Semantic Web Working Group

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Concept/thing duality

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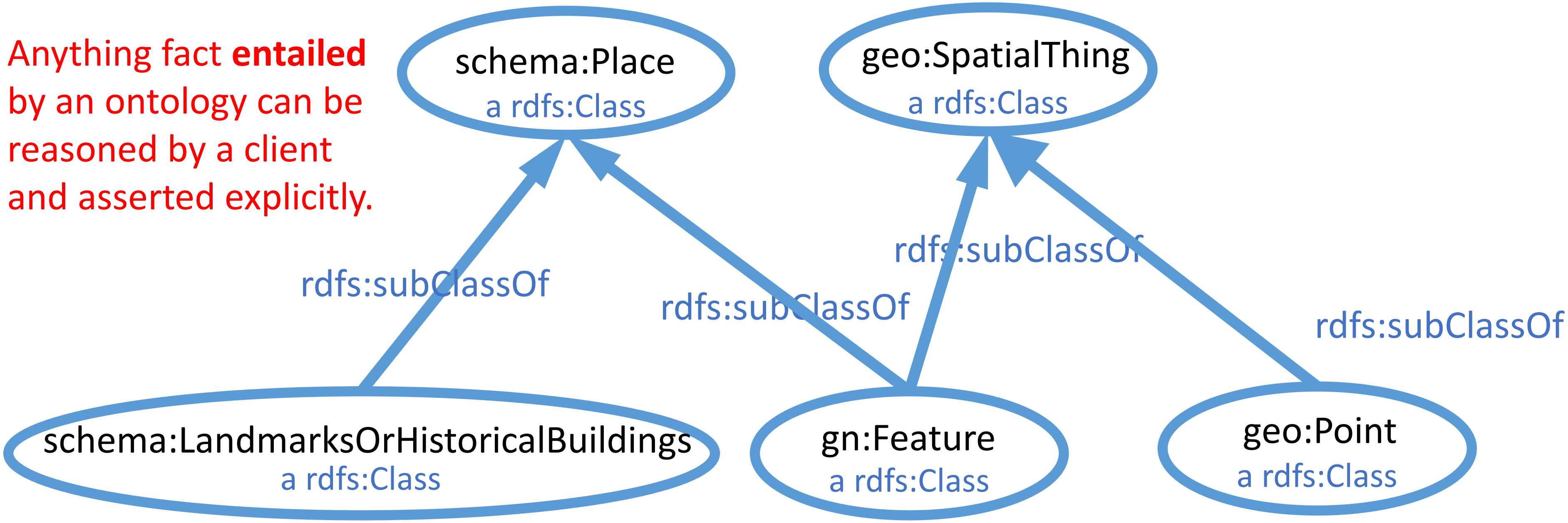
Things

Explaining relationships about what things **ARE** is called an **ontology**.

Anything fact **entailed** by an ontology can be reasoned by a client and asserted explicitly.



