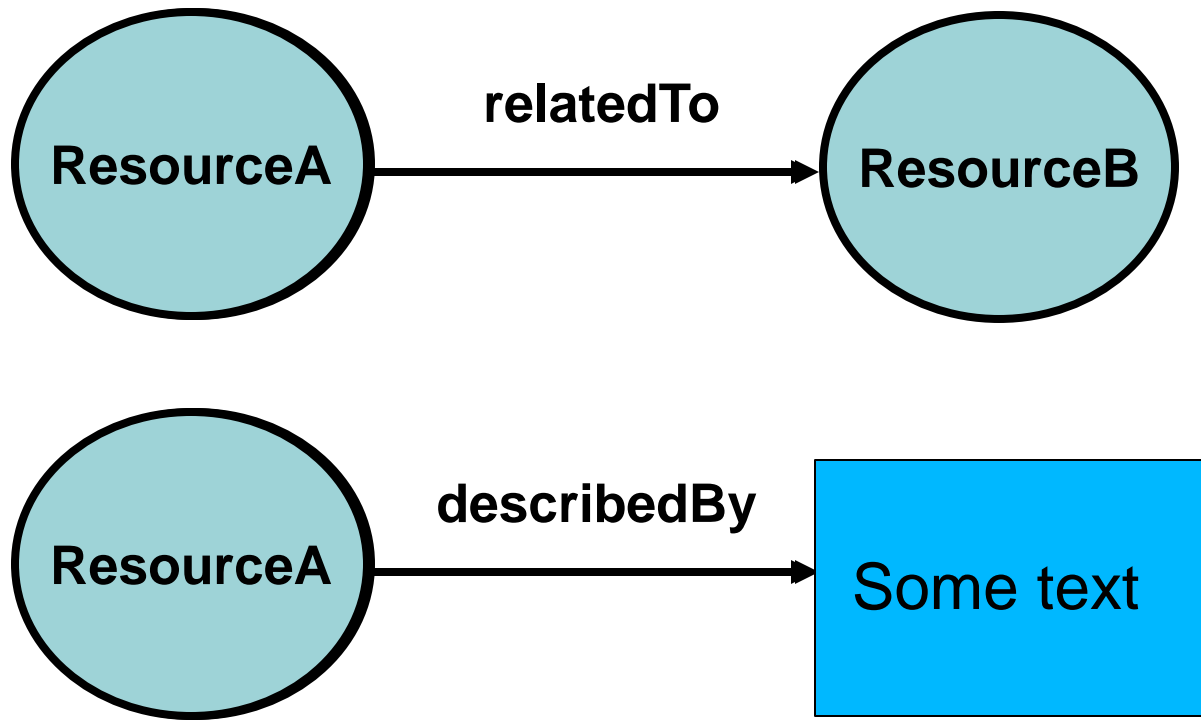




What Makes the Linked Data Approach Different



RDF – a grammar for the language of data



1. Describe resources using interrelated “statements” (“triples”).
2. Use URIs – unique, globally managed identifiers – as the “words” of statements.



