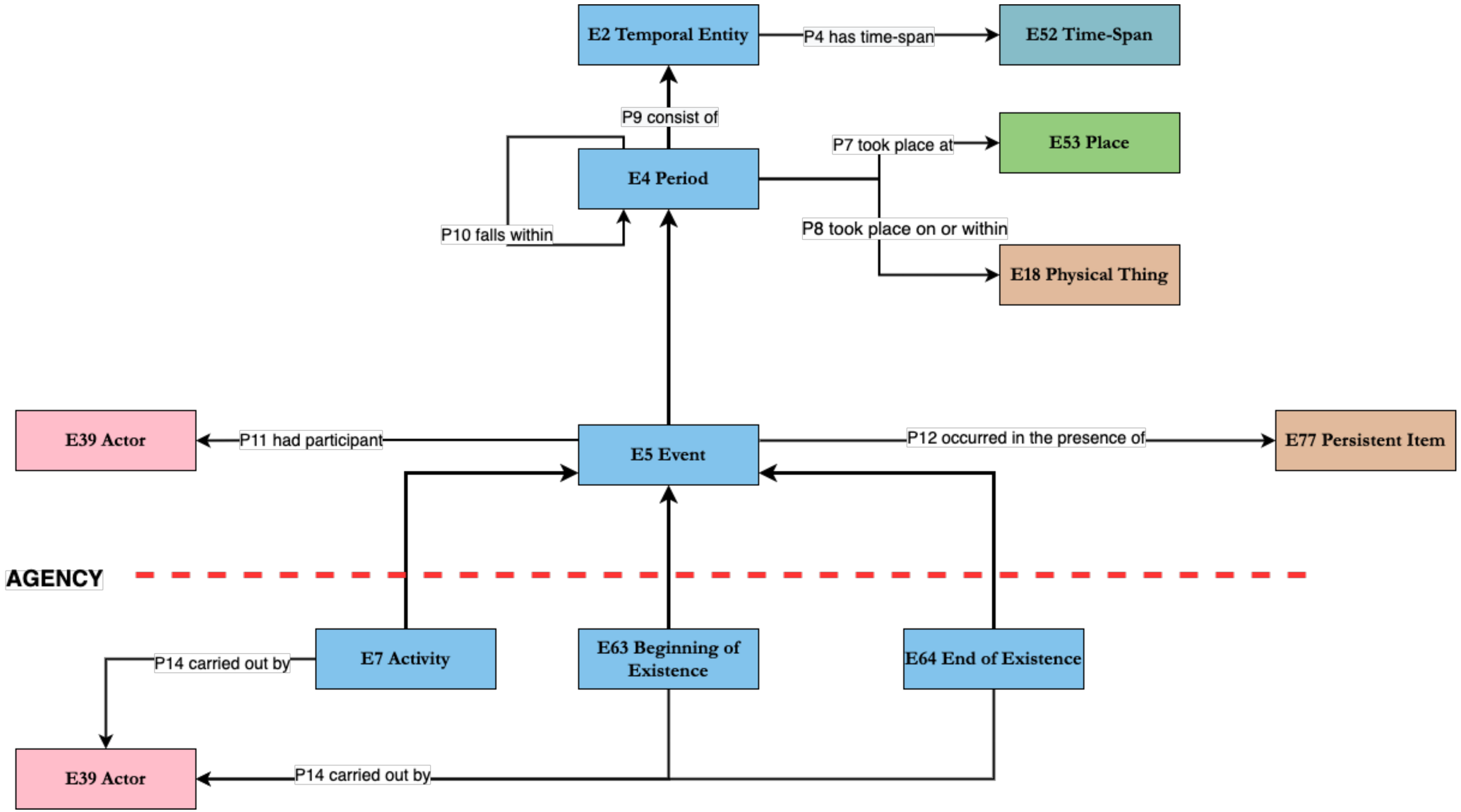
E22 Human-Made Object

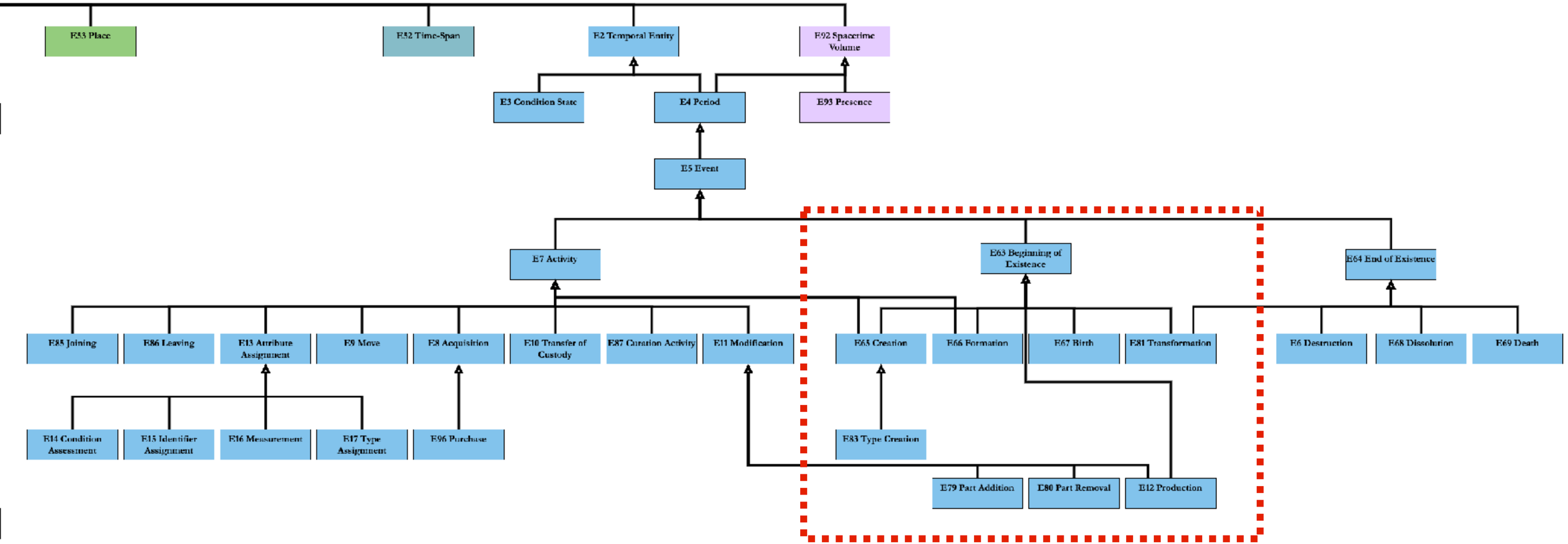
Title
Description
Measurement
Time of creation
Material
Identifier

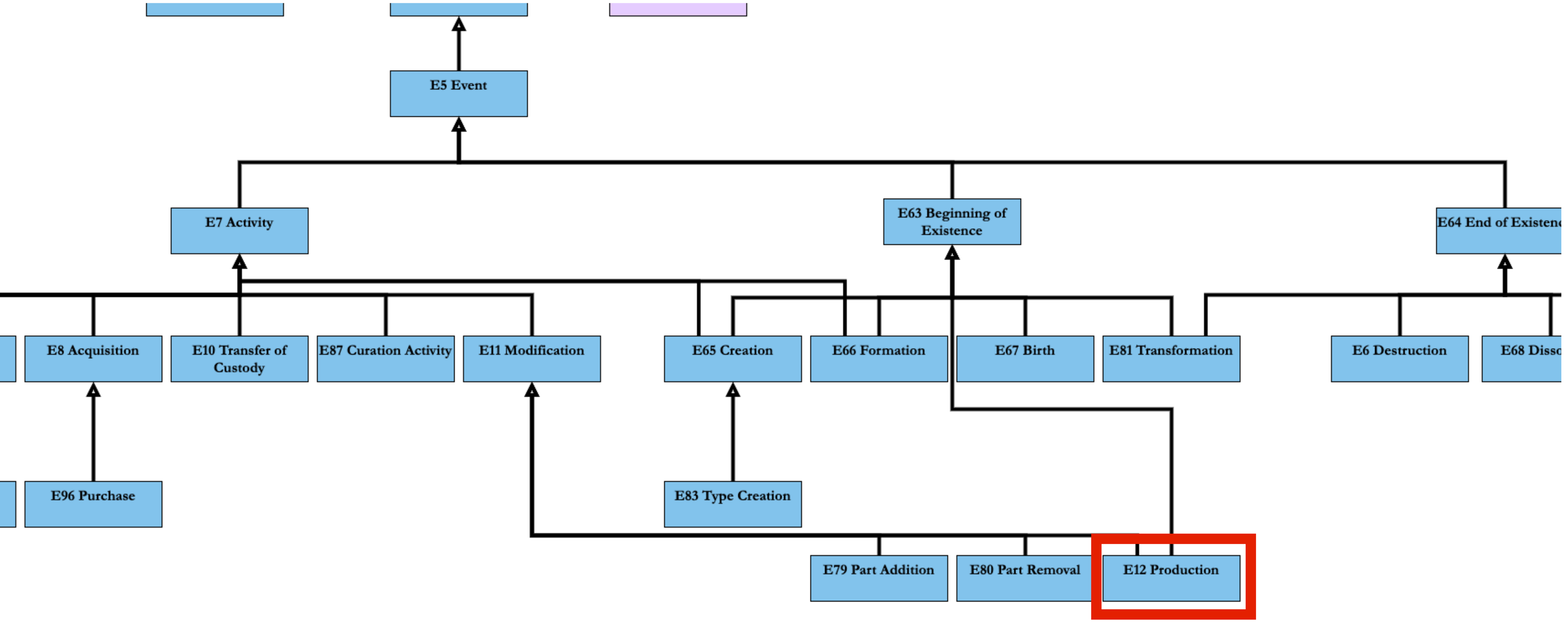
E39 Actor => institution

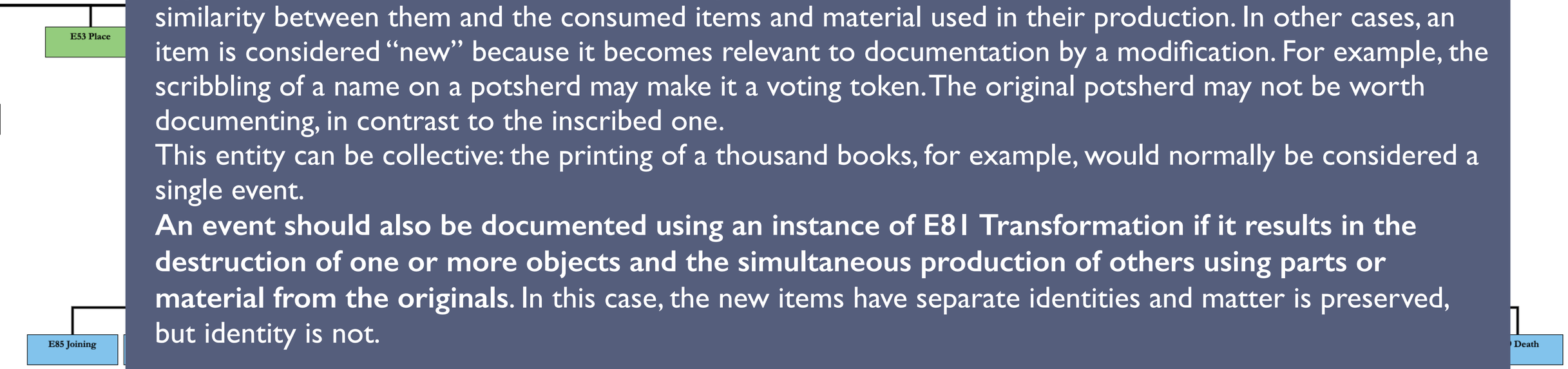
Name
Place where it is
Country where it is
Coordinates


birth/death
Activity
E21 Person:
Name
Gender
Birth
Death
Place/country of Birth
Place/country of Death
Coordinates
E22 Human-Made Object
Title
Description
Measurement
Time of creation
Material
Identifier
E39 Actor => institution
Name
Place where it is
Country where it is
Coordinates


E2 Temporal Entity
P4 has time-span
E52 Time-Span
P9 consist of
P7 took place at
E53 Place
E4 Period
P10 falls within
P8 took place on or within
E18 Physical Thing
E39 Actor
P11 had participant
E5 Event
P12 occurred in the presence of
E77 Persistent Item
AGENCY
P14 carried out by
E7 Activity
E63 Beginning of Existence
E64 End of Existence
E39 Actor
P14 carried out by

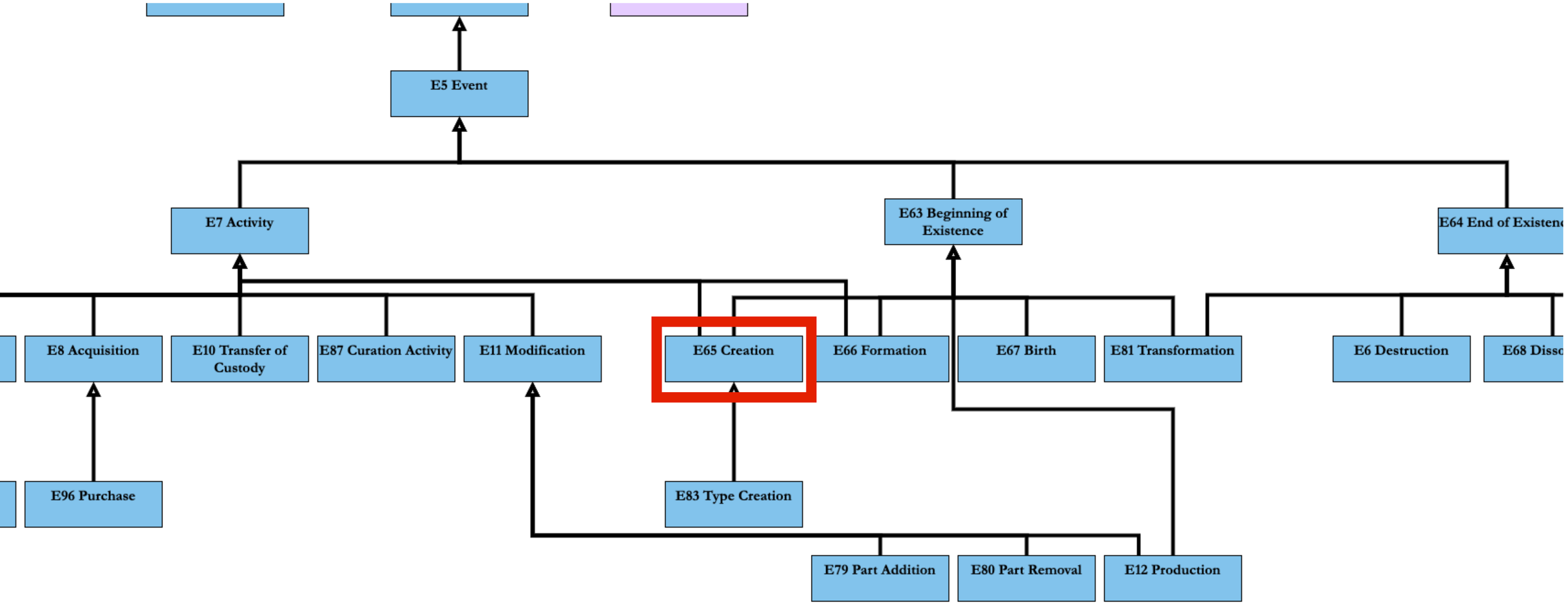

E53 Place
E52 Time-Span
E2 Temporal Entity
E92 Spacetime Volume
E3 Condition State
E4 Period
E93 Presence
E5 Event
E7 Activity
E63 Beginning of Existence
E64 End of Existence
E85 Joining
E86 Leaving
E13 Attribute Assignment
E9 Move
E8 Acquisition
E10 Transfer of Custody
E87 Curation Activity
E11 Modification
E65 Creation
E66 Formation
E67 Birth
E81 Transformation
E6 Destruction
E68 Dissolution
E69 Death
E14 Condition Assessment
E15 Identifier Assignment
E16 Measurement
E17 Type Assignment
E96 Purchase
E83 Type Creation
E79 Part Addition
E80 Part Removal
E12 Production

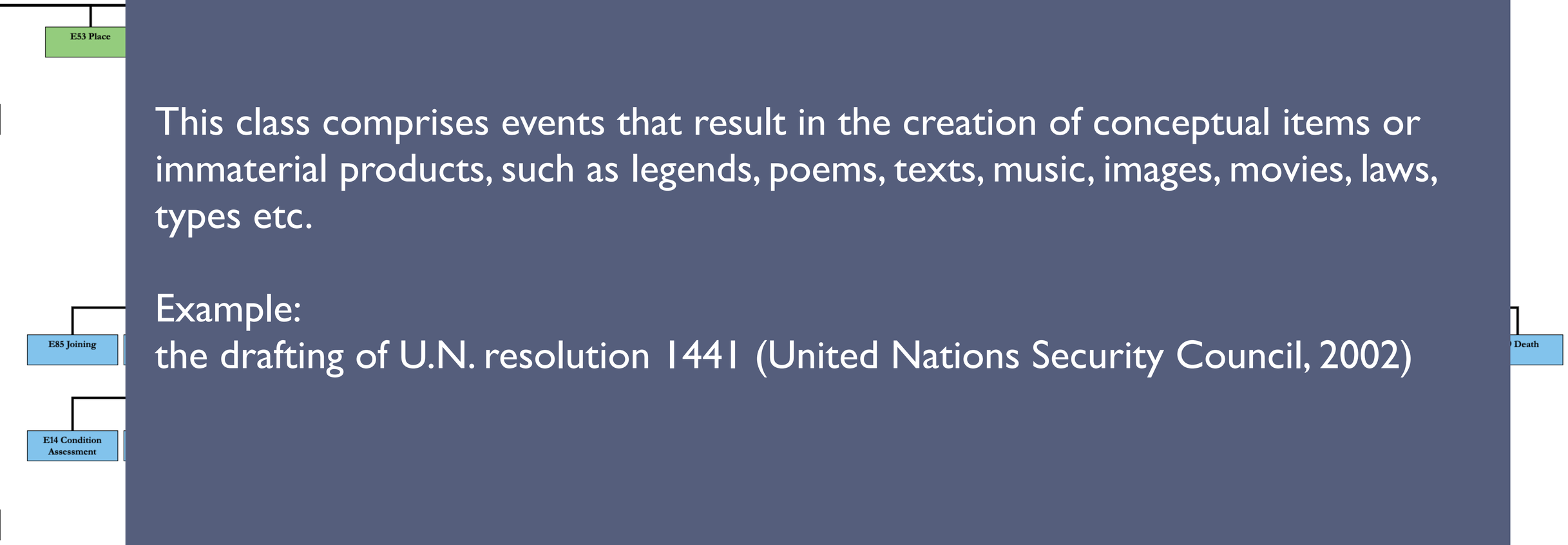

E5 Event
E7 Activity
E63 Beginning of Existence
E64 End of Existen
E8 Acquisition
E10 Transfer of Custody
E87 Curation Activity
E11 Modification
E65 Creation
E66 Formation
E67 Birth
E81 Transformation
E6 Destruction
E68 Disso
E96 Purchase
E83 Type Creation
E79 Part Addition
E80 Part Removal
E12 Production



This class comprises **activities that are designed to, and succeed in, creating one or more new items.** It specializes the notion of modification into production. The decision as to whether or not an object is regarded as new is context sensitive. Normally, items are considered "new" if there is no obvious overall similarity between them and the consumed items and material used in their production. In other cases, an item is considered "new" because it becomes relevant to documentation by a modification. For example, the scribbling of a name on a potsherd may make it a voting token. The original potsherd may not be worth documenting, in contrast to the inscribed one.
This entity can be collective: the printing of a thousand books, for example, would normally be considered a single event.
An event should also be documented using an instance of E81 Transformation if it results in the destruction of one or more objects and the simultaneous production of others using parts or material from the originals. In this case, the new items have separate identities and matter is preserved, but identity is not.