If

```
<http://sws.geonames.org/1803429/> a gn:Feature.
```

then

```
<http://sws.geonames.org/1803429/> a schema:Place.
```

and

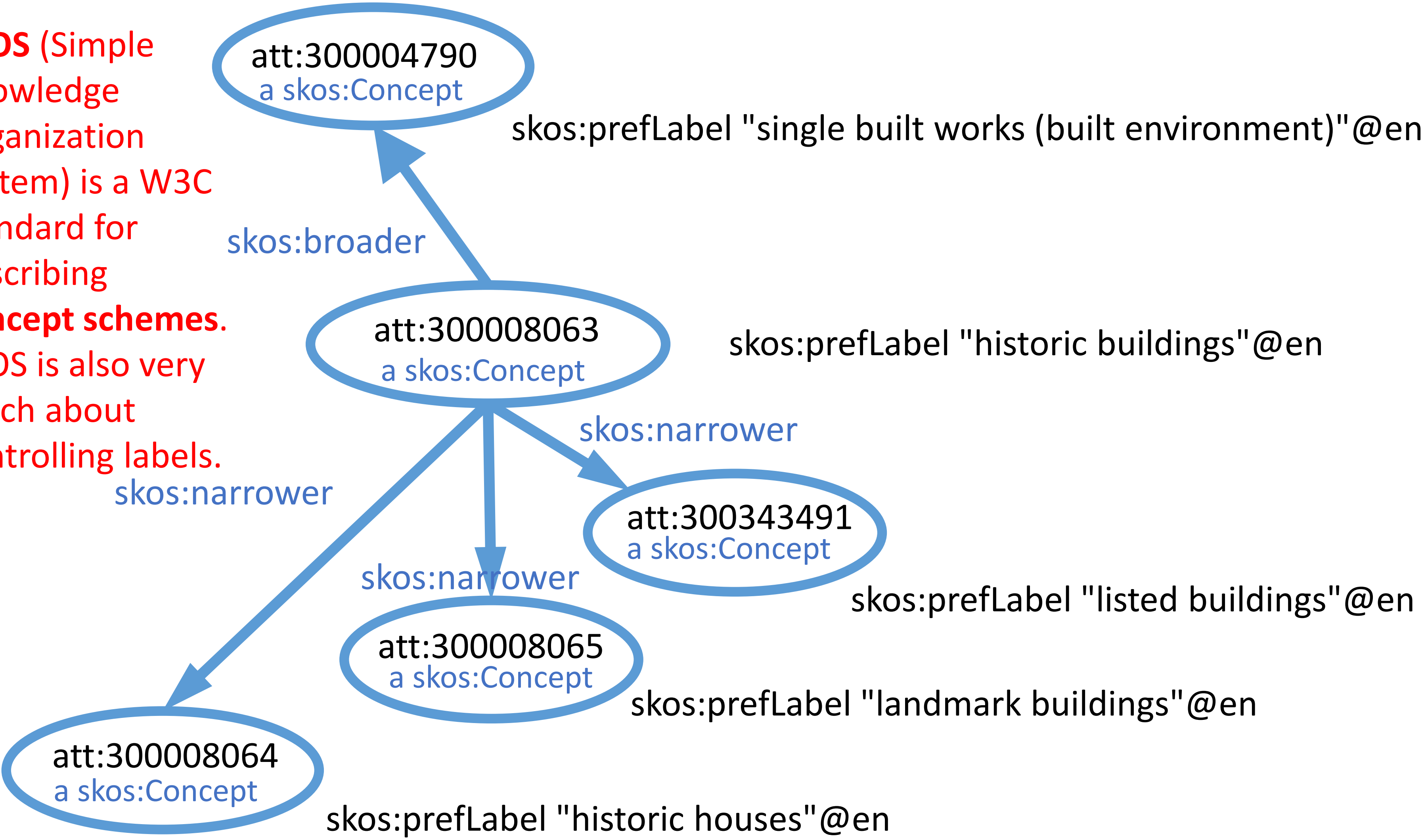
```
<http://sws.geonames.org/1803429/> a geo:SpatialThing.
```

Concepts

Relationships from
`http://vocab.getty.edu/aat/` (Getty Art and Architecture Thesaurus; `att:`)

Explaining relationships about **how we categorize things** is called an **concept scheme**.

SKOS (Simple Knowledge Organization System) is a W3C standard for describing **concept schemes**. SKOS is also very much about controlling labels.