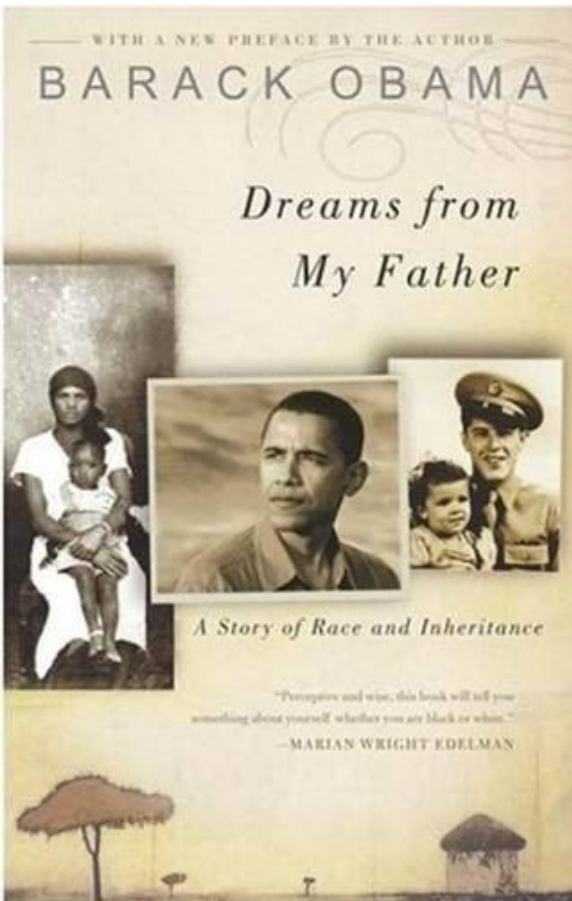
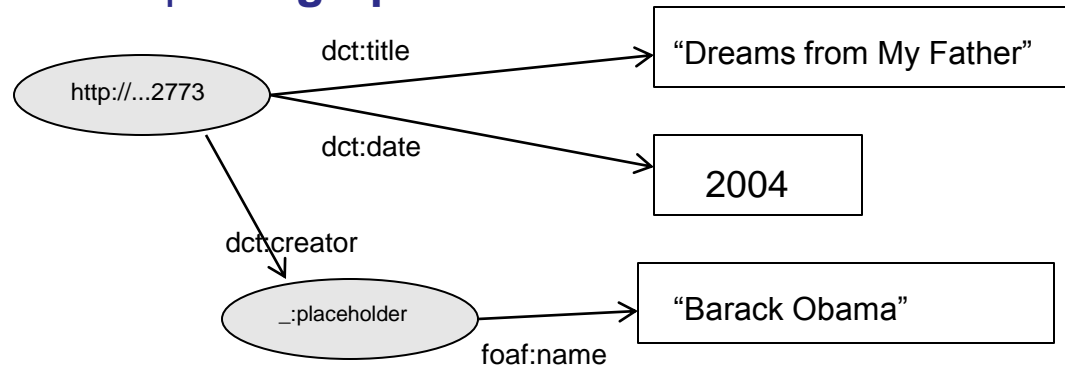
“Open World Mindset”

- “Closed” (“normal”) IT environments
 - Data sources carefully controlled.
 - Data formats “custom-defined” for an application.
- Linked data based on an “open world mindset”
 - Integrating data from the open Web
 - Systems designed to incorporate new information incrementally
 - By design, tolerance of incomplete information



Source A: About a book by Barack Obama

Each **triple** in the data corresponds to a **link** in a conceptual **graph**.