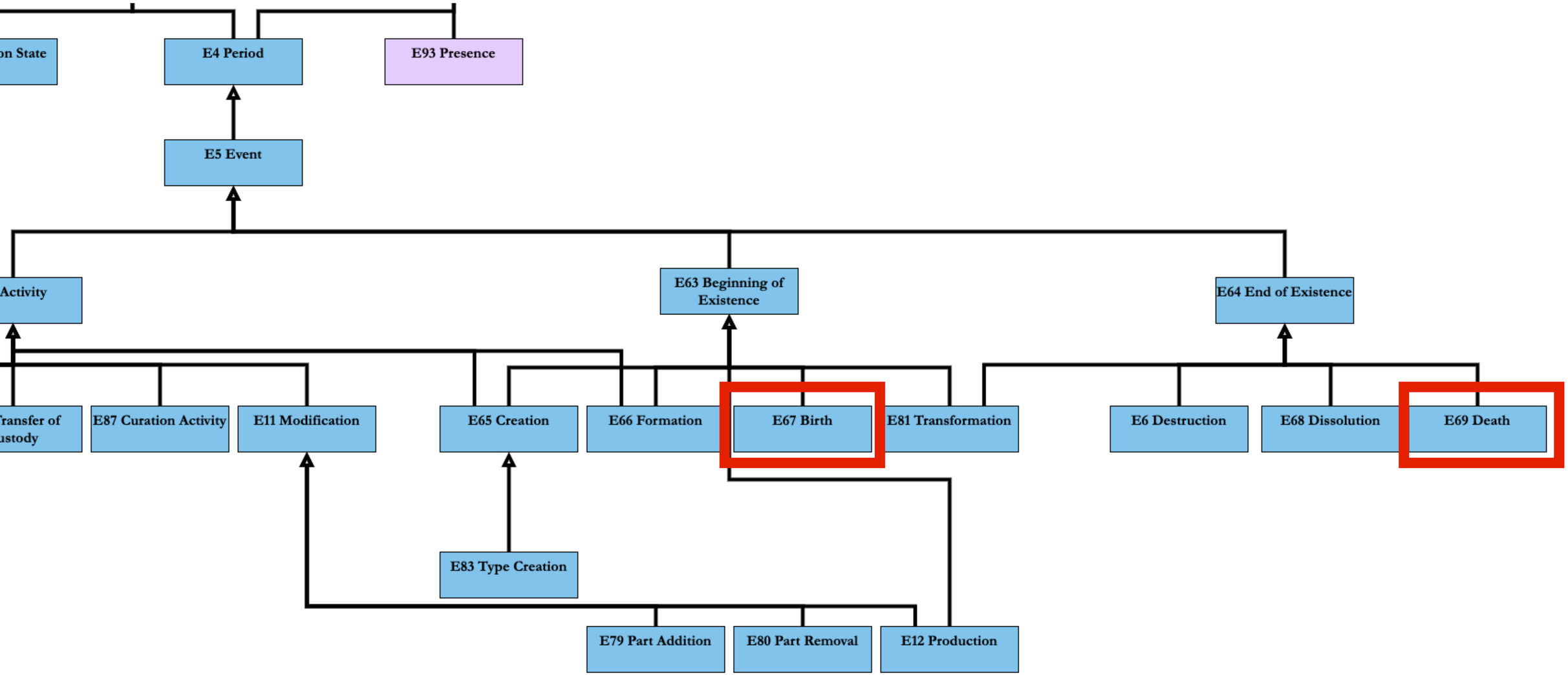
Examples:
the construction of the SS Great Britain (Gregor, 1971)
the first casting of the Little Mermaid from the harbour of Copenhagen (Dewey, 2003)
Rembrandt's creating of the seventh state of his etching "Woman sitting half dressed beside a stove", 1658, identified by Bartsch Number 197 (E12, E65, E81) (Hind, 1923)

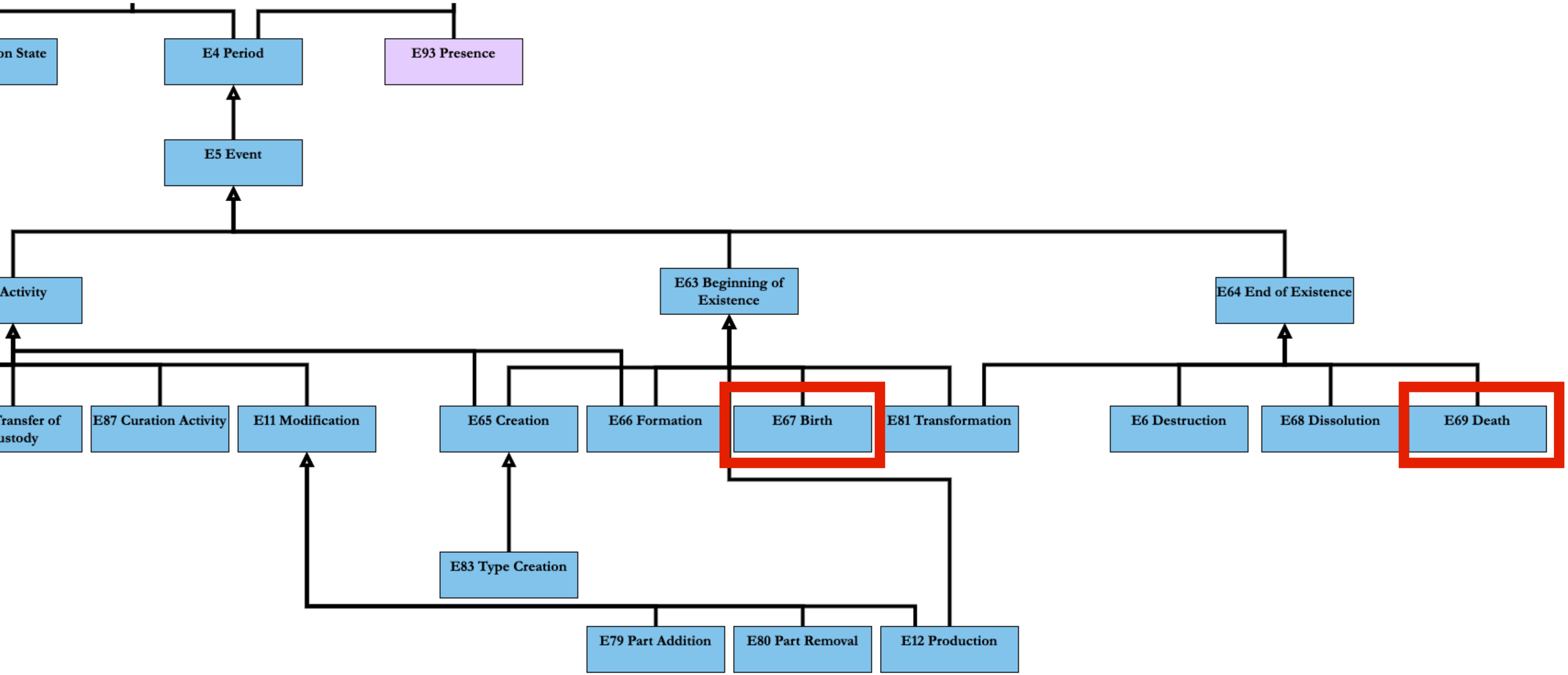

E5 Event
E7 Activity
E63 Beginning of Existence
E64 End of Existen
E8 Acquisition
E10 Transfer of Custody
E87 Curation Activity
E11 Modification
E65 Creation
E66 Formation
E67 Birth
E81 Transformation
E6 Destruction
E68 Disso
E96 Purchase
E83 Type Creation
E79 Part Addition
E80 Part Removal
E12 Production



This class comprises events that result in the creation of conceptual items or immaterial products, such as legends, poems, texts, music, images, movies, laws, types etc.

Example:
the drafting of U.N. resolution 1441 (United Nations Security Council, 2002)


on State
E4 Period
E93 Presence
E5 Event
Activity
E63 Beginning of Existence
E64 End of Existence
ransfer of ustody
E87 Curation Activity
E11 Modification
E65 Creation
E66 Formation
E67 Birth
E81 Transformation
E6 Destruction
E68 Dissolution
E69 Death
E83 Type Creation
E79 Part Addition
E80 Part Removal
E12 Production


on State
E4 Period
E93 Presence
E5 Event
Activity
E63 Beginning of Existence
E64 End of Existence
ransfer of ustody
E87 Curation Activity
E11 Modification
E65 Creation
E66 Formation
E67 Birth
E81 Transformation
E6 Destruction
E68 Dissolution
E69 Death
E83 Type Creation
E79 Part Addition
E80 Part Removal
E12 Production

A thing and its appellation are very different entity!
we refer to thing, not appellation
we depict things, not appellation
appellation change in time and space!

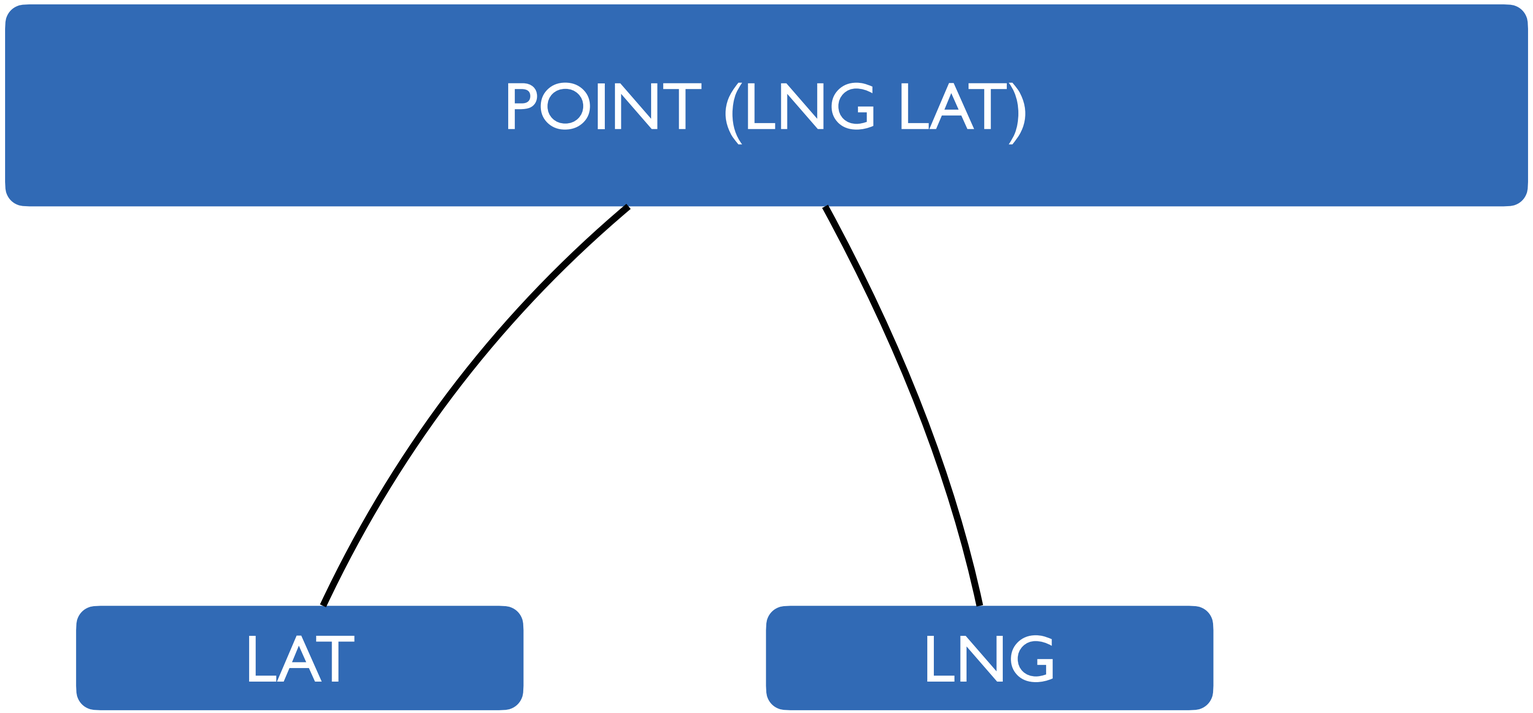
E53 Place
P168_place_is_defined_by
"WKTLiteral"

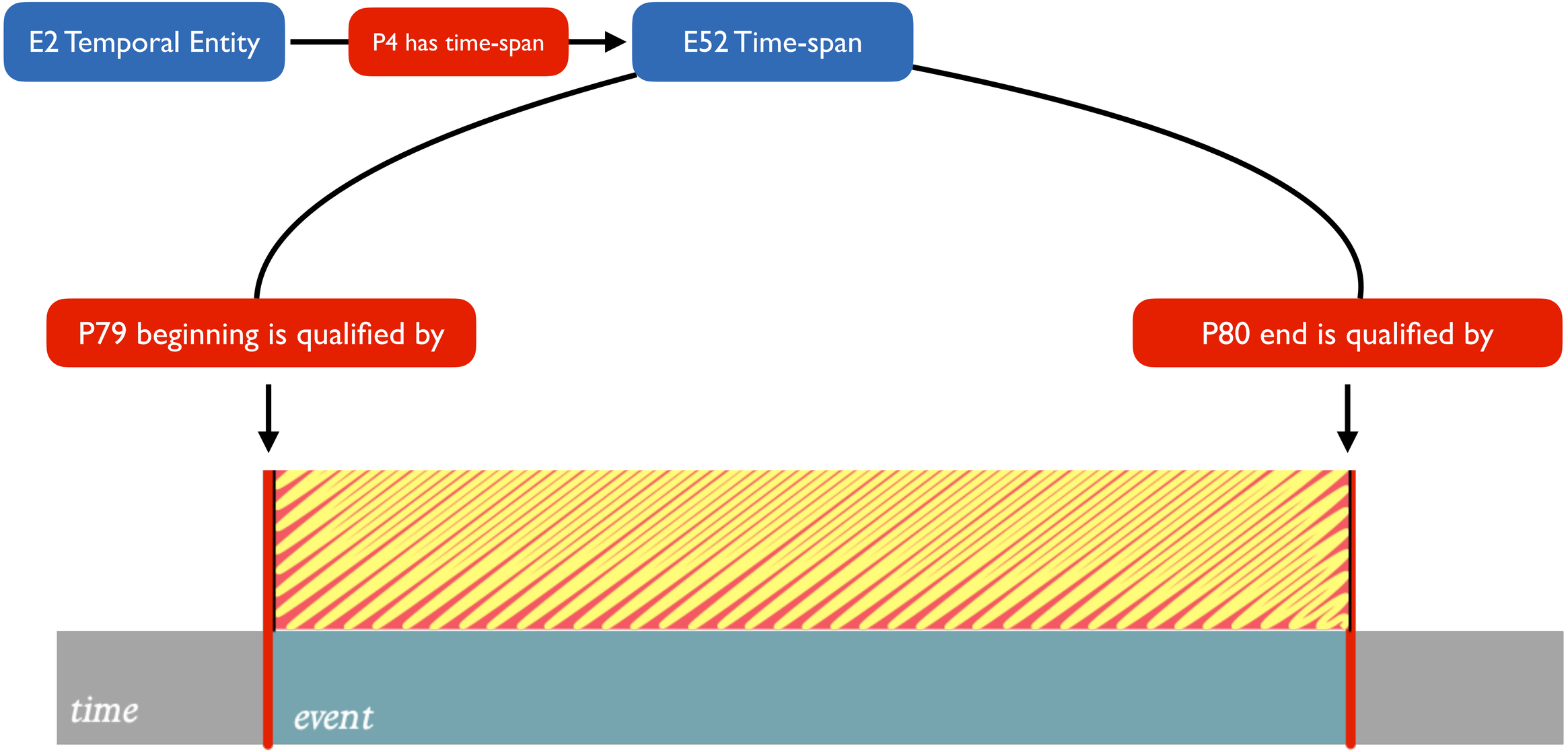
POINT(6.149738314507167 46.203202326134 81)

