MEAM Central Ontology

Discovering the basic ontology structure through SPARQL queries

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Finding the classes in the MEAM Central ontology

```
select distinct ?resource
{
  ?resource rdf:type owl:Class .
}
```

resource
mco:EmotionType
mco:PersonType
mco:PlaceType
mco:EventType
mco:Event
mco:Place
mco:Music
mco:Emotion
mco:Description
foaf:Person
mco:Track
mco:Memory

foaf:Person

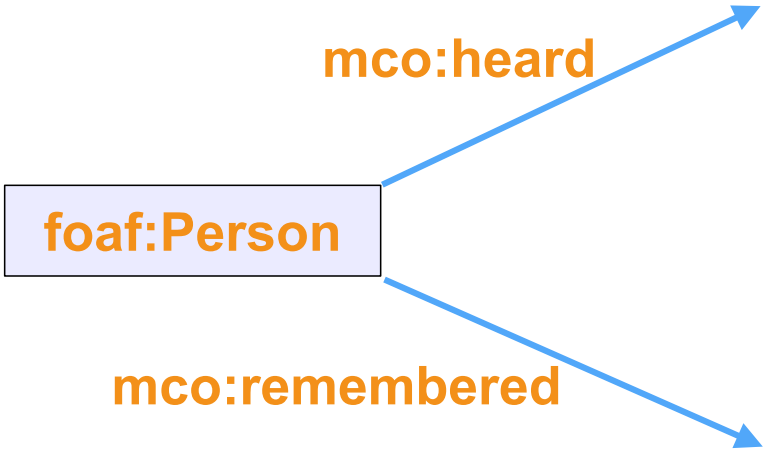
mco:Music

mco:Memory

Finding the properties associated with the Person class

```
select ?property
{
  ?property owl:ObjectProperty foaf:Person .
}
```

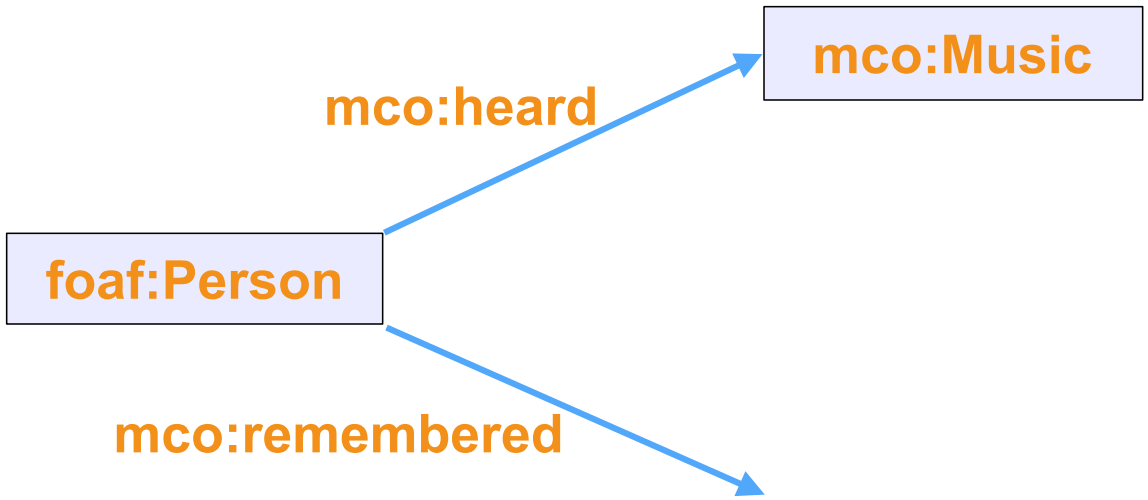
property
mco:nb_participant
mco:heard
mco:remembered