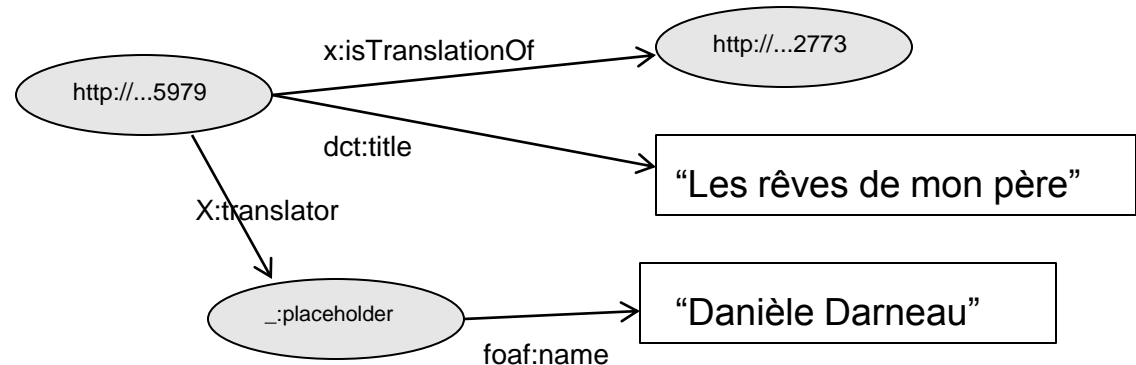
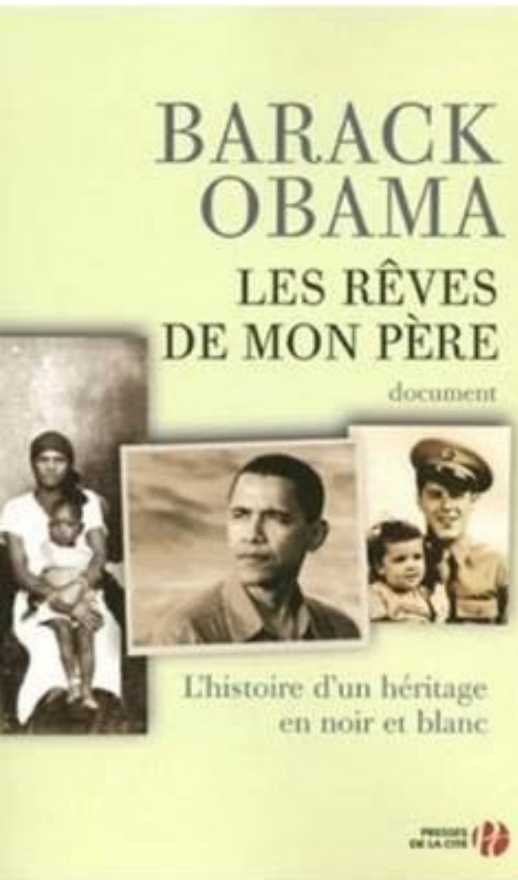


Each bit of information about the book is expressed in the data as a **triple** – a three-part “statement”.

http://../isbn/978-14000082773	dct:title	“Dreams from My Father”
http://../isbn/978-14000082773	x:published	“2004”
http://../isbn/978-14000082773	dct:creator	_:placeholder
_:placeholder	foaf:name	“Barack Obama”



Source B: About the French translation



http://../isbn/978-2258075979	x:isTranslationOf	http://../isbn/978-14000082773
http://../isbn/978-2258075979	dct:title	“Les rêves de mon père”
http://../isbn/978-2258075979	x:translator	_:placeholder
_:placeholder	foaf:name	“Danièle Darneau”



Merge the two data sources into one set of triples

http://../isbn/978-2258075979	x:isTranslationOf	http://../isbn/978-14000082773
http://../isbn/978-2258075979	dct:title	“Les rêves de mon père”
http://../isbn/978-2258075979	x:translator	_:placeholder
_:placeholder	foaf:name	“Danièle Darneau”
http://../isbn/978-14000082773	dct:title	“Dreams from My Father”
http://../isbn/978-14000082773	x:published	“2004”
http://../isbn/978-14000082773	dct:creator	_:placeholder
_:placeholder	foaf:name	“Barack Obama”