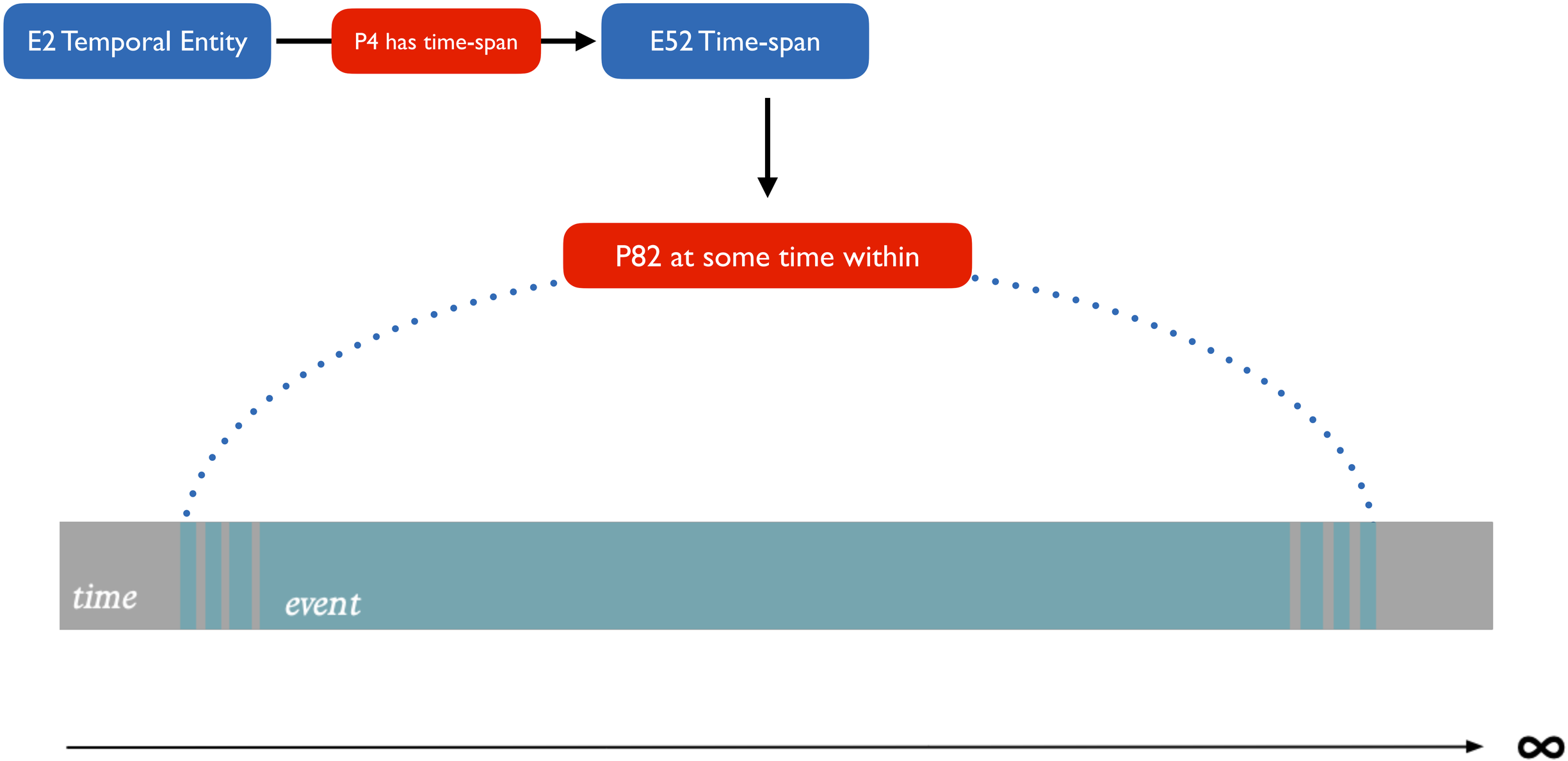
POLYGON((6.144870759602095 46.19839770088336,6.145693778289872 46.19895700389941,6.144511624174702 46.19976487598288,6.143621267594289 46.19921075987182,6.144870759602095 46.19839770088336))

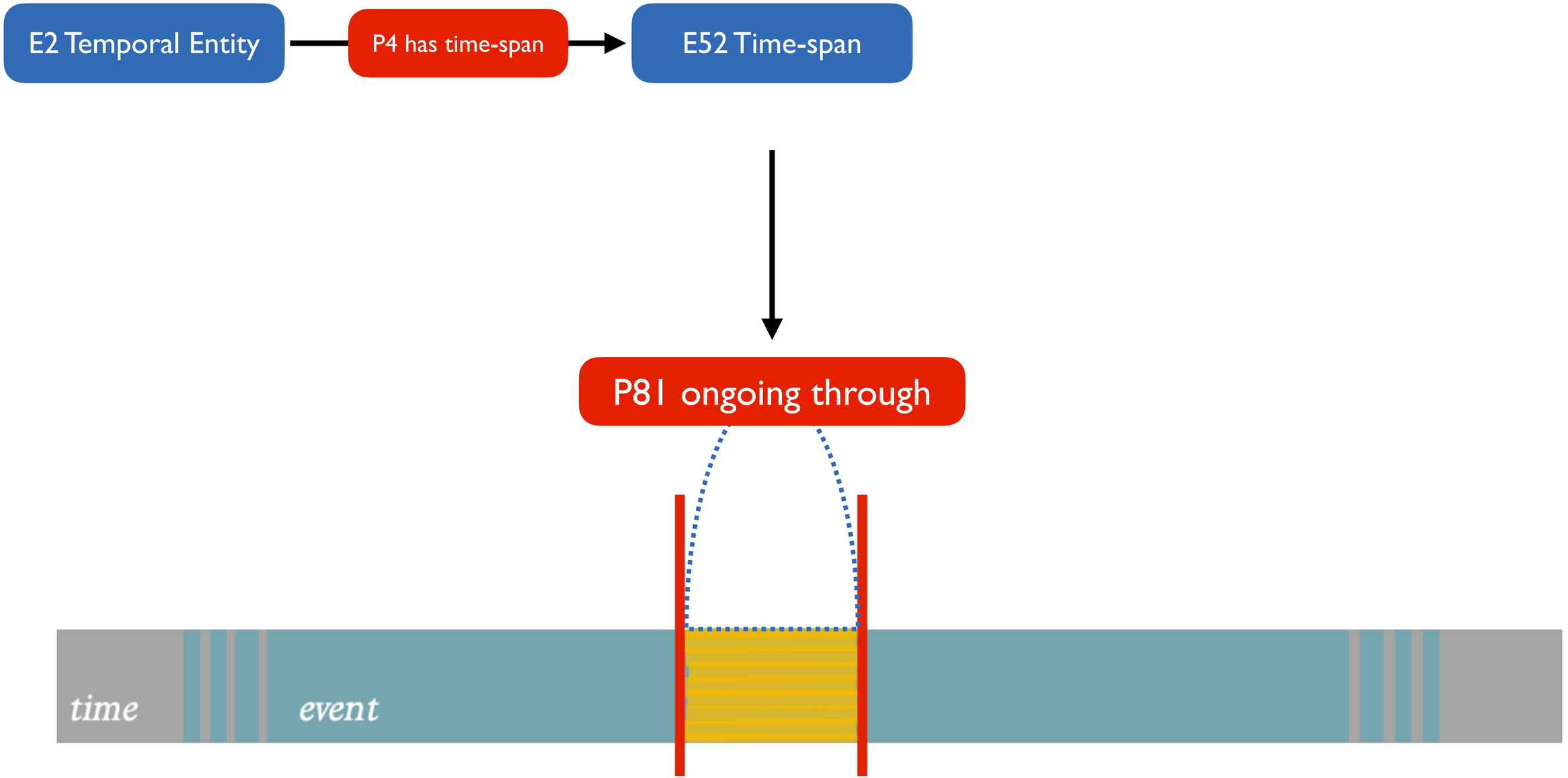
POLYGON((6.144531651183 36 46.19978713834298,6.1446764904701645 46.19969060130582,6.144134684249156 46.19931187744524,6.144193692847484 46.19925895535 17,6.144274159117931 46.19930816445329,6.144317074462169 46.19931930342839,6.144810600920909 46.19904825439352,6.144681854888194 46.19897770716514,6.144923253699535 46.19885517755322,6.144853516265147 46.19879205613138,6.144923253699535 46.19874378675983 5,6.145465059920543 46.19913736655251,6.14570645873 1883 46.19896568120 81,6.145502610846751 46.19879948218475,6.145620628043407 46.19871779554221,6.145448966666454 46.19861383054879,6.145261212035411 46.19874378675983 5,6.145030542060 13 46.19857670014633,6.144794507666 82 46.19874749978992 4,6.144585295363658 46.19860640447 0304,6.144456549330943 46.19869551734 5904,6.144606753035777 46.19880319521107,6.144215150519603 46.19904454138375,6.144075675650829 46.19894429002 5366,6.143920107527965 46.19905196740 3015,6.144086404486888 46.19918934857 8514,6.143887921019786 46.19933415539166,6.144531651183 36 46.19978713834298))

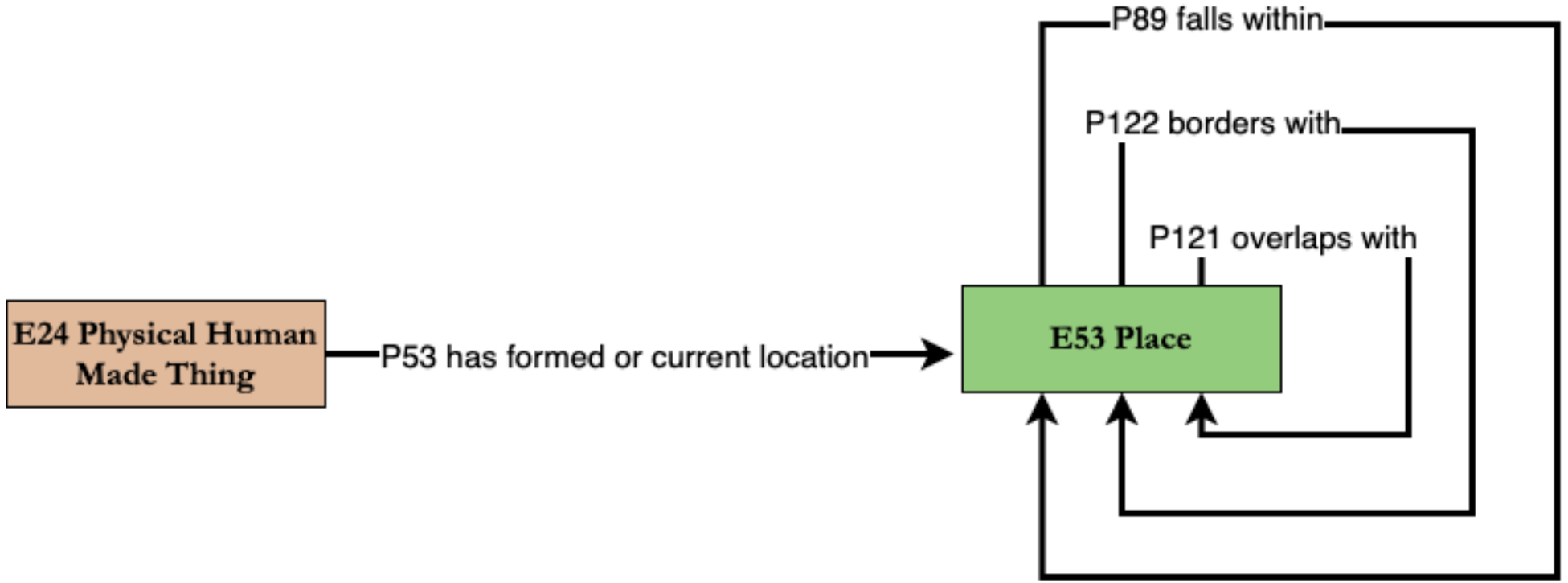
POINT(6.149738314507167 46.20320232613481)

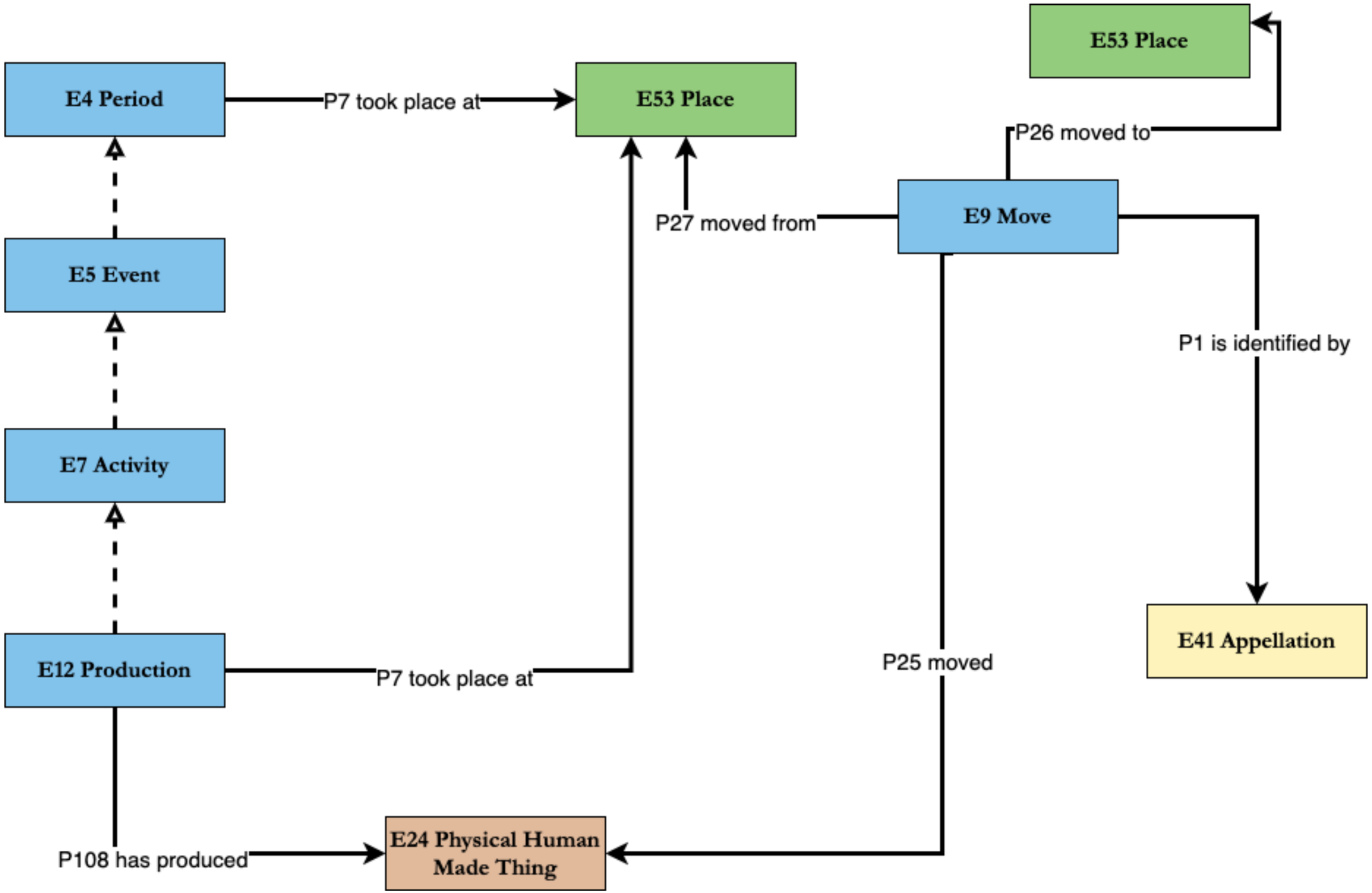



E2 Temporal Entity
P4 has time-span
E52 Time-span
P79 beginning is qualified by
P80 end is qualified by
time
event

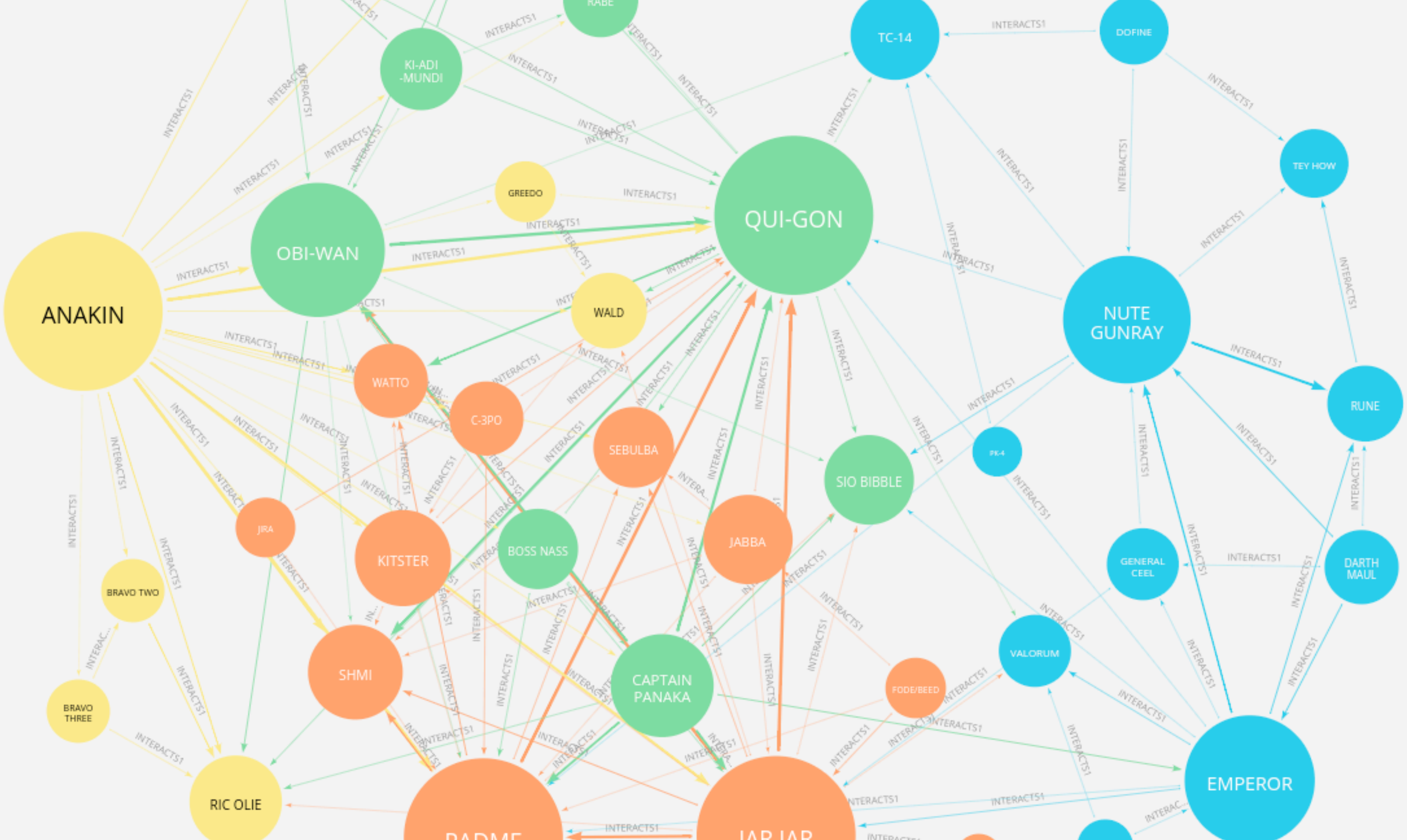

E2 Temporal Entity
P4 has time-span
E52 Time-span
P82 at some time within
time
event
∞