What has the Person heard?

```
select ?object
{
  foaf:Person mco:heard ?object .
}
```

object
mco:Music



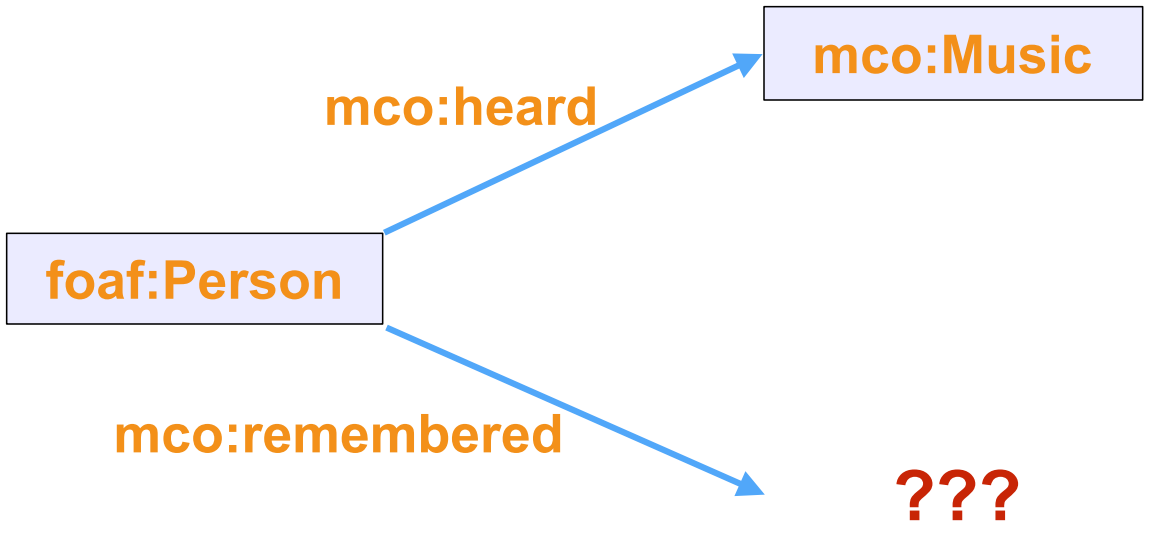
What has the Person remembered?

```
select ?object
{
  foaf:Person mco:remembered ?object .
}
```

No results

Query Information

timing		
	plan	0.004539
memory		
	maximumChunk	28
	maximumMap	0



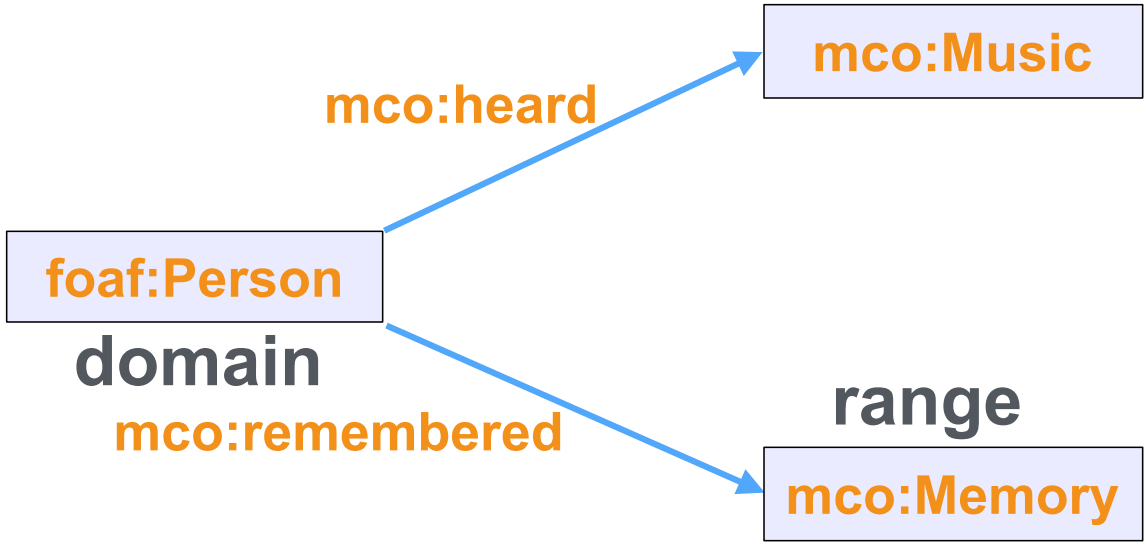
The subject and object that a predicate binds can be specified differently

- **Domain** (refers to the subject of a predicate)
- **Range** (refers to the object of a predicate)