att:300004790
a skos:Concept
skos:prefLabel "single built works (built environment)"@en

skos:broader

att:300008063
a skos:Concept
skos:prefLabel "historic buildings"@en

skos:narrower

att:300343491
a skos:Concept
skos:prefLabel "listed buildings"@en

skos:narrower

skos:narrower

att:300008065
a skos:Concept
skos:prefLabel "landmark buildings"@en

att:300008064
a skos:Concept
skos:prefLabel "historic houses"@en

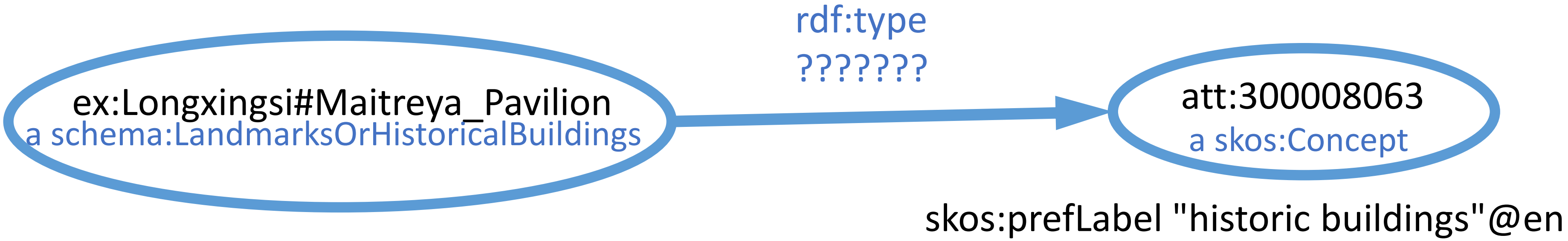
We said:

```
ex:Longxingsi#Maitreya_Pavilion a schema:LandmarksOrHistoricalBuildings.
```

Should we say:

```
ex:Longxingsi#Maitreya_Pavilion a att:300008063.
```

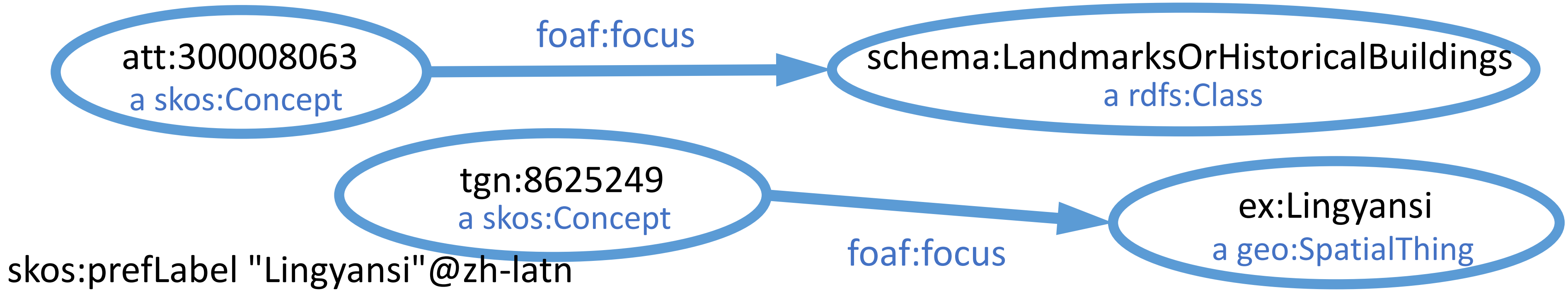
?