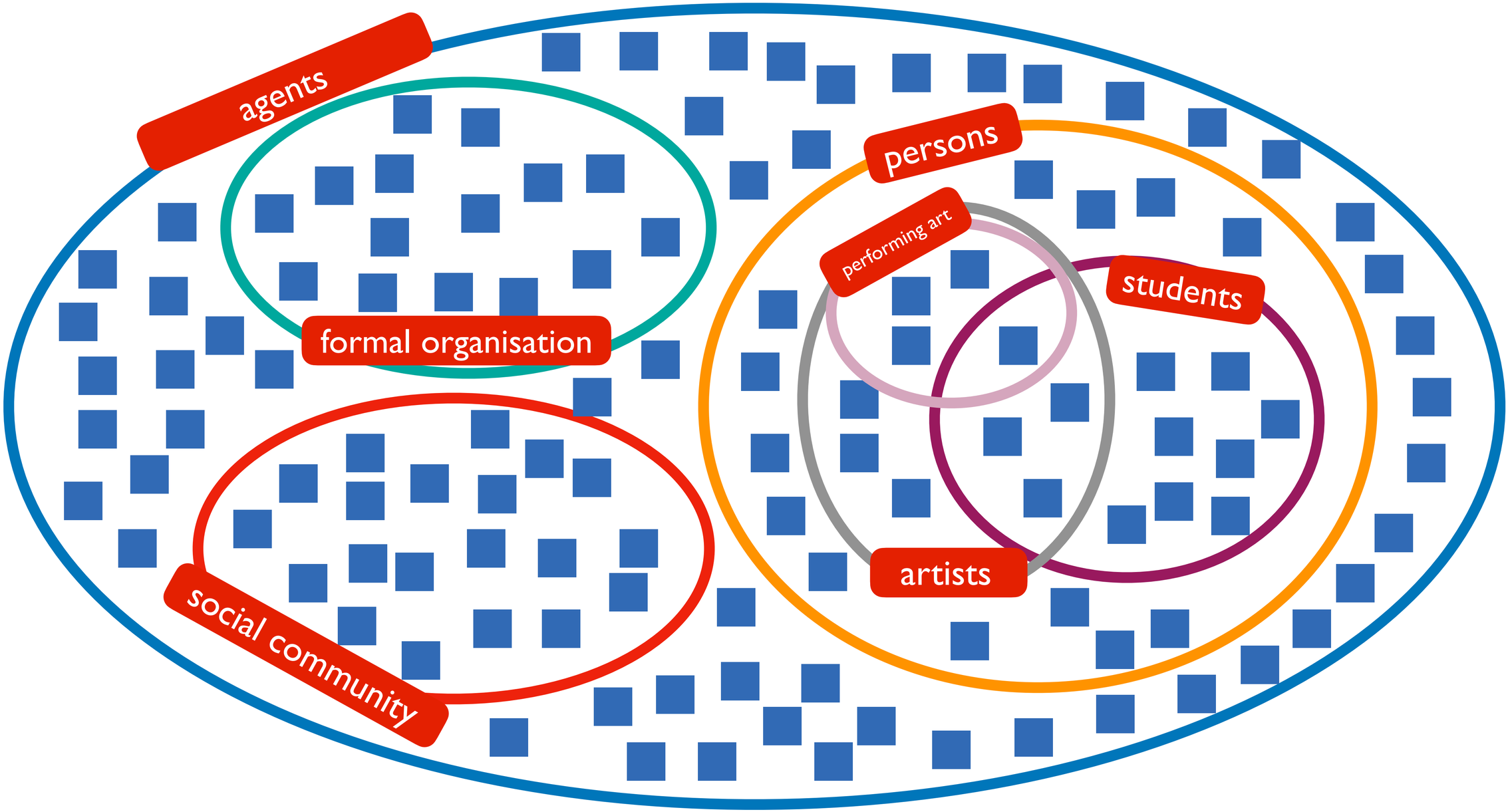

E2 Temporal Entity
P4 has time-span
E52 Time-span
P81 ongoing through
time
event

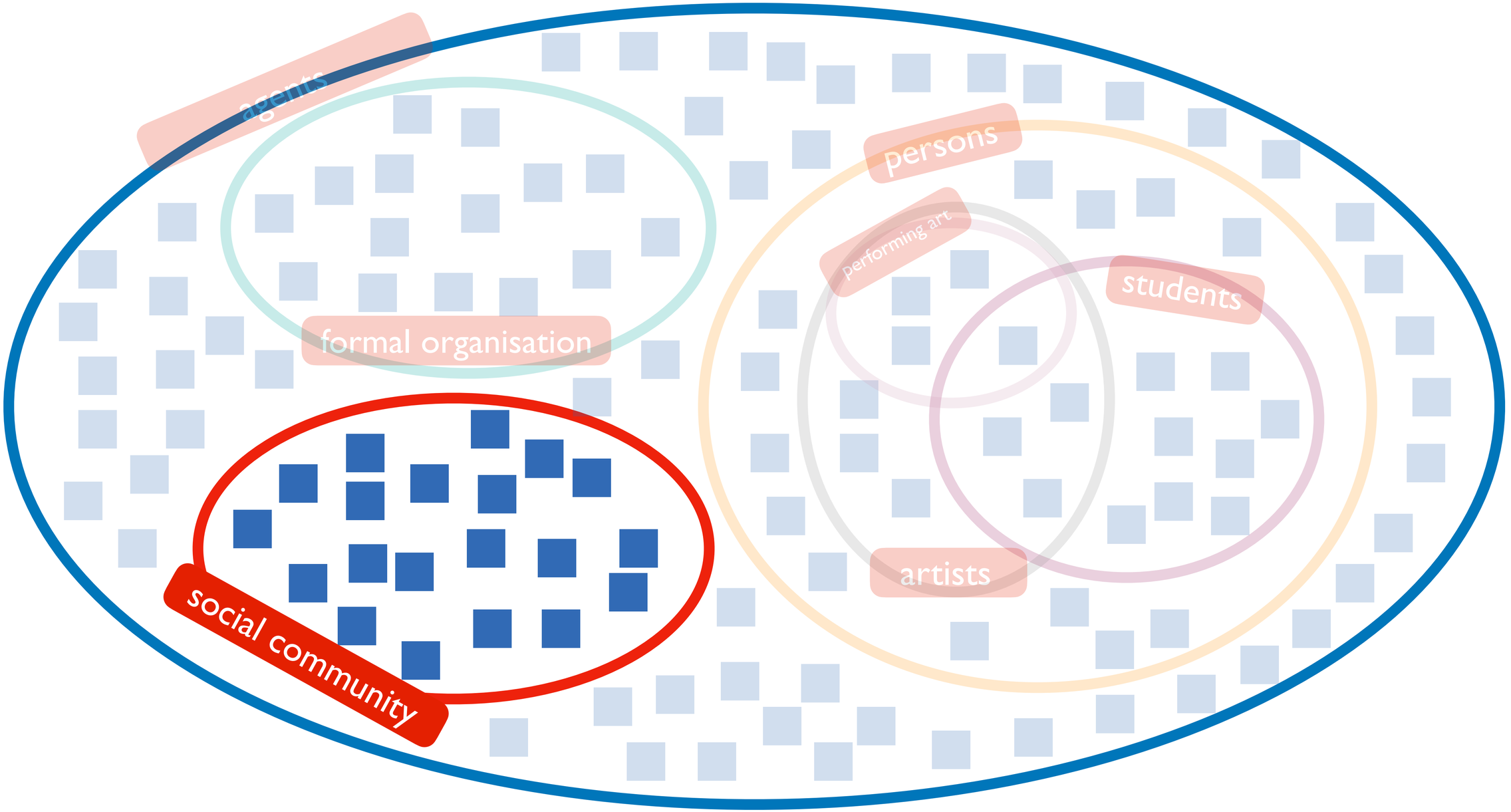

P89 falls within
P122 borders with
P121 overlaps with
E24 Physical Human Made Thing
P53 has formed or current location
E53 Place

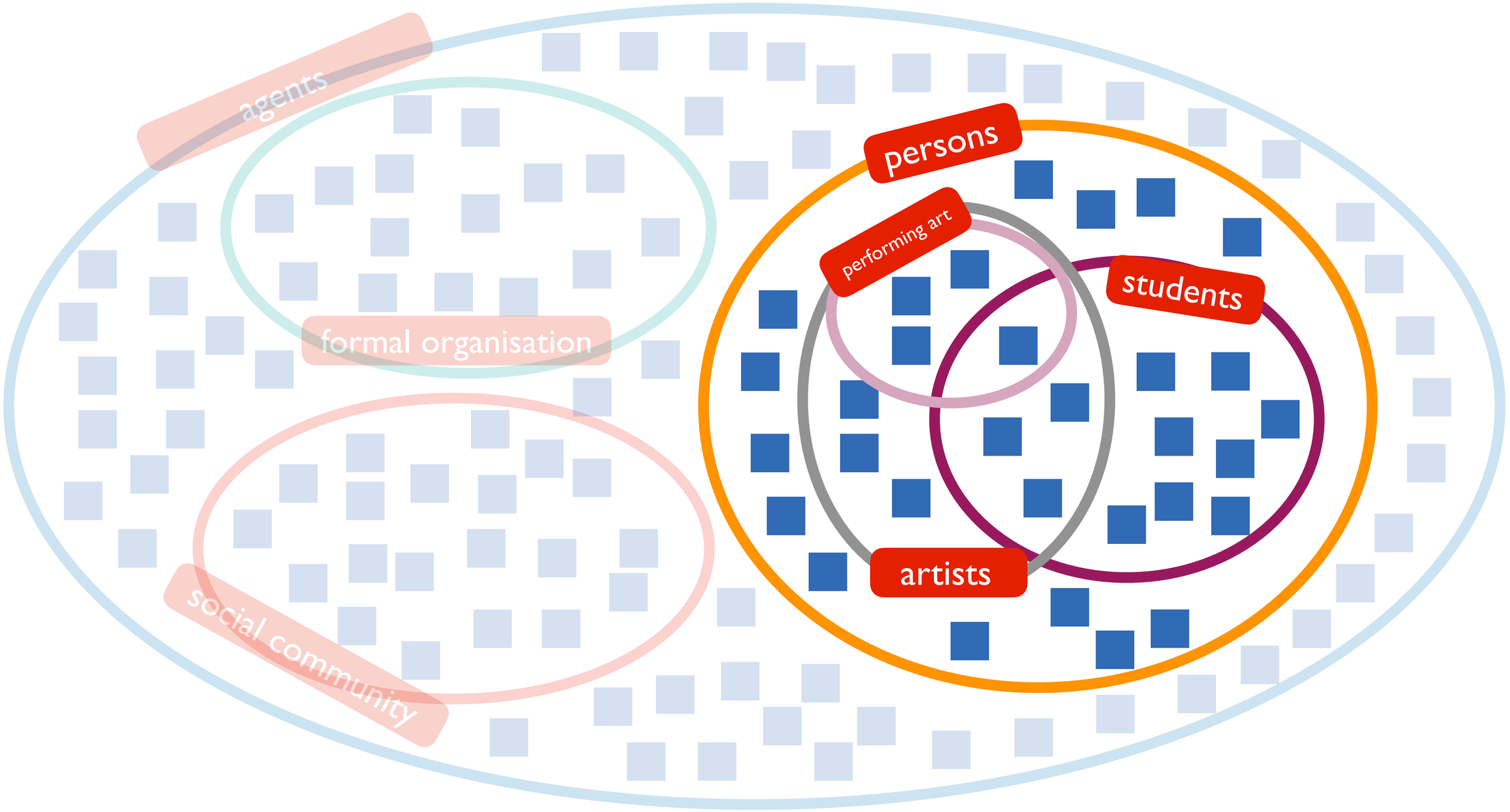

E4 Period
P7 took place at
E53 Place
E53 Place
P26 moved to
P27 moved from
E9 Move
E5 Event
P1 is identified by
E7 Activity
E41 Appellation
E12 Production
P7 took place at
P25 moved
P108 has produced
E24 Physical Human Made Thing

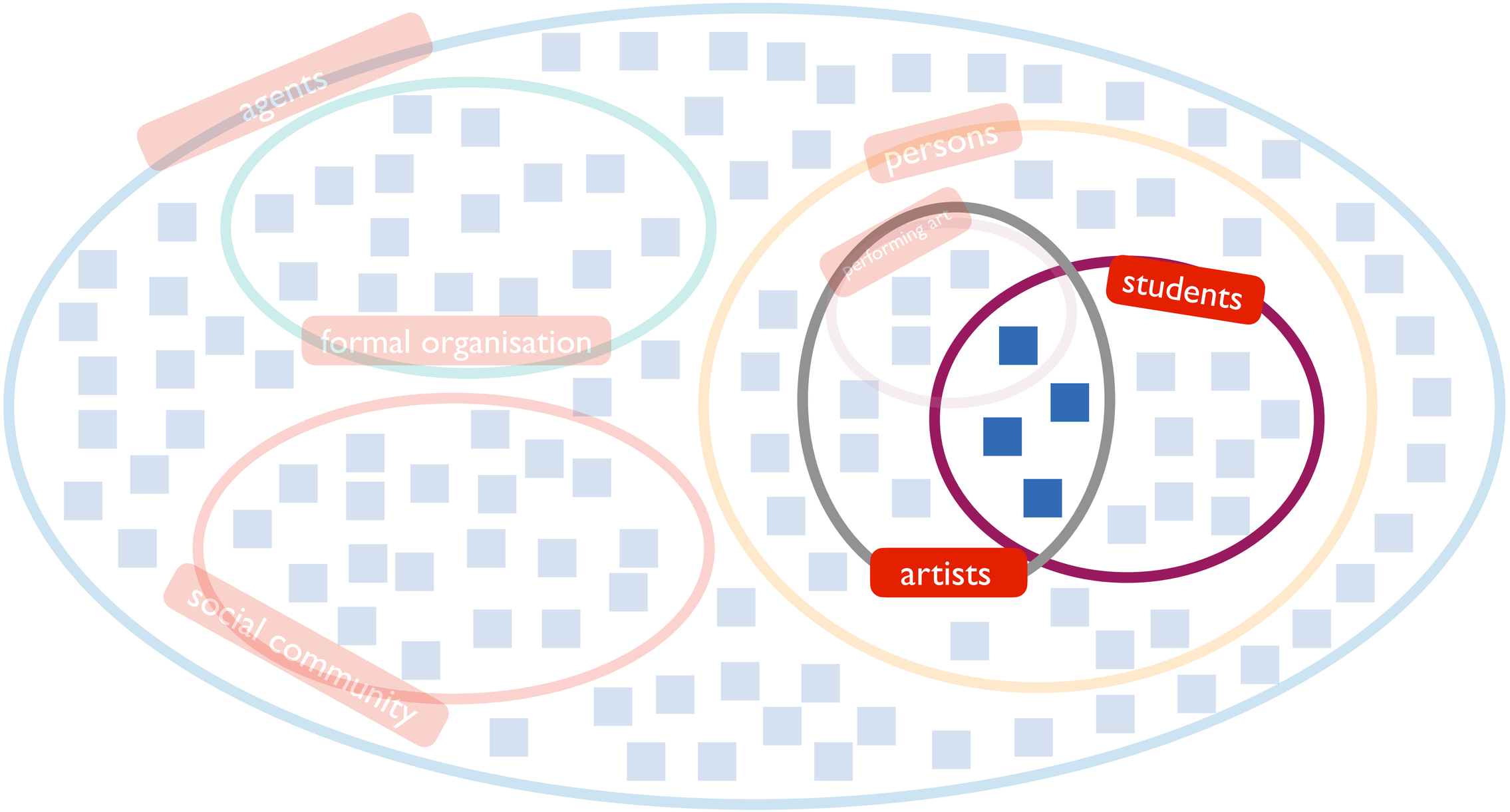
SPARQL


ANAKIN
OBI-WAN
QUI-GON
KI-ADI
-MUNDI
GREEDO
WALD
TC-14
DOFINE
TEY HOW
NUTE
GUNRAY
RUNE
WATTO
C-3PO
SEBULBA
SIO BIBBLE
PX-4
JRA
KITSTER
BOSS NASS
JABBA
GENERAL
CEEL
DARTH
MAUL
BRAVO TWO
BRAVO
THREE
SHMI
CAPTAIN
PANAKA
FODE/BEED
VALORUM
RIC OLIE
EMPEROR
INTERACTS1