Domain and range for a predicate/property

```
select *
{
  mco:remembered rdfs:domain ?domain ;
                 rdfs:range ?range .
}
```

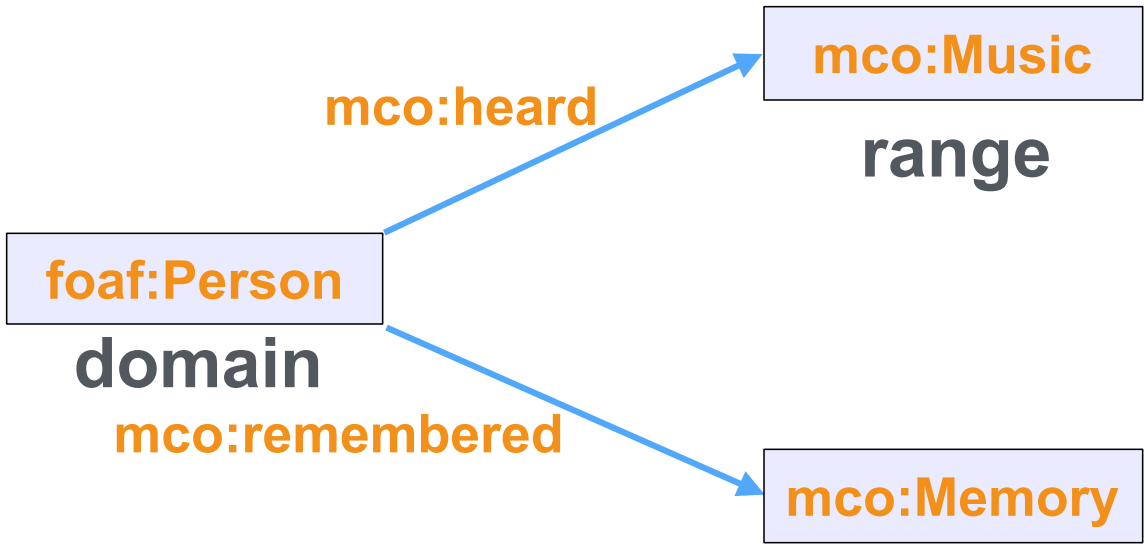
domain	range
foaf:Person	mco:Memory



Does this work for “heard”?

```
select *
{
  mco:heard rdfs:domain ?domain ;
                rdfs:range ?range .
}
```