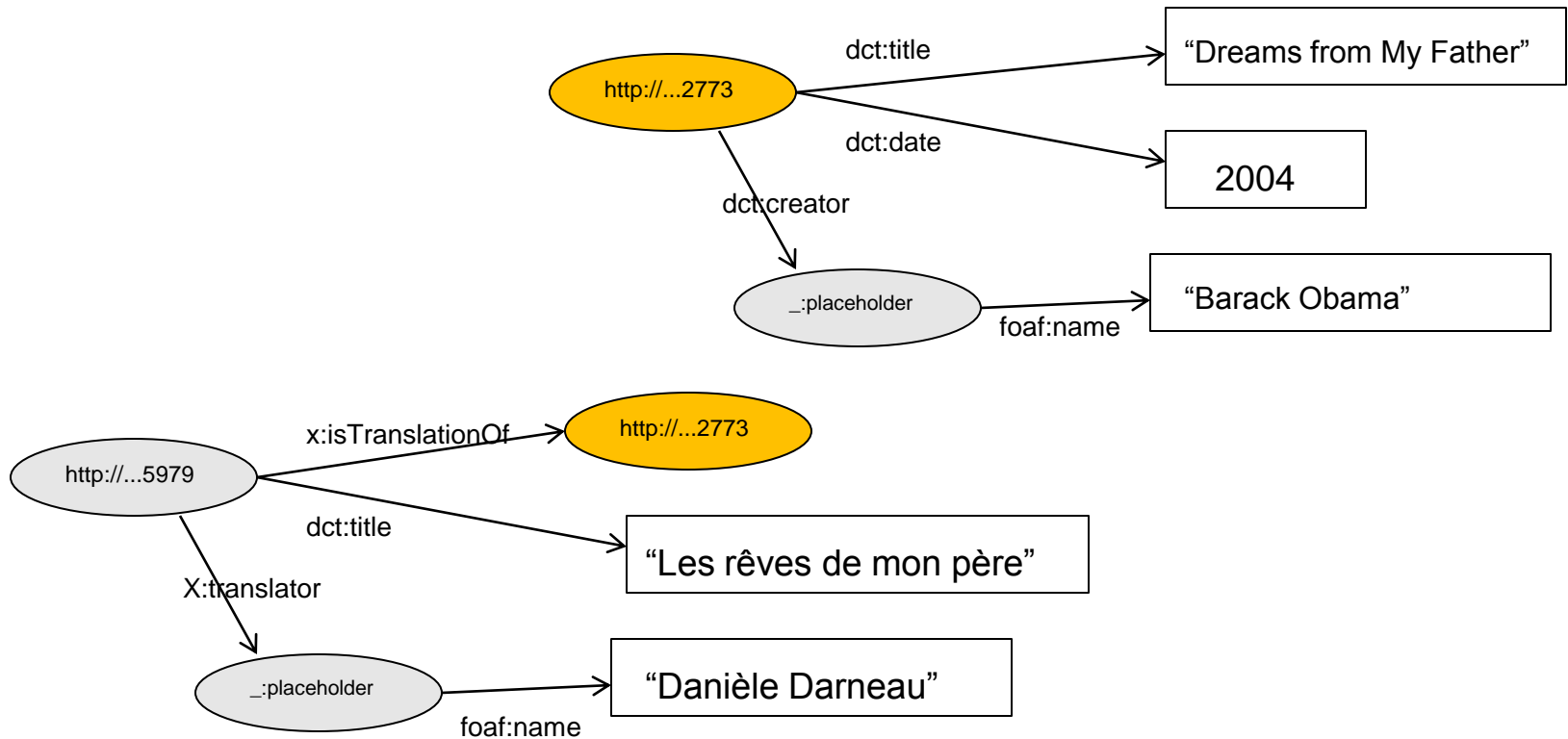


Software detects matching URIs...

http://../isbn/978-2258075979 x:isTranslationOf http://../isbn/978-14000082773
http://../isbn/978-2258075979 dct:title "Les rêves de mon père"
http://../isbn/978-2258075979 x:translator _:placeholder
_:placeholder foaf:name "Danièle Darneau"
http://../isbn/978-14000082773 dct:title "Dreams from My Father"
http://../isbn/978-14000082773 x:published "2004"
http://../isbn/978-14000082773 dct:creator _:placeholder
_:placeholder foaf:name "Barack Obama"