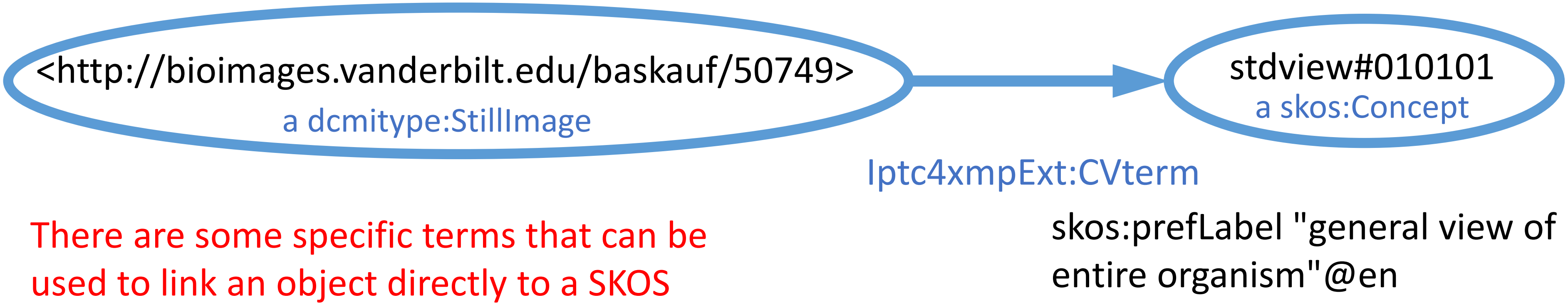
ex:Longxingsi#Maitreya_Pavilion
a schema:LandmarksOrHistoricalBuildings
rdf:type
???????
att:300008063
a skos:Concept
skos:prefLabel "historic buildings"@en

The object of an `rdf:type` triple is a class (what the thing is), whereas a `skos:Concept` is "an idea or notion; a unit of thought", and is used to organize and categorize knowledge. Using a `skos:Concept` as a class is consistent with the SKOS data model, but probably not a good idea.

Distinguishing between concepts and the real-world things they represent has been called the **concept-thing duality**. The term `foaf:focus` is usually used to link a concept with the real-world thing that it represents (which can be a class or an instance).



att:300008063
a skos:Concept
foaf:focus
schema:LandmarksOrHistoricalBuildings
a rdfs:Class
tgn:8625249
a skos:Concept
skos:prefLabel "Lingyansi"@zh-latn
foaf:focus
ex:Lingyansi
a geo:SpatialThing



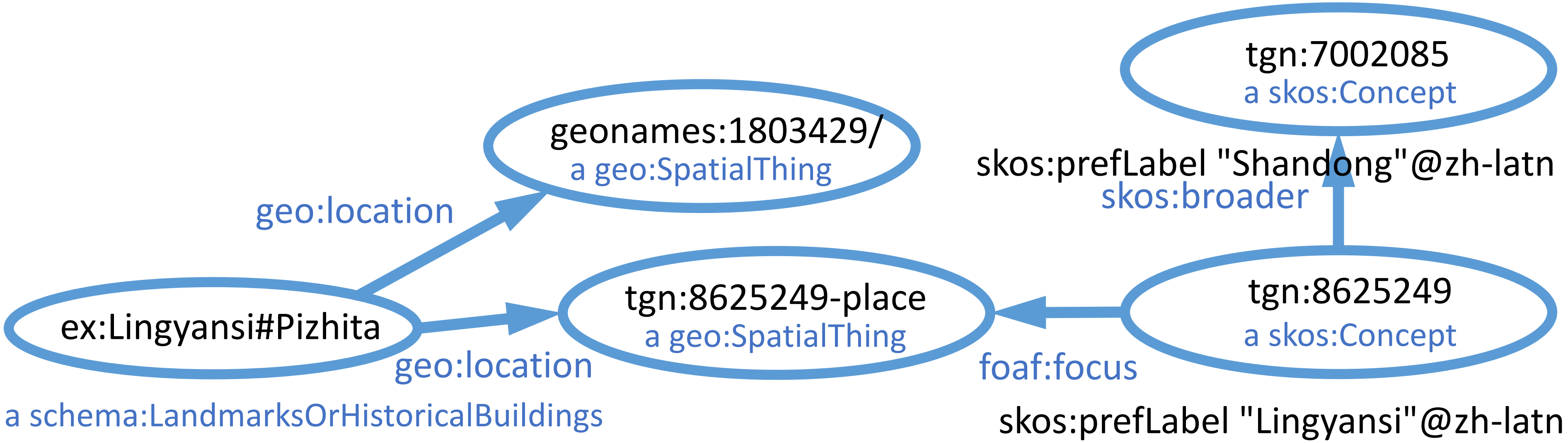
<http://bioimages.vanderbilt.edu/baskauf/50749>
a dcmitype:StillImage