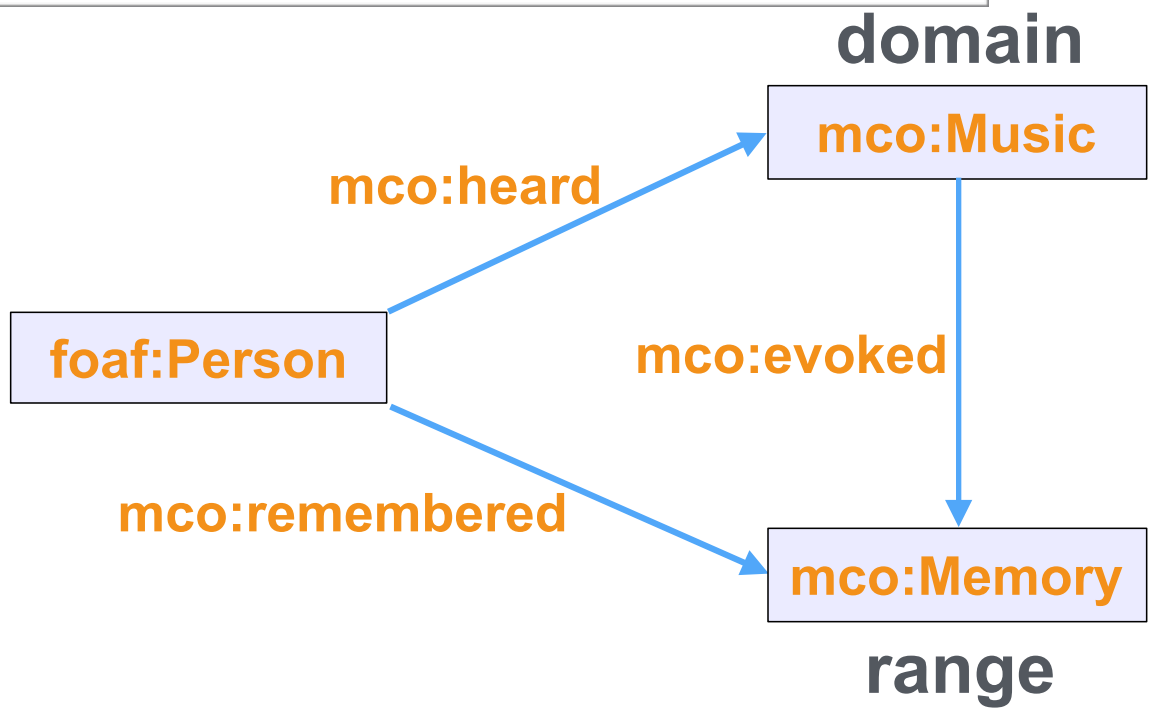
domain	range
foaf:Person	mco:Music



Is there a property that connects Music and Memory?

```
select *
{
  ?property rdfs:domain mco:Music ;
                rdfs:range mco:Memory .
}
```

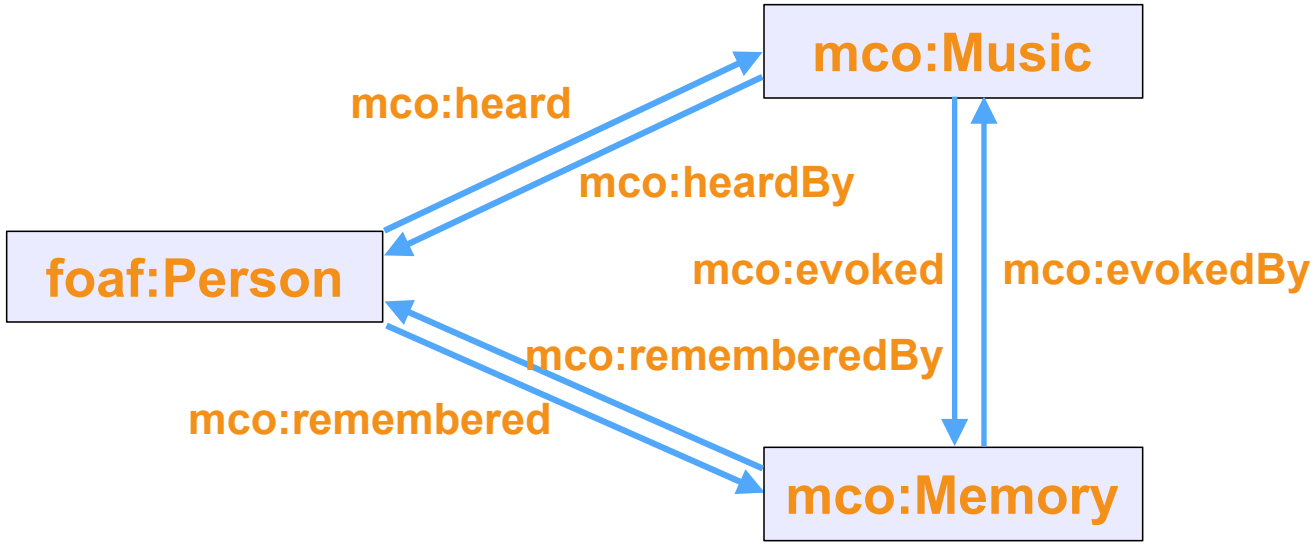
property
mco:evoked



owl:inverseOf

```
select *
{
  ?property rdfs:domain mco:Music ;
                rdfs:range mco:Memory .
}
```