agents
formal organisation
social community
persons
performing art
students
artists


agents
formal organisation
social community
persons
performing art
students
artists


agents
formal organisation
social community
persons
performing art
students
artists


agents
formal organisation
social community
persons
performing art
students
artists

```
PREFIX schema: <http://schema.org/>
PREFIX gn: <http://www.geonames.org/ontology#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

SELECT DISTINCT ?district ?name
WHERE {

?district gn:featureCode gn:A.ADM2 ;
 a schema:AdministrativeArea ;
 schema:name ?name .

}
```

```
PREFIX schema: <http://schema.org/>
PREFIX gn: <http://www.geonames.org/ontology#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

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WHERE {

?district gn:featureCode gn:A.ADM2 ;
 a schema:AdministrativeArea ;
 schema:name ?name .

}
```
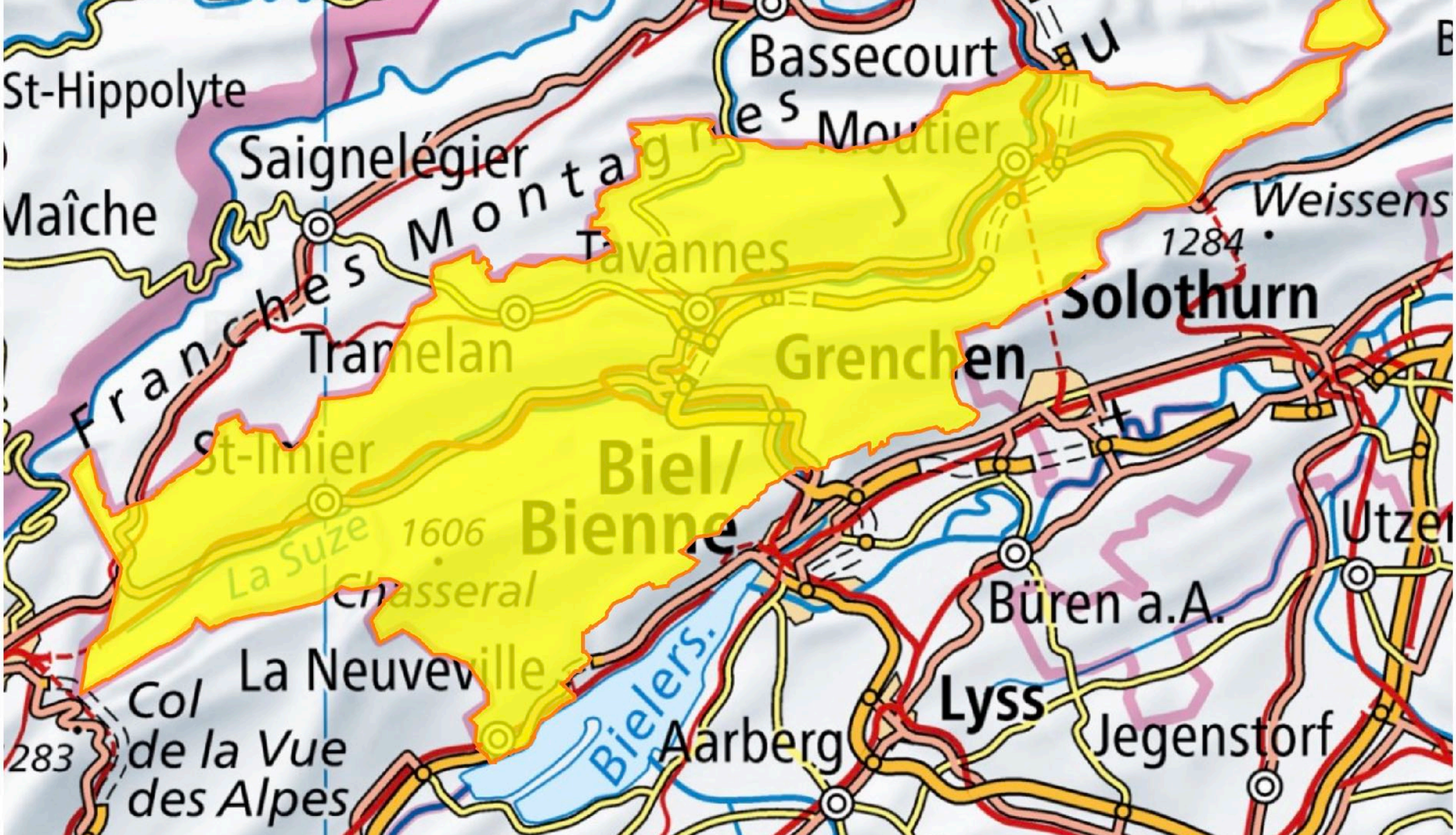
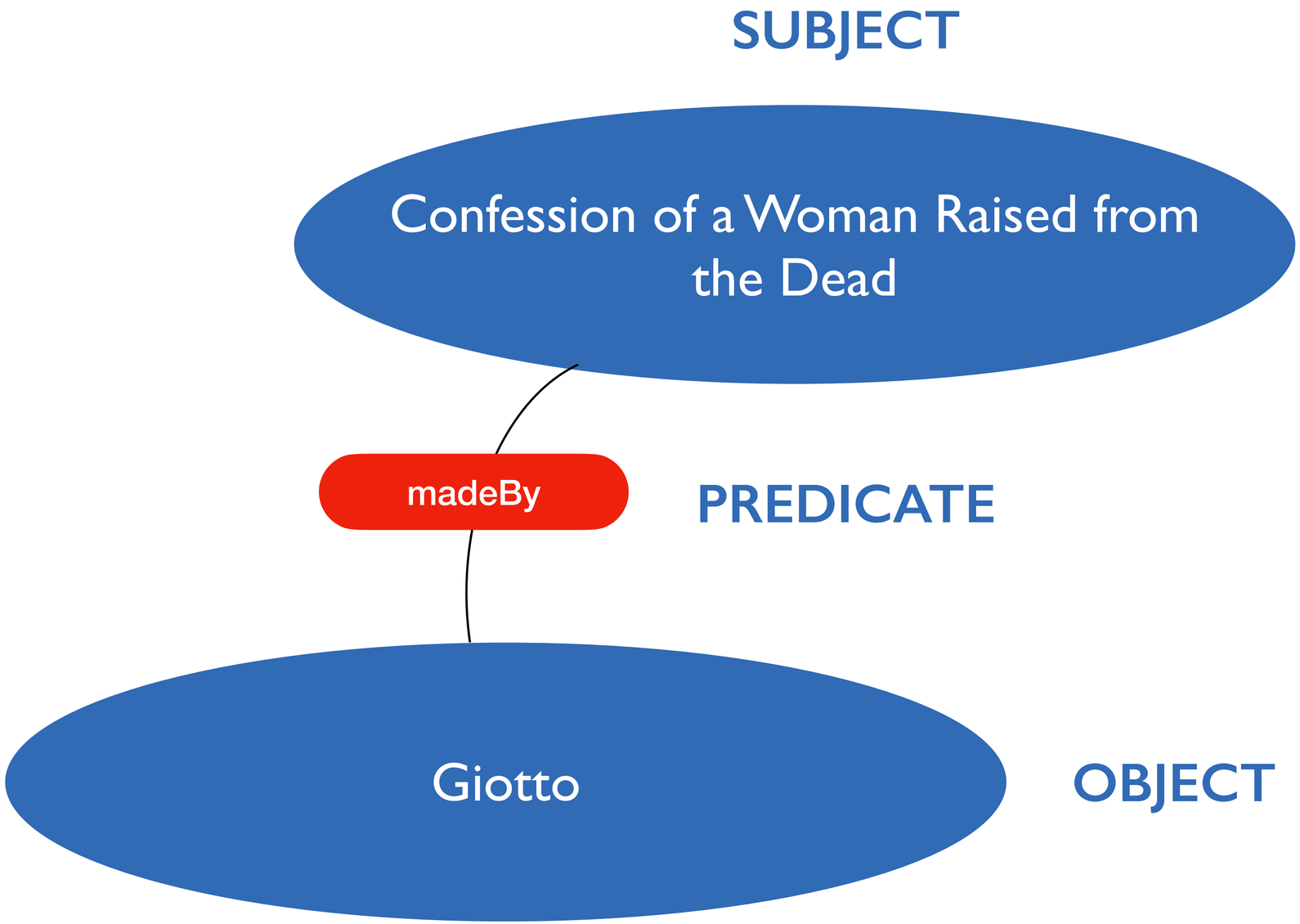
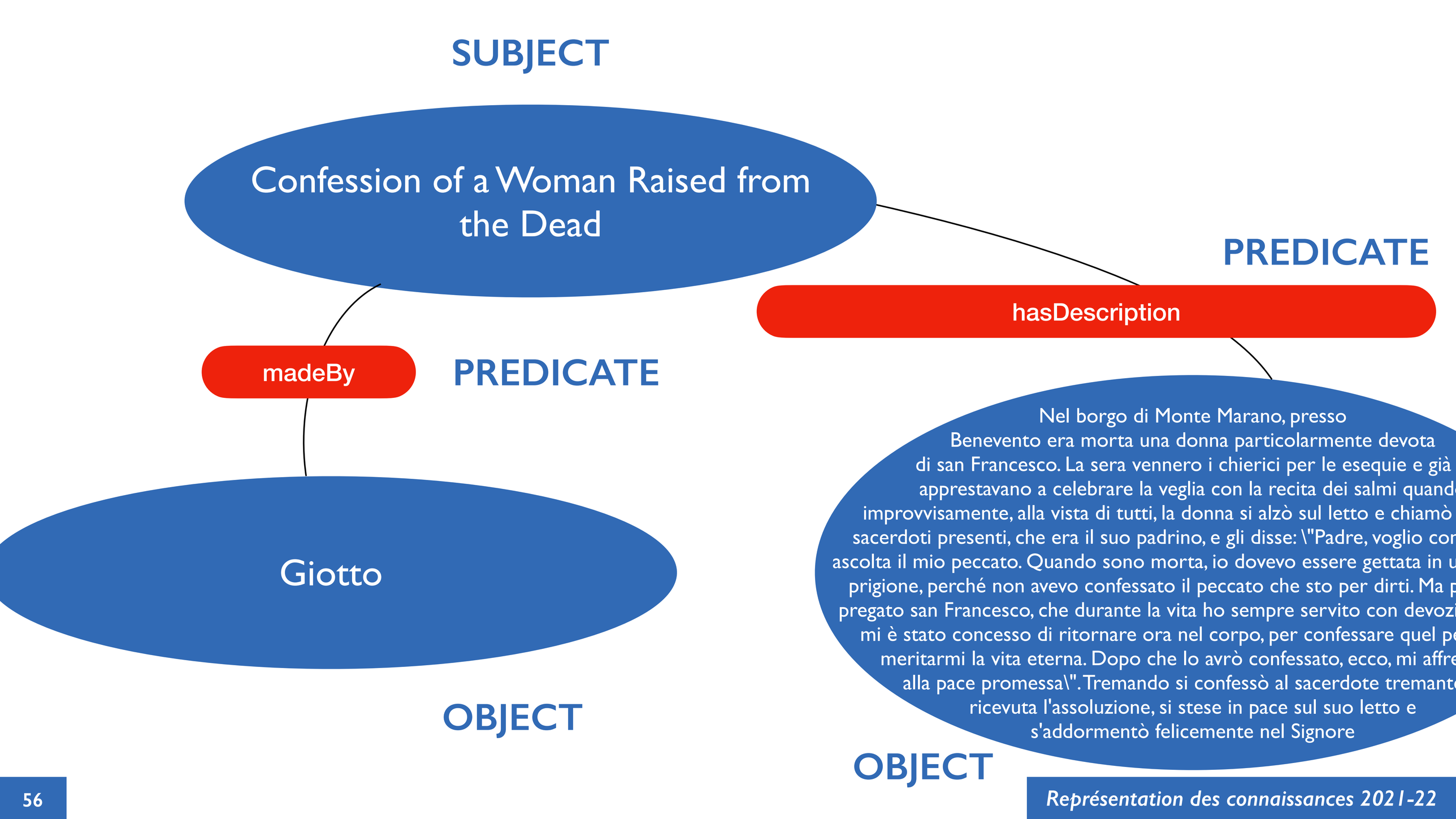
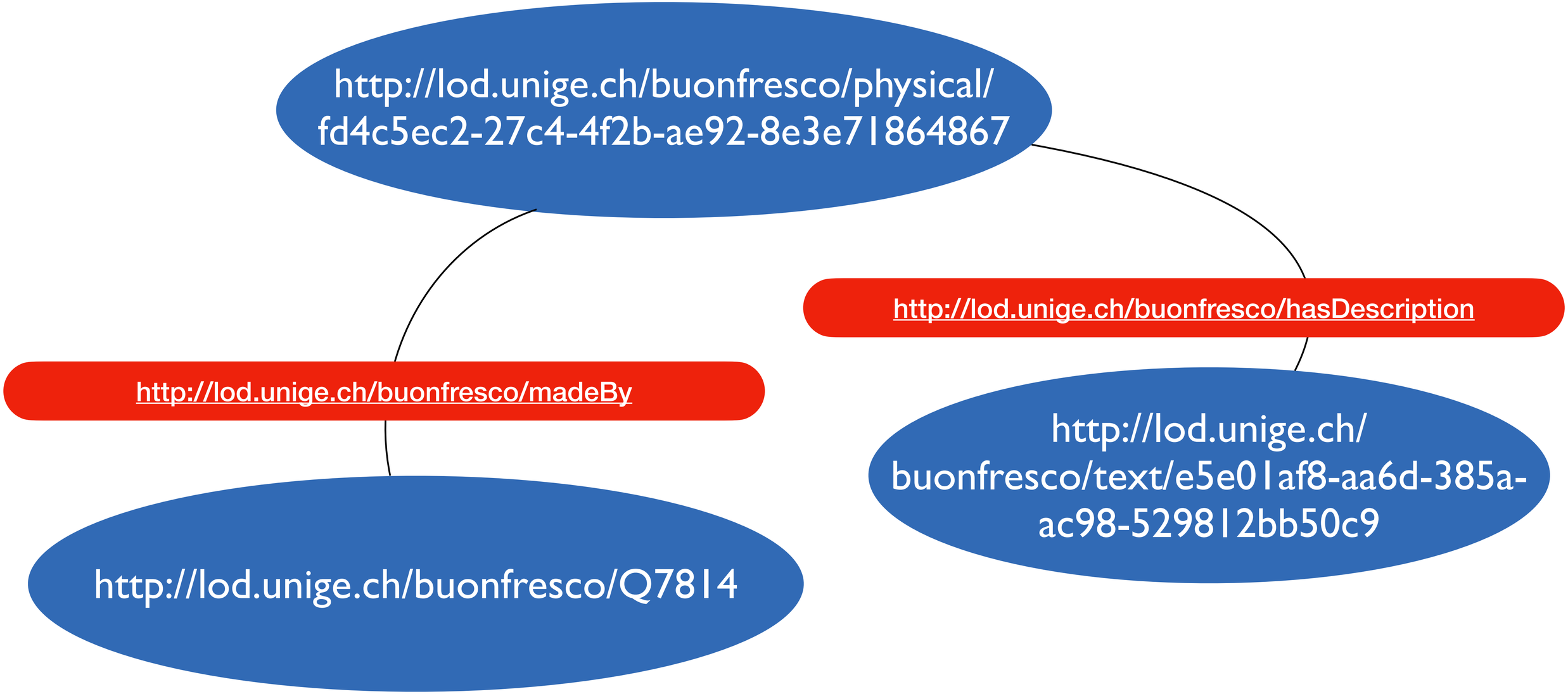
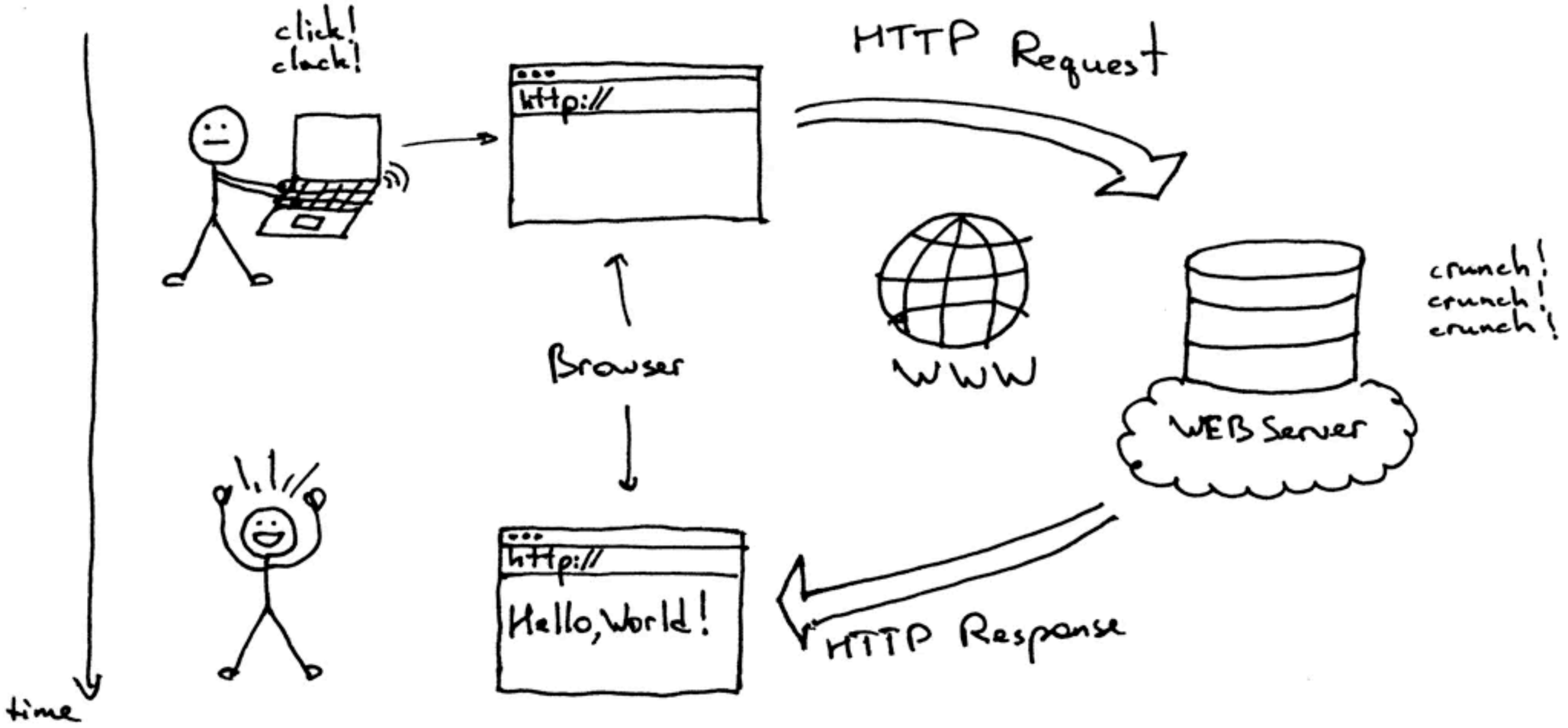