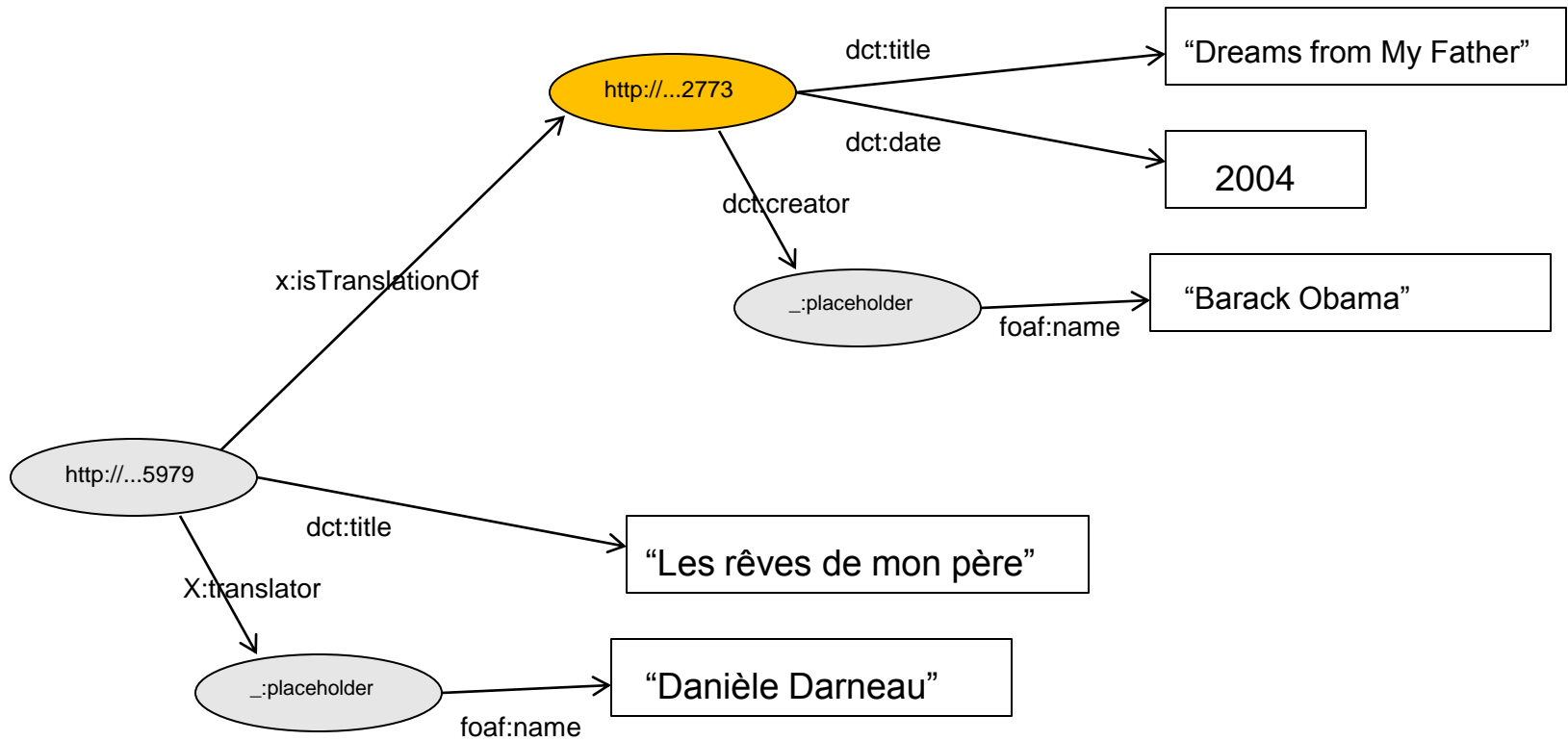


Software detects matching URIs...