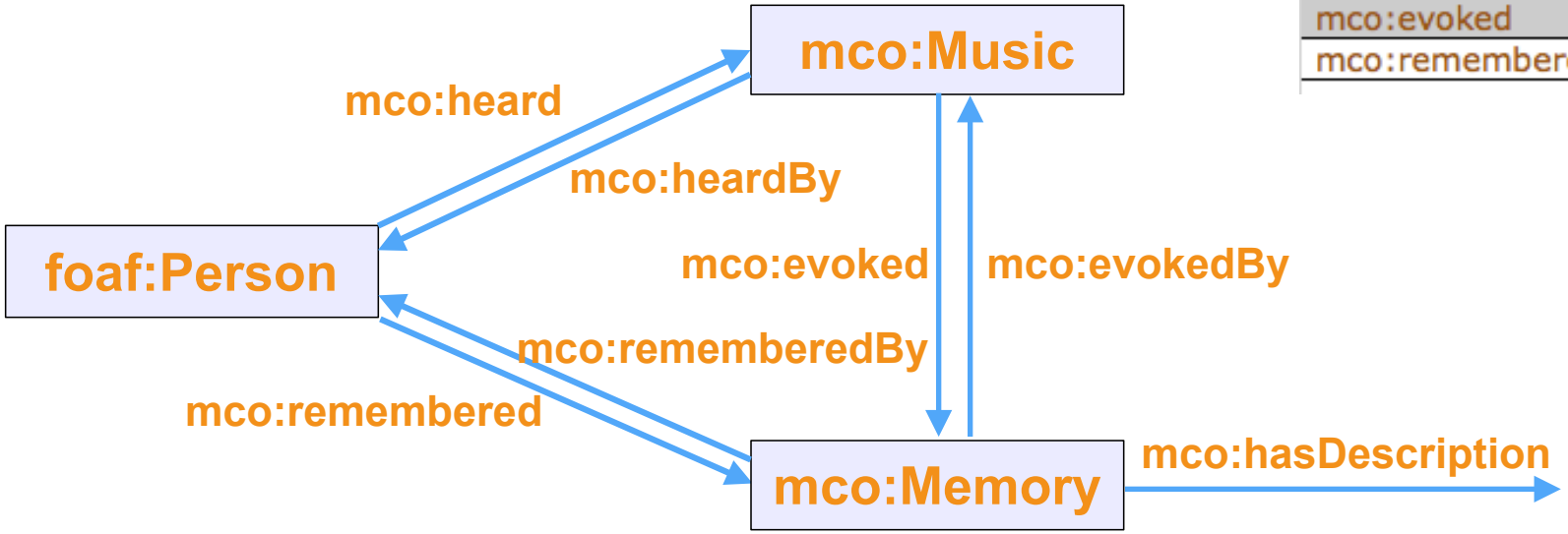
property	inverseProperty
mco:remembered	mco:rememberedBy
mco:heard	mco:heardBy
mco:evokedBy	mco:evoked



Let's get more information about the Memory object

```
select ?subject ?predicate
{
  ?subject ?predicate mco:Memory .
  FILTER (?predicate NOT IN (rdf:type)) .
}
```

subject	predicate
mco:hasYear	rdfs:domain
mco:hasLifetimePeriod	rdfs:domain
mco:hasEventType	rdfs:domain
mco:hasPlaceType	rdfs:domain
mco:rememberedBy	rdfs:domain
mco:hasDescription	rdfs:domain
mco:hasPersonType	rdfs:domain
mco:hasEmotion	rdfs:domain
mco:evokedBy	rdfs:domain
mco:evoked	rdfs:range
mco:remembered	rdfs:range



Why the use of FILTER in the previous query?

```
select ?subject ?predicate
{
  ?subject ?predicate mco:Memory .
  FILTER (?predicate NOT IN (rdf:type)) .
}
```

subject	predicate
mco:hasYear	rdfs:domain
mco:hasLifetimePeriod	rdfs:domain
mco:hasEventType	rdfs:domain
mco:hasPlaceType	rdfs:domain
mco:rememberedBy	rdfs:domain
mco:hasDescription	rdfs:domain
mco:hasPersonType	rdfs:domain
mco:hasEmotion	rdfs:domain
mco:evokedBy	rdfs:domain
mco:evoked	rdfs:range
mco:remembered	rdfs:range

```
select ?subject ?predicate
{
  ?subject ?predicate
mco:Memory .
```