	district	name
1	https://ld.geo.admin.ch/boundaries/district/241	Jura bernois
2	https://ld.geo.admin.ch/boundaries/district/1842	Bernina
3	https://ld.geo.admin.ch/boundaries/district/1005	See
4	https://ld.geo.admin.ch/boundaries/district/2221	Aigle
5	https://ld.geo.admin.ch/boundaries/district/1403	Schaffhausen
6	https://ld.geo.admin.ch/boundaries/district/1904	Brugg
7	https://ld.geo.admin.ch/boundaries/district/1910	Zofingen
8	https://ld.geo.admin.ch/boundaries/district/112	Zürich
9	https://ld.geo.admin.ch/boundaries/district/1101	Gäu
10	https://ld.geo.admin.ch/boundaries/district/1107	Lebern
11	https://ld.geo.admin.ch/boundaries/district/246	Bern-Mittelland
12	https://ld.geo.admin.ch/boundaries/district/242	Biel/Bienne
13	https://ld.geo.admin.ch/boundaries/district/1821	Albula
14	https://ld.geo.admin.ch/boundaries/district/1822	Bernina
15	https://ld.geo.admin.ch/boundaries/district/312	Luzern-Land
16	https://ld.geo.admin.ch/boundaries/district/102	Andelfingen

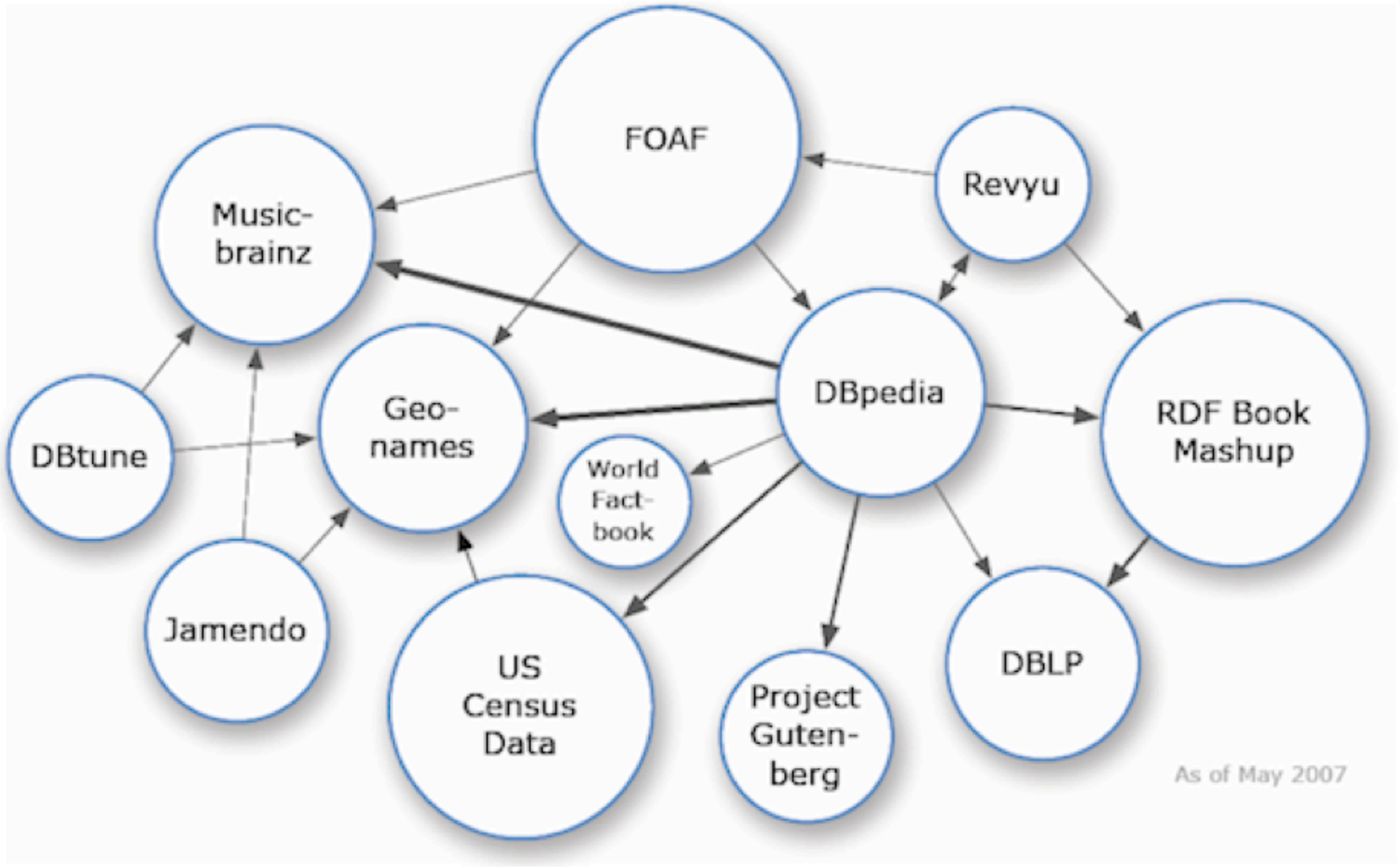

St-Hippolyte
Saignelégier
Maîche
Franches Montagnes
Tramelan
St-Imier
La Suze
1606
Chasseral
La Neuveville
Col de la Vue des Alpes
283
Bielersee
Bassecourt
Moutier
Tavannes
Grenchen
Biel/ Bienne
Büren a.A.
Aarberg
Lyss
Jegenstorf
Solothurn
1284
Weissenstein

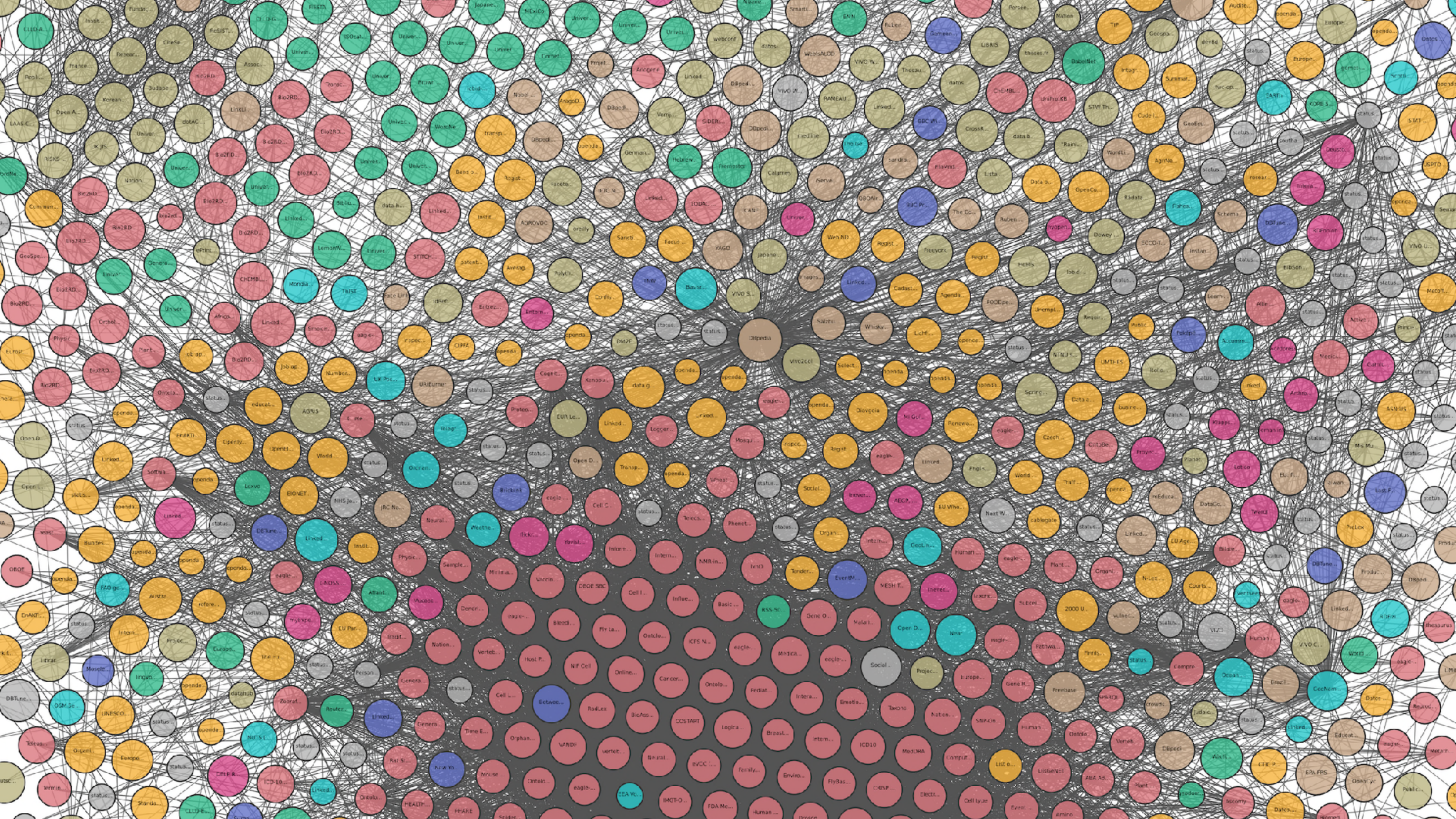

SUBJECT
Confession of a Woman Raised from the Dead
madeBy
PREDICATE
Giotto
OBJECT


SUBJECT
Confession of a Woman Raised from the Dead
madeBy
PREDICATE
Giotto
OBJECT
PREDICATE
hasDescription
Nel borgo di Monte Marano, presso
Benevento era morta una donna particolarmente devota
di san Francesco. La sera vennero i chierici per le esequie e già
apprestavano a celebrare la veglia con la recita dei salmi quand
improvvisamente, alla vista di tutti, la donna si alzò sul letto e chiamò
sacerdoti presenti, che era il suo padrino, e gli disse: \"Padre, voglio co
ascolta il mio peccato. Quando sono morta, io dovevo essere gettata in u
prigione, perché non avevo confessato il peccato che sto per dirti. Ma p
pregato san Francesco, che durante la vita ho sempre servito con devozi
mi è stato concesso di ritornare ora nel corpo, per confessare quel pe
meritarmi la vita eterna. Dopo che lo avrò confessato, ecco, mi affre
alla pace promessa\". Tremando si confessò al sacerdote tremant
ricevuta l'assoluzione, si stese in pace sul suo letto e
s'addormentò felicemente nel Signore
OBJECT


http://lod.unige.ch/buonfresco/physical/fd4c5ec2-27c4-4f2b-ae92-8e3e71864867
http://lod.unige.ch/buonfresco/hasDescription
http://lod.unige.ch/buonfresco/madeBy
http://lod.unige.ch/buonfresco/text/e5e01af8-aa6d-385a-ac98-529812bb50c9
http://lod.unige.ch/buonfresco/Q7814


click!
clack!
http://
HTTP Request
WWW
crunch!
crunch!
crunch!
WEB Server
Browser
http://
Hello, World!
HTTP Response
time


FOAF
Music-
brainz
Revyu
DBtune
Geo-
names
DBpedia
RDF Book
Mashup
World
Fact-
book
Jamendo
US
Census
Data
Project
Guten-
berg
DBLP
As of May 2007



Ontologies

```
PREFIX schema: <http://schema.org/>
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PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

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 a schema:AdministrativeArea ;
 schema:name ?name .

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PREFIX schema: <http://schema.org/>
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WHERE {

?district gn:featureCode gn:A.ADM2 ;
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```
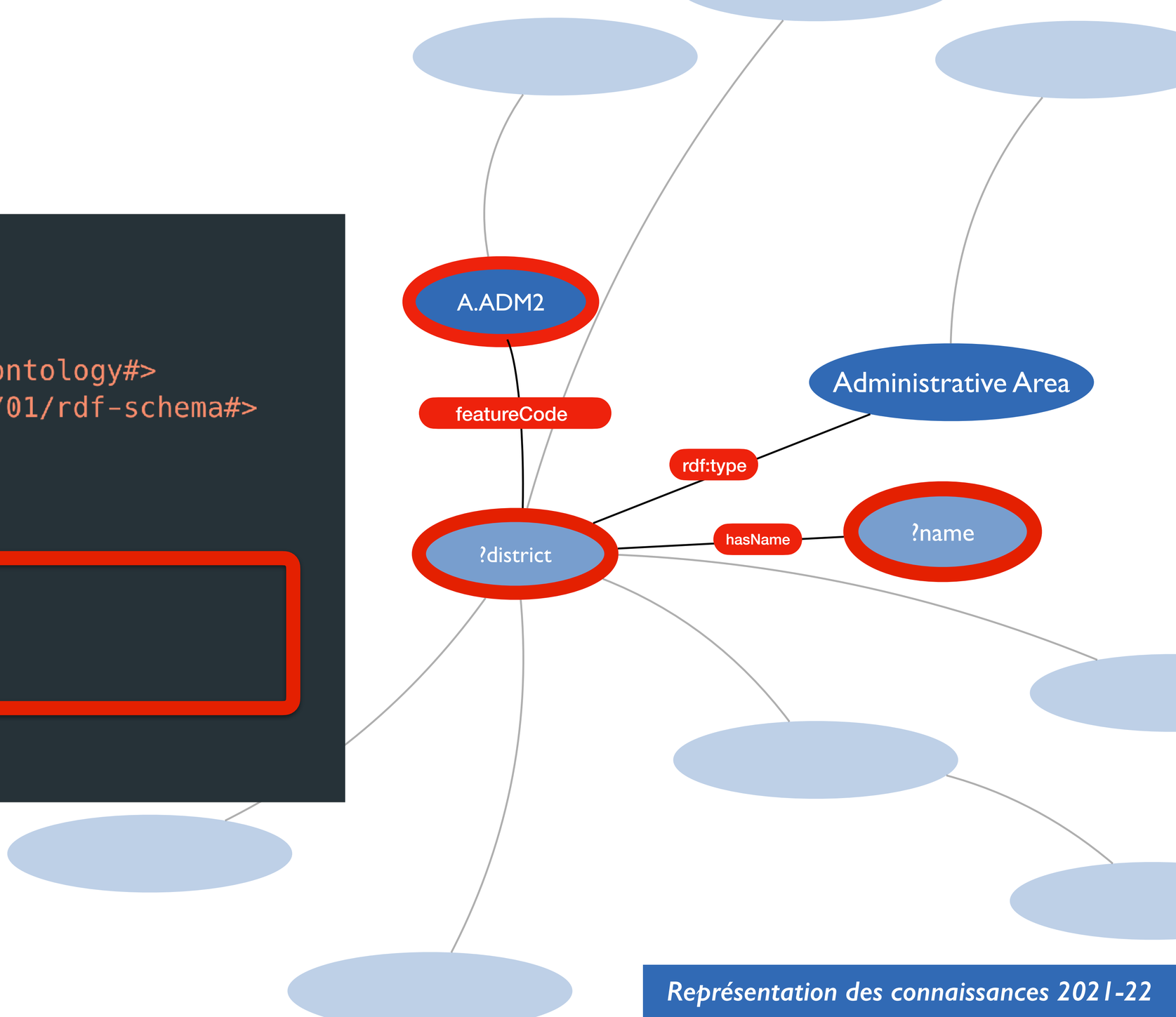
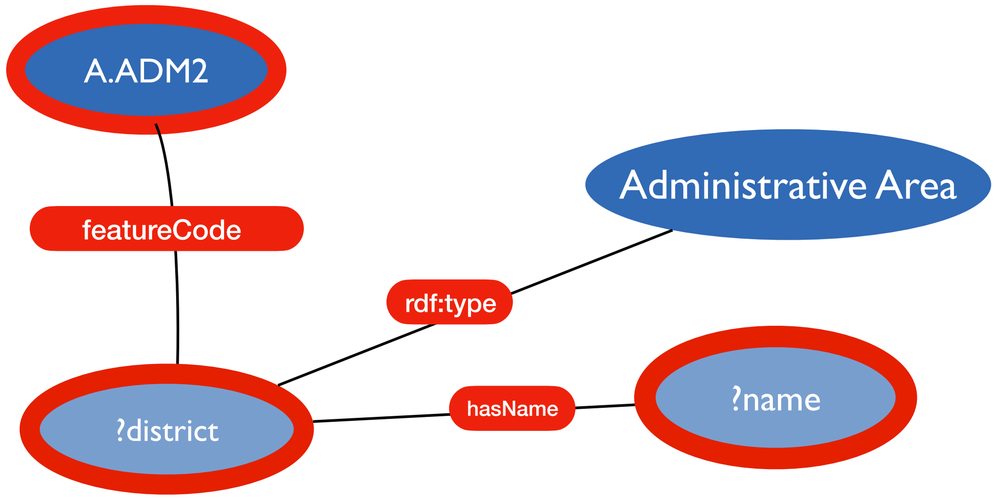



```
PREFIX schema: <http://schema.org/>
PREFIX gn: <http://www.geonames.org/ontology#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

SELECT DISTINCT ?district ?name
WHERE {

?district gn:featureCode gn:A.ADM2 ;
 a schema:AdministrativeArea ;
 schema:name ?name .