Iptc4xmpExt:CVterm

stdview#010101
a skos:Concept

skos:prefLabel "general view of entire organism"@en

There are some specific terms that can be used to link an object directly to a SKOS concept. dcterms:subject is a common generic term used to make the connection.



tgn:7002085
a skos:Concept

skos:prefLabel "Shandong"@zh-latn

skos:broader

geonames:1803429/
a geo:SpatialThing

geo:location

ex:Lingyansi#Pizhita
a schema:LandmarksOrHistoricalBuildings

geo:location

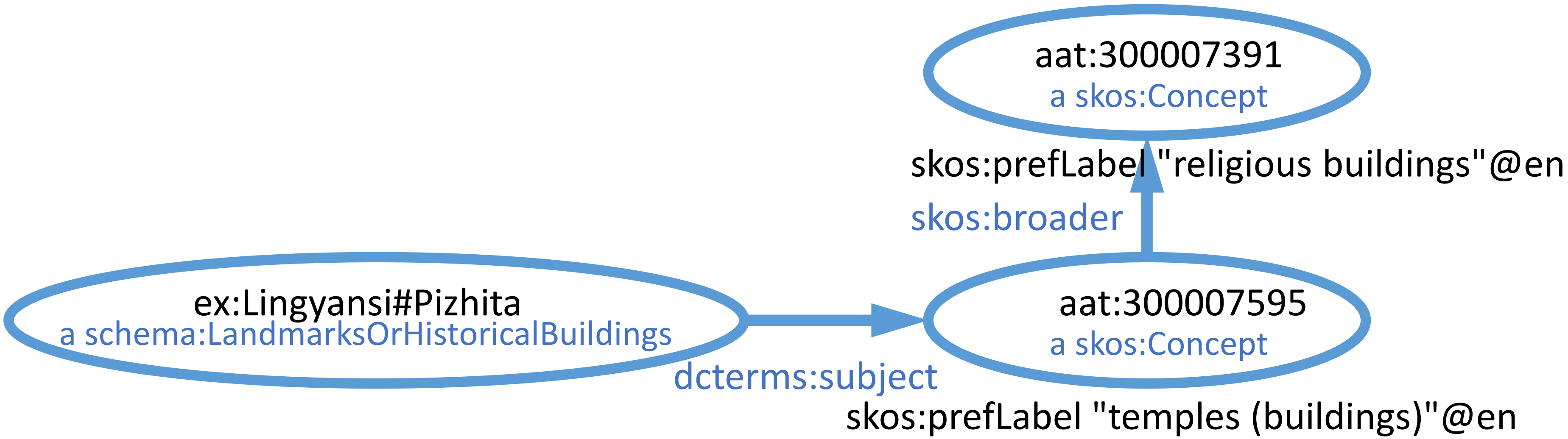
tgn:8625249-place
a geo:SpatialThing

foaf:focus

tgn:8625249
a skos:Concept

skos:prefLabel "Lingyansi"@zh-latn

The diagram above shows how the Getty Thesaurus of Geographic Names handles the concept-thing duality problem.


aat:300007391
a skos:Concept
skos:prefLabel "religious buildings"@en
skos:broader
ex:Lingyansi#Pizhita
a schema:LandmarksOrHistoricalBuildings
dcterms:subject
aat:300007595
a skos:Concept
skos:prefLabel "temples (buildings)"@en

If we say:

```
ex:Longxingsi#Pizhita dcterms:subject aat:300007595.
```

Does that entail:

```
ex:Longxingsi#Pizhita dcterms:subject aat:300007391.
```

? No. A client may lead a human searcher to the broader category, but it's not entailed.

A client programmed to process SKOS can apply various rules from the SKOS specification. But nothing is automatically entailed as with ontology reasoning.