An actual memory! →

1f803691-c46c-5420-a35d-953e10012c6a	rdf:type
751166dd-11b4-51af-a89a-9ae808c90e47	rdf:type
ec860e59-e5c7-59e6-9c42-31b5c098d86d	rdf:type
4e028343-1fe4-5e1c-a019-69a2fb66cc0a	rdf:type
60927456-ded4-5ef6-bf14-5a621bcff61f	rdf:type
mco:hasYear	rdfs:domain
mco:hasLifetimePeriod	rdfs:domain
mco:hasEventType	rdfs:domain
mco:hasPlaceType	rdfs:domain
286e91a8-9cbc-51f2-a791-d2bef9a917e9	rdf:type
fed7cfbb-2f7c-5e80-9da1-68183fb7ee2b	rdf:type
d3857ced-2002-55f2-ae32-f5cc07341eaa	rdf:type
c0ce795f-b159-5345-bd73-a2526770db7c	rdf:type
37d5c8df-abce-5c97-b342-c016a0caa7e3	rdf:type
d940ce73-6e5c-509d-b3d6-88f529a34067	rdf:type
b57ca779-fd55-5472-be9e-40ad149da38c	rdf:type
0e8a4805-2196-54f4-b93e-87d7722ba9d3	rdf:type

What can we say about the actual memories in the database?

```
# Get a list of actual predicates that are used
select DISTINCT ?predicate
{
  ?memory rdf:type mco:Memory ;
          ?predicate ?o .
}
```

predicate
rdf:type
mco:hasPersonType
mco:hasPlaceType
mco:rememberedBy
mco:evokedBy
mco:hasDescription
mco:hasEventType
mco:hasYear

Note that not all of the properties that we've defined are actually used

subject	predicate
mco:hasYear	rdfs:domain
~~mco:hasLifetimePeriod~~	~~rdfs:domain~~
mco:hasEventType	rdfs:domain
mco:hasPlaceType	rdfs:domain
mco:rememberedBy	rdfs:domain
mco:hasDescription	rdfs:domain
mco:hasPersonType	rdfs:domain
~~mco:hasEmotion~~	~~rdfs:domain~~
mco:evokedBy	rdfs:domain
mco:evoked	rdfs:range
mco:remembered	rdfs:range

Let's get some descriptions …

```
# Get memory descriptions
select ?desc
{
  ?memory rdf:type mco:Memory ;
          mco:hasDescription ?desc .
}
```

_:b46204399x32
_:b46204399x33
_:b46204399x34
_:b46204399x35
_:b46204399x36
_:b46204399x37
_:b46204399x38
_:b46204399x39
_:b46204399x40
_:b46204399x41
_:b46204399x42
_:b46204399x43
_:b46204399x44
_:b46204399x45
_:b46204399x46

What in the world are these things that begin with "_:b" ???

Blank nodes

Basically, they are just entities that we don't care about naming in any particular way