}
```



```
SELECT * WHERE {

  ?a ?b ?c

}

LIMIT 100
```

SELECT * WHERE {
?a ?b ?c
}
LIMIT 100

```
SELECT * WHERE {

  ?a wdt:P31 wd:Q41298;

}
LIMIT 100
```

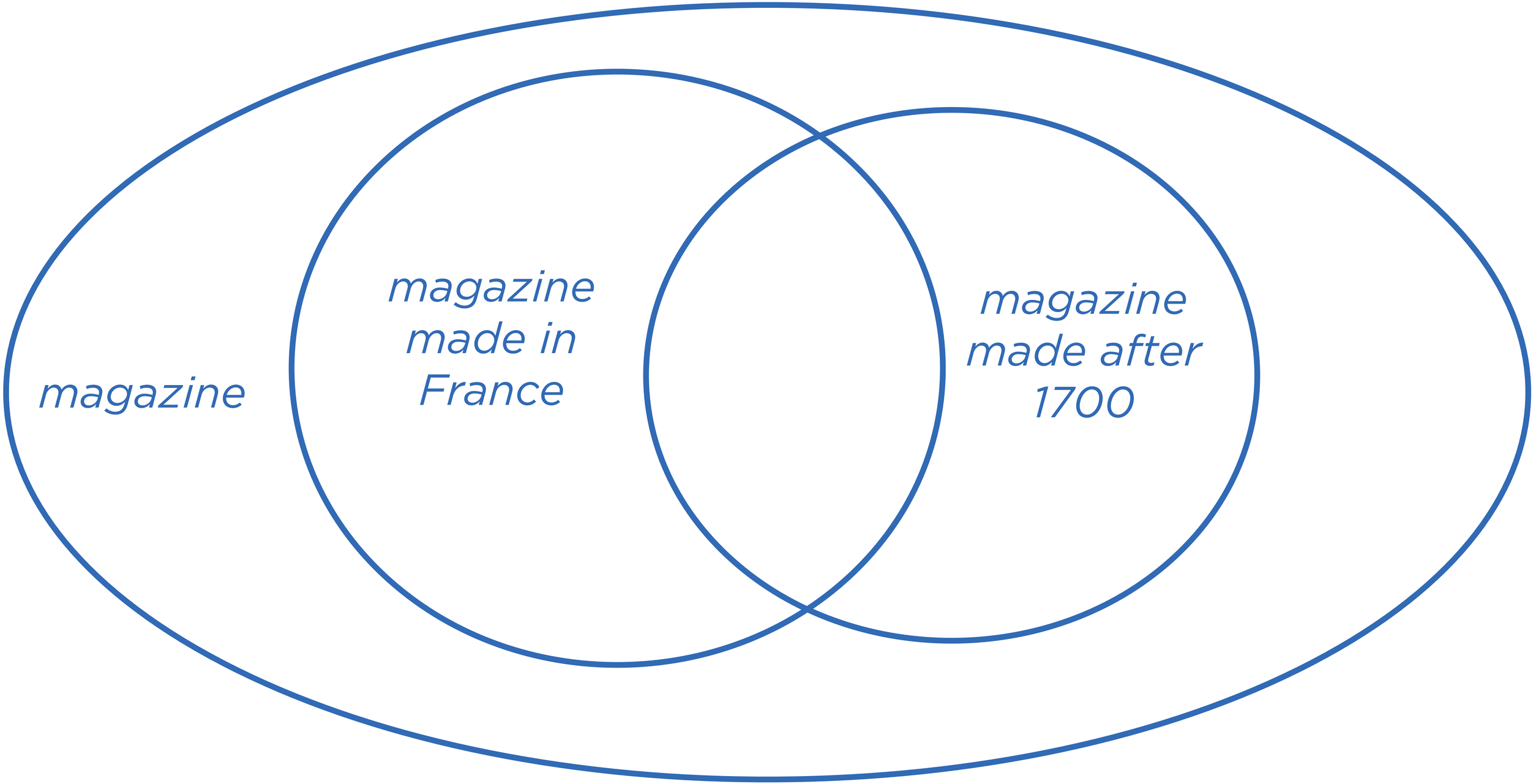
Give me everything about the resources which are instances of the class magazine. Limit the result to 100.

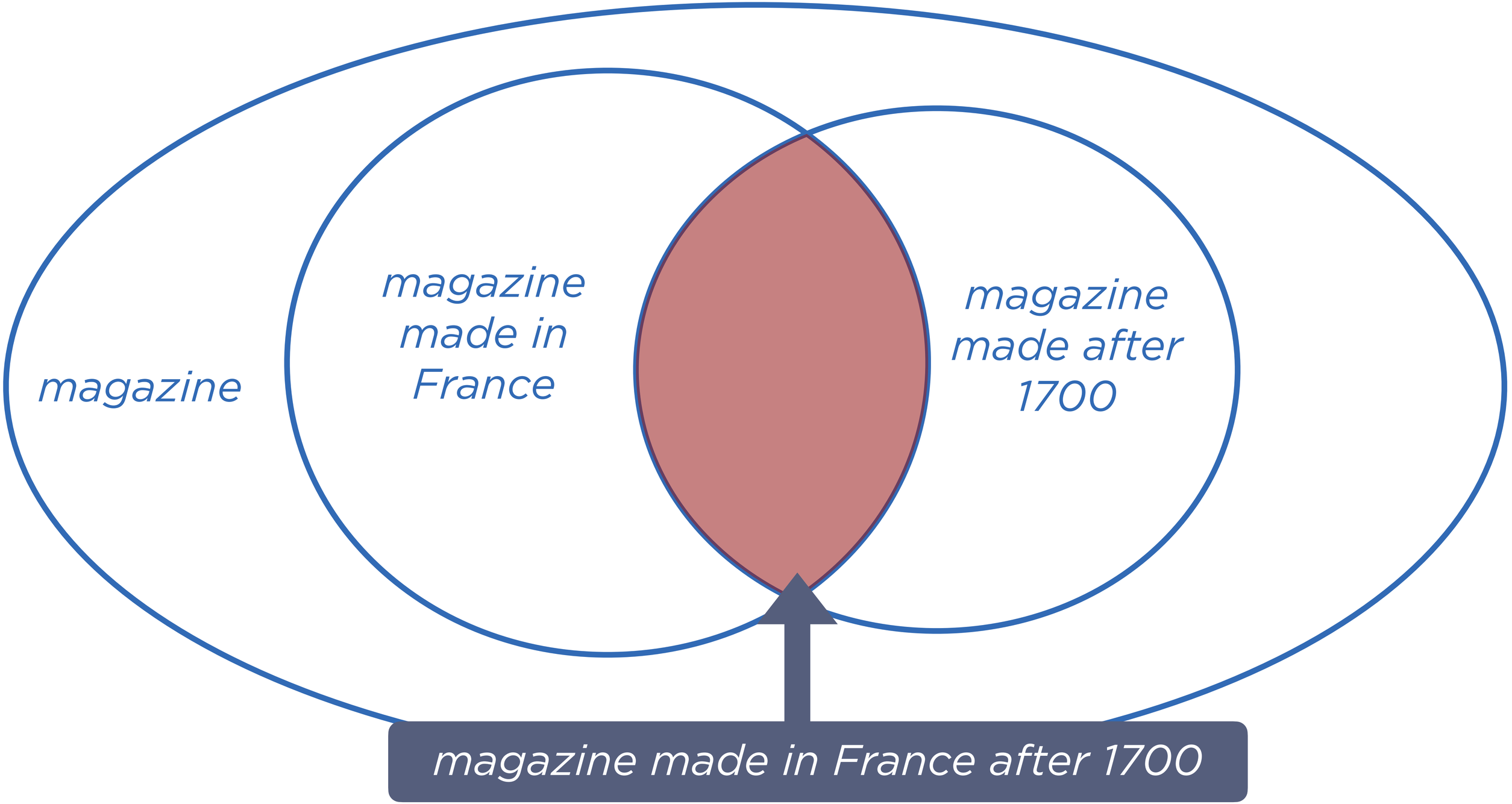
```
SELECT * WHERE {

  ?a wdt:P31 wd:Q41298;
     wdt:P17 wd:Q142.

}
LIMIT 100
```

Give me everything about the resources which are instances of the class magazine and are made in France. Limit the result to 100.

```
SELECT * WHERE {
  ?a wdt:P31 wd:Q41298;
    wdt:P571 ?time ;
   wdt:P17 wd:Q142.

  FILTER(?time > "1700-01-01T00:00:00"^^xsd:dateTime)
}
LIMIT 100
```

Give me everything about the resources which are instances of the class magazine and are made in France after 1700. Limit the result to 100.


magazine
magazine made in France
magazine made after 1700


magazine
magazine made in France
magazine made after 1700
magazine made in France after 1700

```
SELECT * WHERE {


  ?a wdt:P31 wd:Q1002697 ;
     wdt:P571 ?time.

FILTER(?time > "1700"^^xsd:dateTime && ?time < "1800"^^xsd:dateTime)

}
```

Give me everything about the resources which are instances of the class periodical made in-between 1700 and 1800. Limit the result to 200.

```
SELECT ?label WHERE {

  wd:Q83155 rdfs:label ?label .
}
```

Give me the name of a resource

```
SELECT ?label WHERE {

  wd:Q83155 rdfs:label ?label .

  FILTER (lang(?label) = 'en')

}
```

Give me the name of a resource in en

```
SELECT ?label_it ?label_en WHERE {

  wd:Q83155 rdfs:label ?label_en, ?label_it ;

  FILTER (lang(?label_en) = 'en')
  FILTER (lang(?label_it) = 'it')

}
```

Give me the name of a resource in english and italian

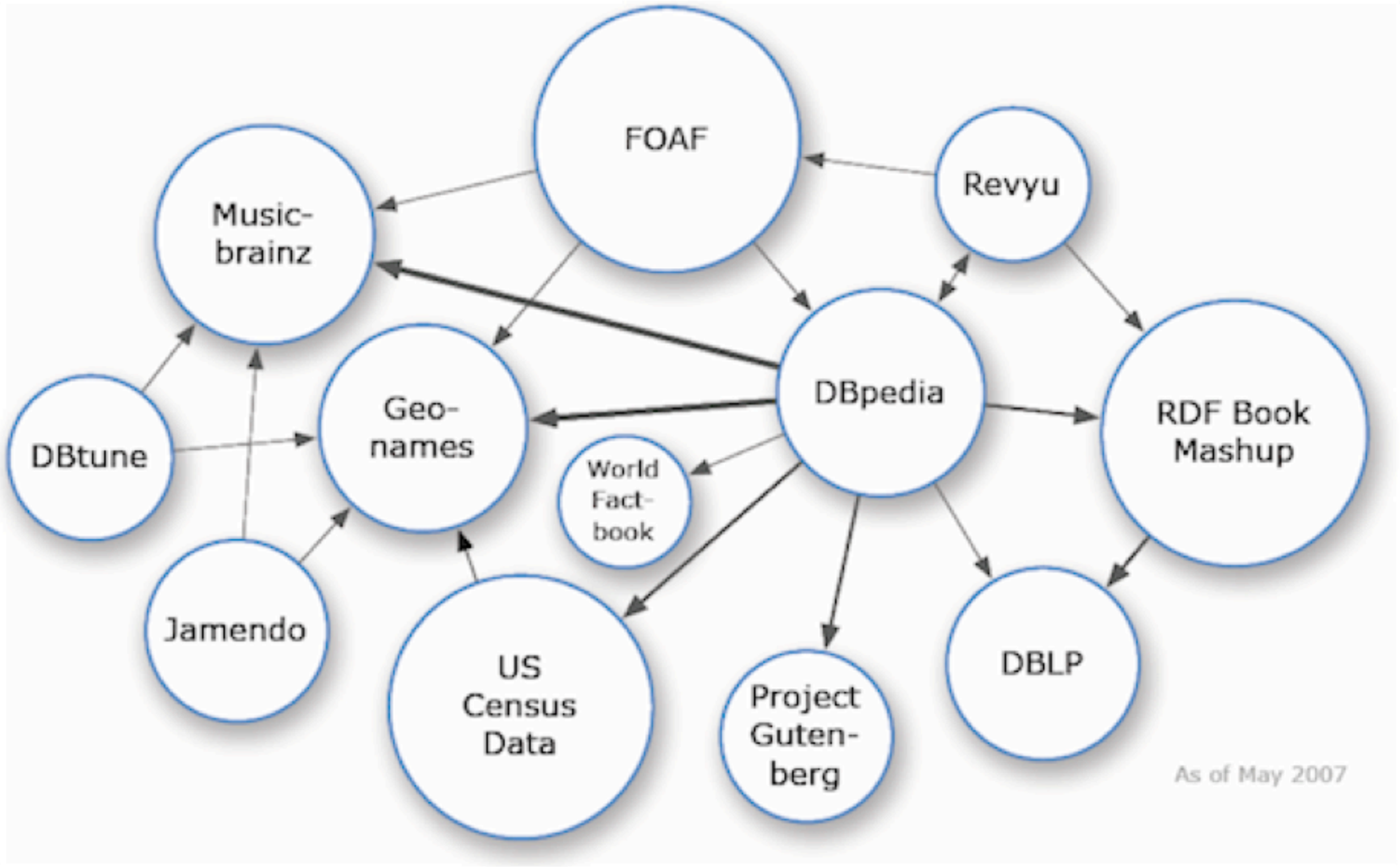
```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
SELECT DISTINCT ?fullName ?givenName ?familyName ?dbpedia ?birth ?death
?bio ?gender ?placeOfBirth ?placeOfDeath ?activity ?viaf
WHERE {

OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://vocab.org
/bio/0.1/birth> ?birth .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://vocab.org
/bio/0.1/death> ?death .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/biographicalInformation> ?bio .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/gender> ?gender .

}
OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/placeOfBirth> ?placeOfBirth .
}
OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/placeOfDeath> ?placeOfDeath .
}
OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/fieldOfActivityOfThePerson> ?activity .
    FILTER ( datatype(?activity) != '' )
}

OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/familyName> ?familyName .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/givenName> ?givenName .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/name> ?fullName .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://www.w3.org
/2002/07/owl#sameAs> ?dbpedia .
    FILTER ( contains(str(?dbpedia),'dbpedia'))
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://www.w3.org
/2002/07/owl#sameAs> ?viaf .
    FILTER ( contains(str(?viaf),'viaf'))
}


}
```

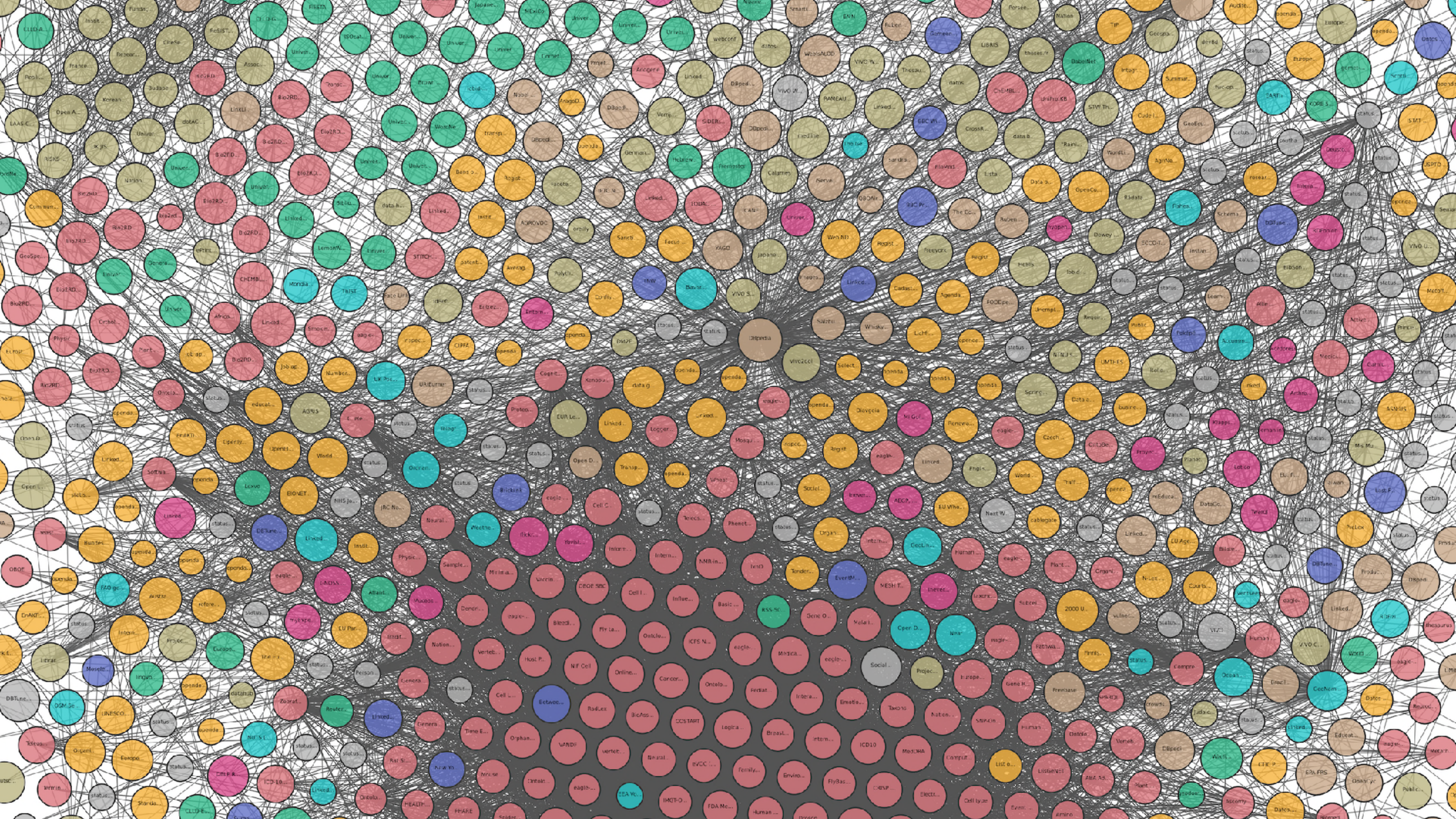
```
SELECT DISTINCT ?fullName ?givenName ?familyName ?dbpedia ?birth ?death
?bio ?gender ?placeOfBirth ?placeOfDeath ?activity ?viaf
WHERE {

OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://vocab.org
/bio/0.1/birth> ?birth .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://vocab.org
/bio/0.1/death> ?death .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/biographicalInformation> ?bio .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/gender> ?gender .

}
OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/placeOfBirth> ?placeOfBirth .
}
OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/placeOfDeath> ?placeOfDeath .
}
OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about>
```

give me the birth date
only if it is available
if not move along

```
}
OPTIONAL {
     <http://data.bnf.fr/ark:/12148/cb12393105j#about>
<http://rdvocab.info/ElementsGr2/fieldOfActivityOfThePerson> ?activity .
    FILTER ( datatype(?activity) != '' )
}

OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/familyName> ?familyName .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/givenName> ?givenName .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://xmlns.com
/foaf/0.1/name> ?fullName .
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://www.w3.org
/2002/07/owl#sameAs> ?dbpedia .
    FILTER ( contains(str(?dbpedia),'dbpedia'))
}
OPTIONAL {
    <http://data.bnf.fr/ark:/12148/cb12393105j#about> <http://www.w3.org
/2002/07/owl#sameAs> ?viaf .
    FILTER ( contains(str(?viaf),'viaf'))
}


}
```

Give me a string that contains the value ‘viaf’


FOAF
Music-
brainz
Revyu
DBtune
Geo-
names
DBpedia
RDF Book
Mashup
World
Fact-
book
Jamendo
US
Census
Data
Project
Guten-
berg
DBLP
As of May 2007



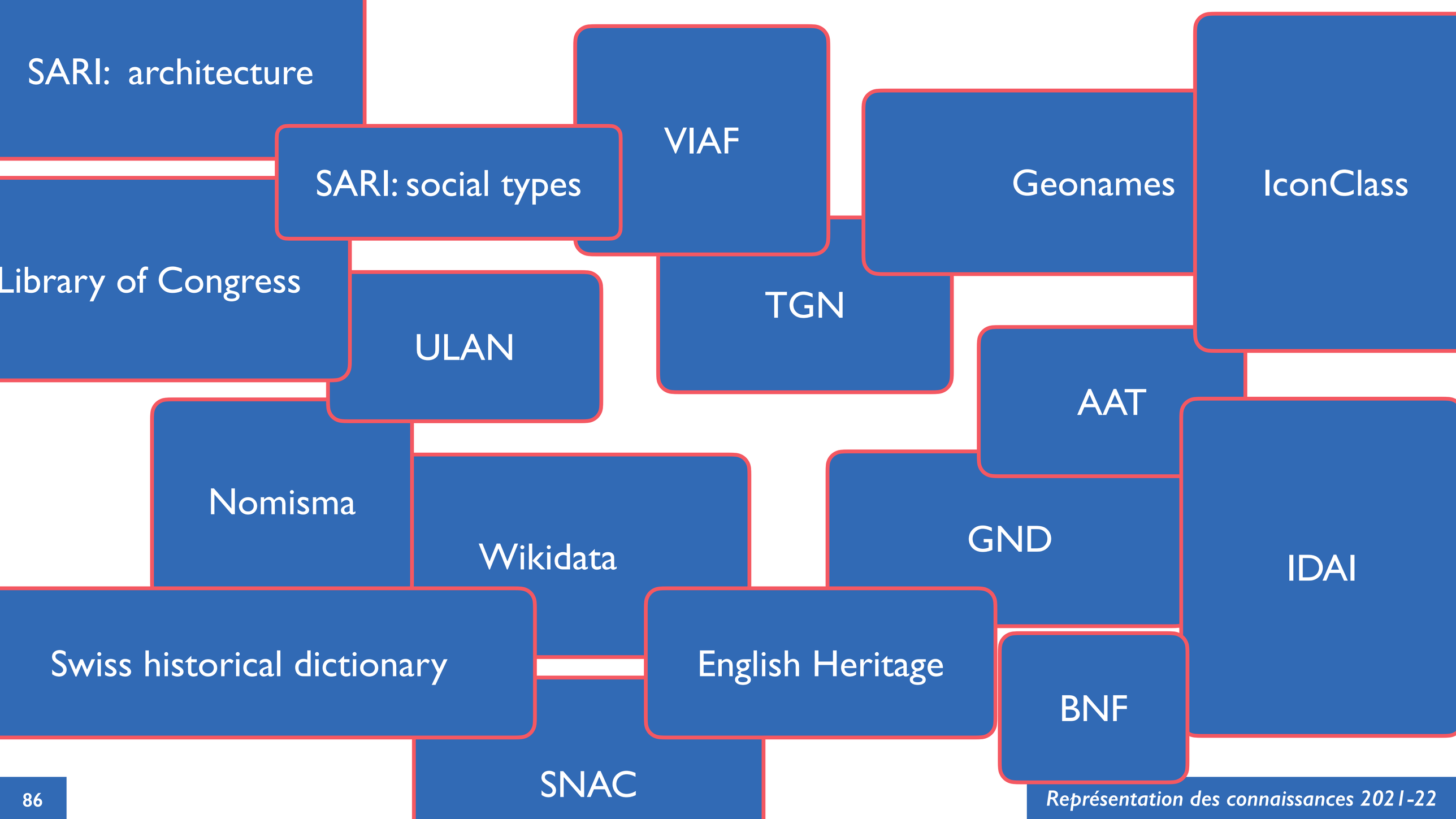
```
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX wdt: <http://www.wikidata.org/prop/direct/>
PREFIX gvp: <http://vocab.getty.edu/ontology#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

SELECT ?preflabelArtist ?wdsubj ?labelAss ?labelCollab ?labelSib ?image ?
labelInfluencer ?imageInfluencer WHERE {
BIND("500115588" AS ?ULANID)
  ?sub dc:identifier ?ULANID ;
        skos:prefLabel ?preflabelArtist ;
        gvp:ulan1303_collaborated_with ?collaborator ;
        gvp:ulan1307_assistant_of ?assistant ;
        gvp:ulan1501_sibling_of ?sibiling .

?collaborator skos:prefLabel ?labelCollab .
?assistant  skos:prefLabel ?labelAss .
?sibiling skos:prefLabel ?labelSib .

  SERVICE <https://query.wikidata.org/sparql>
{ ?wdsubj wdt:P245 ?ULANID ;
          wdt:P18 ?image ;
          wdt:P135 ?movement;
          wdt:P737 ?influencedBy .
  ?influencedBy rdfs:label ?labelInfluencer ;
                wdt:P18 ?imageInfluencer .
   ?movement rdfs:label ?labelMov .
  }


FILTER(langMatches(lang(?preflabelArtist), "en"))
FILTER(langMatches(lang(?labelInfluencer), "en"))
FILTER(langMatches(lang(?labelCollab), "en"))
FILTER(langMatches(lang(?labelSib), "nl"))
FILTER(langMatches(lang(?labelAss), "en"))
FILTER(langMatches(lang(?labelMov), "en"))
}
```

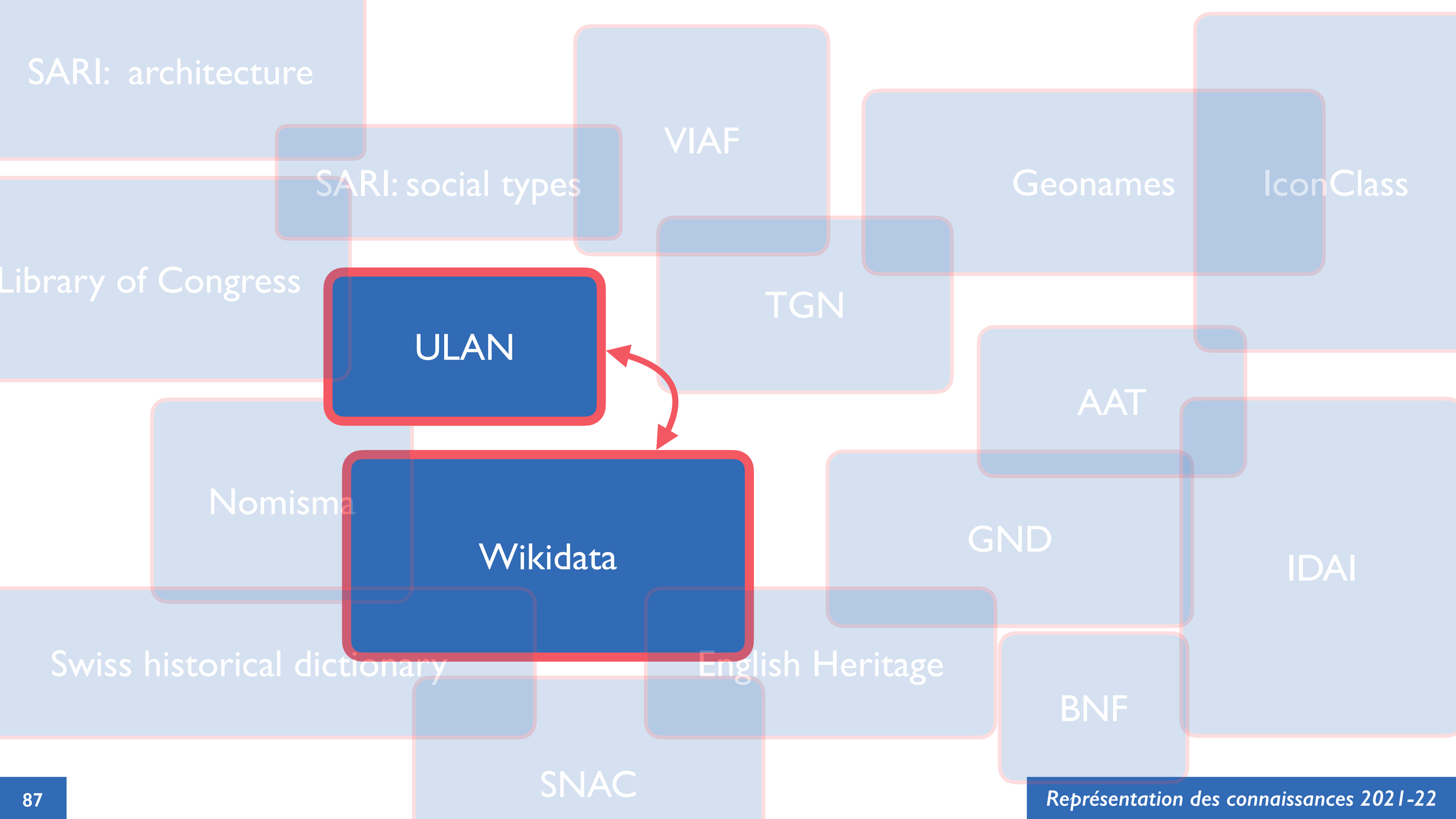
```
PREFIX gvp: <http://vocab.getty.edu/ontology#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

SELECT ?preflabelArtist ?wdsubj ?labelAss ?labelCollab ?labelSib ?image ?
BIND("500115588" AS ?ULANID)
        skos:prefLabel ?preflabelArtist ;
        gvp:ulan1303_collaborated_with ?collaborator ;
        gvp:ulan1307_assistant_of ?assistant ;
        gvp:ulan1501_sibling_of ?sibiling .

?collaborator skos:prefLabel ?labelCollab .
?assistant  skos:prefLabel ?labelAss .
?sibiling skos:prefLabel ?labelSib .

  SERVICE <https://query.wikidata.org/sparql>
{ ?wdsubj wdt:P245 ?ULANID ;
          wdt:P18 ?image ;
          wdt:P135 ?movement;
          wdt:P737 ?influencedBy .
  ?influencedBy rdfs:label ?labelInfluencer ;
                wdt:P18 ?imageInfluencer .
   ?movement rdfs:label ?labelMov .
  }


FILTER(langMatches(lang(?preflabelArtist), "en"))
FILTER(langMatches(lang(?labelInfluencer), "en"))
```

Bind value to variable

```
PREFIX gvp: <http://vocab.getty.edu/ontology#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

SELECT ?preflabelArtist ?wdsubj ?labelAss ?labelCollab ?labelSib ?image ?
labelInfluencer ?imageInfluencer WHERE {
BIND("500115588" AS ?ULANID)
  ?sub dc:identifier ?ULANID ;
       skos:prefLabel ?preflabelArtist ;
       gvp:ulan1303_collaborated_with ?collaborator ;
       gvp:ulan1307_assistant_of ?assistant ;
       gvp:ulan1501_sibling_of ?sibiling .

?collaborator skos:prefLabel ?labelCollab .
?assistant  skos:prefLabel ?labelAss .
?sibiling skos:prefLabel ?labelSib .

  SERVICE <https://query.wikidata.org/sparql>
{ ?wdsubj wdt:P245 ?ULANID ;
          wdt:P18 ?image ;
          wdt:P135 ?movement;
          wdt:P737 ?influencedBy .
  ?influencedBy rdfs:label ?labelInfluencer ;
                wdt:P18 ?imageInfluencer .
   ?movement rdfs:label ?labelMov .
  }


 FILTER(langMatches(lang(?preflabelArtist), "en"))
 FILTER(langMatches(lang(?labelInfluencer), "en"))
```

cross information


SARI: architecture
SARI: social types
VIAF
Geonames
IconClass
Library of Congress
ULAN
TGN
AAT
Nomisma
Wikidata
GND
IDAI
Swiss historical dictionary
English Heritage
BNF
SNAC


SARI: architecture
VIAF
SARI: social types
Geonames
IconClass
Library of Congress
TGN
ULAN
AAT
Nomisma
GND
IDAI
Wikidata
Swiss historical dictionary
English Heritage
BNF
SNAC

```
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX wdt: <http://www.wikidata.org/prop/direct/>
PREFIX gvp: <http://vocab.getty.edu/ontology#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

SELECT ?preflabelArtist ?wdsubj ?labelAss ?labelCollab ?labelSib ?image ?
labelInfluencer ?imageInfluencer ?title WHERE {

BIND("500115588" AS ?ULANID)

  ?sub dc:identifier ?ULANID ;
       skos:prefLabel ?preflabelArtist ;
       gvp:ulan1303_collaborated_with ?collaborator ;
       gvp:ulan1307_assistant_of ?assistant ;
       gvp:ulan1501_sibling_of ?sibiling .

?collaborator skos:prefLabel ?labelCollab .
?assistant  skos:prefLabel ?labelAss .
?sibiling skos:prefLabel ?labelSib .

  SERVICE <https://query.wikidata.org/sparql>
  { ?wdsubj wdt:P245 ?ULANID ;
            wdt:P18 ?image ;
            wdt:P135 ?movement;
            wdt:P737 ?influencedBy ;
            wdt:P268 ?bnfID .
    ?influencedBy rdfs:label ?labelInfluencer ;
                  wdt:P18 ?imageInfluencer .
     ?movement rdfs:label ?labelMov .
    }

BIND (?bnfID as ?bnfIdentifier)
BIND ("http://data.bnf.fr/ark:/12148/cb" as ?baseURI)
BIND(URI(CONCAT(?baseURI,?bnfIdentifier)) AS ?bnfURI)

  SERVICE <https://data.bnf.fr/sparql>
  { ?workBNF dc:subject ?bnfURI ;
             rdfs:label ?title .

    }

FILTER(langMatches(lang(?preflabelArtist), "en"))
FILTER(langMatches(lang(?labelInfluencer), "en"))
FILTER(langMatches(lang(?labelCollab), "en"))
FILTER(langMatches(lang(?labelSib), "nl"))
FILTER(langMatches(lang(?labelAss), "en"))
FILTER(langMatches(lang(?labelMov), "en"))
}
```

```
BIND("500115588" AS ?ULANID)

  ?sub dc:identifier ?ULANID ;
       skos:prefLabel ?preflabelArtist ;
       gvp:ulan1303_collaborated_with ?collaborator ;
       gvp:ulan1307_assistant_of ?assistant ;
       gvp:ulan1501_sibling_of ?sibiling .

?collaborator skos:prefLabel ?labelCollab .
?assistant  skos:prefLabel ?labelAss .
?sibiling skos:prefLabel ?labelSib .

  SERVICE <https://query.wikidata.org/sparql>
  { ?wdsubj wdt:P245 ?ULANID ;
            wdt:P18 ?image ;
            wdt:P135 ?movement;
            wdt:P737 ?influencedBy ;
            wdt:P268 ?bnfID .
    ?influencedBy rdfs:label ?labelInfluencer ;
                  wdt:P18 ?imageInfluencer .
     ?movement rdfs:label ?labelMov .
    }

BIND (?bnfID as ?bnfIdentifier)
BIND ("http://data.bnf.fr/ark:/12148/cb" as ?baseURI)
BIND(URI(CONCAT(?baseURI,?bnfIdentifier)) AS ?bnfURI)

  SERVICE <https://data.bnf.fr/sparql>
  { ?workBNF dc:subject ?bnfURI ;
             rdfs:label ?title .

    }
```

Query some data

- AAT/ULAN
- Wikidata
- BNF