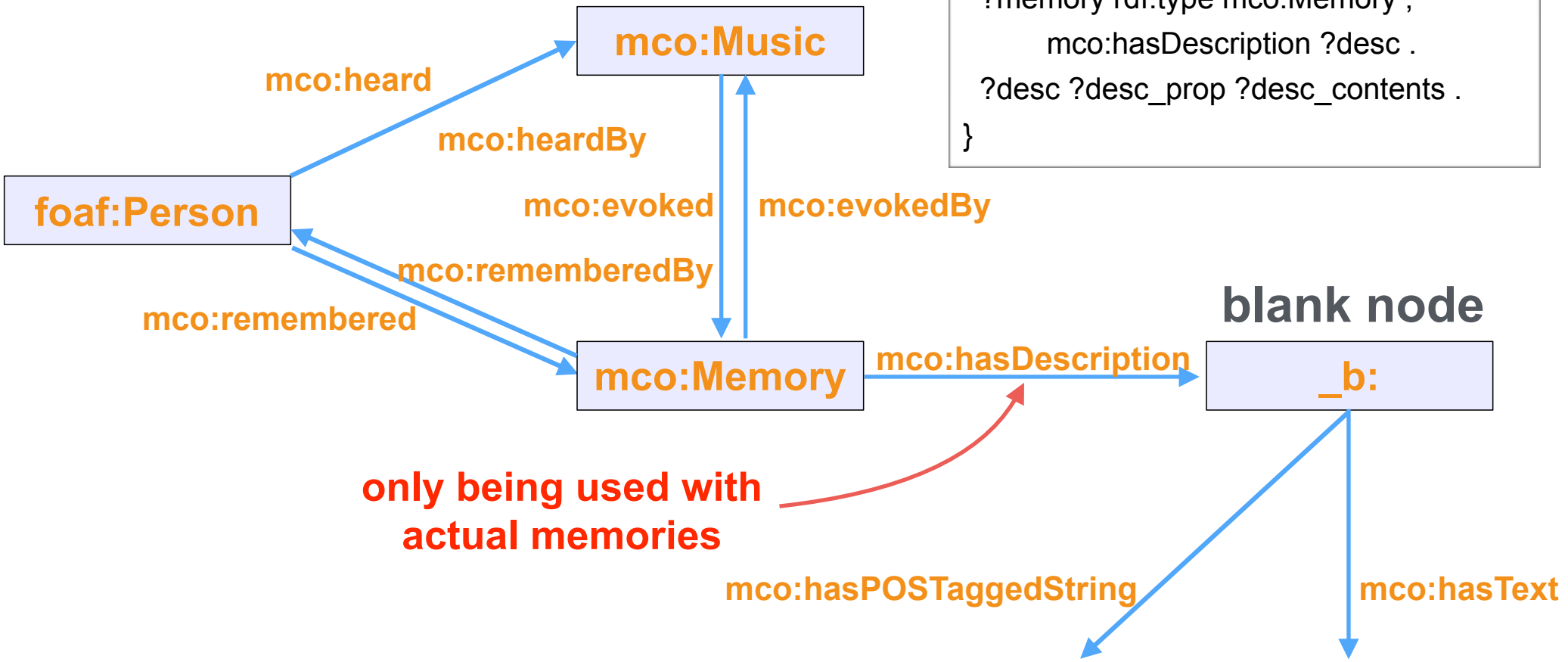
So let's elaborate our query to get something meaningful

```
# Get memory descriptions - Part 2
select ?desc ?desc_prop ?desc_contents
{
  ?memory rdf:type mco:Memory ;
          mco:hasDescription ?desc .
  ?desc ?desc_prop ?desc_contents .
}
```

desc	desc_prop	desc_contents
_:b46204399x1	rdf:type	mco:personDescription
_:b46204399x1	mco:hasText	"I associate this song with my girlfriend. She once explained to me that she does not like it, yet I happen to like it rather much. Once she told me \"damn it, now I'm going to like that song because I'll associate it with you.\""
_:b46204399x2	rdf:type	mco:lifetimePeriodDescription
_:b46204399x2	mco:hasText	"My sister was attending high school at this time, so I was rather familiar with 90's R&B Hits."
_:b46204399x3	rdf:type	mco:lifetimePeriodDescription
_:b46204399x3	mco:hasText	"I was taking a Gospel Choir course here at UC Davis."
_:b46204399x3	mco:hasPOSTaggedString	"I/PRP was/VBD taking/VBG a/DT Gospel/NNP Choir/NNP course/NN here/RB at/IN UC/NNP Davis/NNP ./. "
_:b46204399x4	rdf:type	mco:personDescription
_:b46204399x4	mco:hasText	"I thought of Clay Aiken... :/"
_:b46204399x5	rdf:type	mco:lifetimePeriodDescription
_:b46204399x5	mco:hasText	"This song came out when I was 11, I believe."
_:b46204399x5	mco:hasPOSTaggedString	"This/DT song/JJ came/NN out/IN when/WRB I/PRP was/VBD 11/CD ,/, I/PRP believe/VBP ./. "

Let's get more information about the Memory object

```
select ?desc ?desc_prop ?desc_contents
{
  ?memory rdf:type mco:Memory ;
          mco:hasDescription ?desc .
  ?desc ?desc_prop ?desc_contents .
}
```



mco:hasText	"I was taking a Gospel Choir course here at UC Davis."
mco:hasPOSTaggedString	"I/PRP was/VBD taking/VBG a/DT Gospel/NNP Choir/NNP course/NN here/RB at/IN UC/NNP Davis/NNP ./. "

POSTaggedString: a string tagged with part-of-speech labels