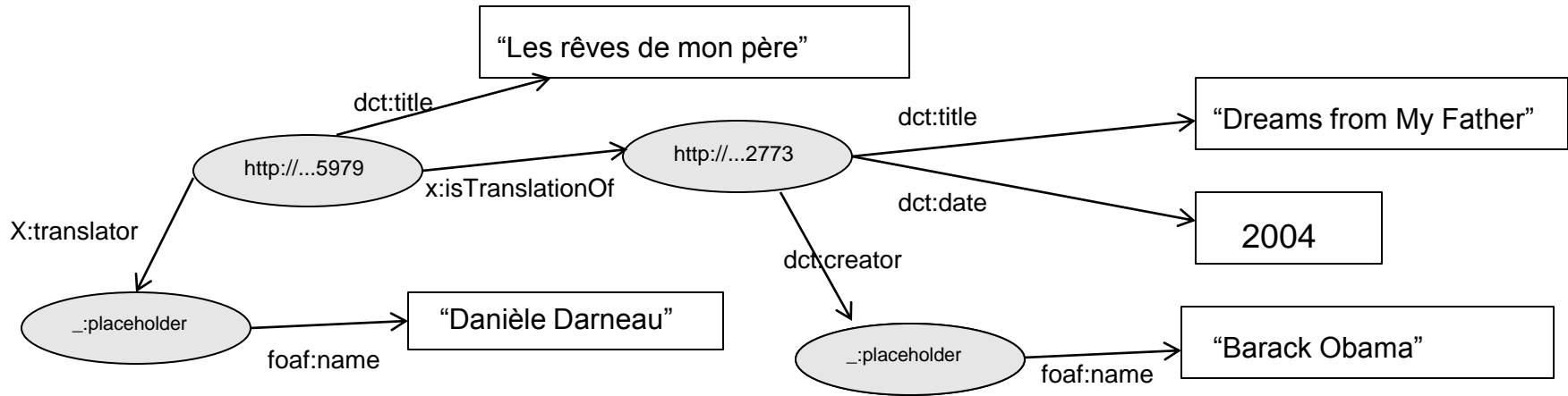


...and merges the data





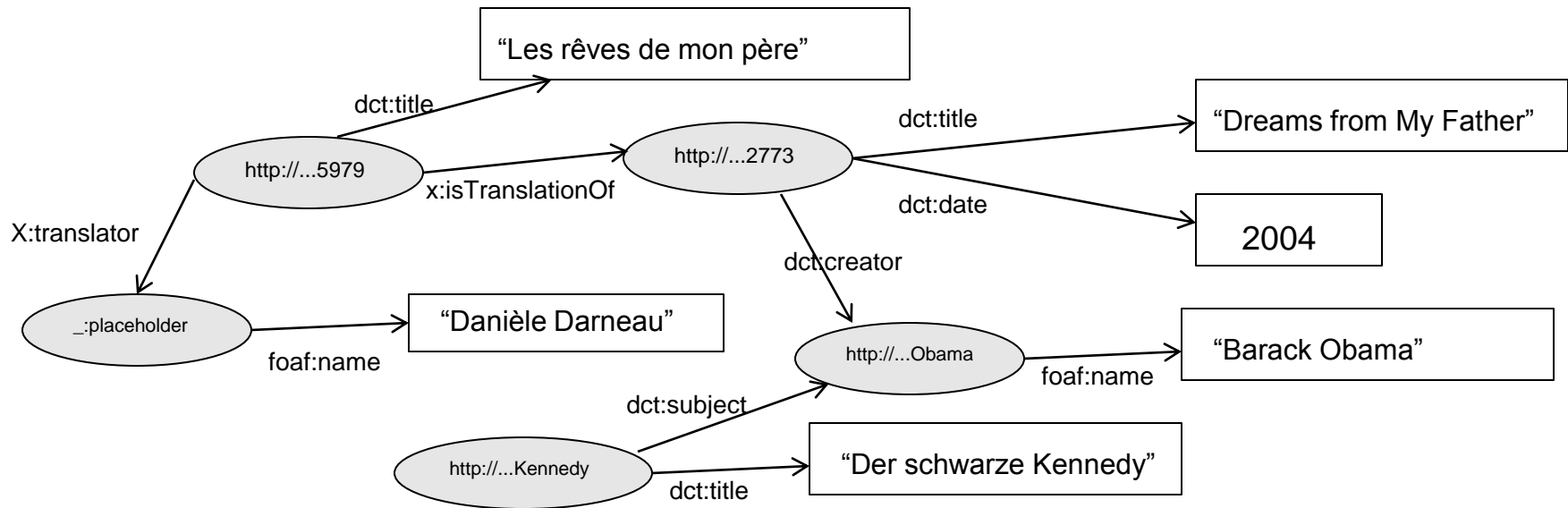
“Enrich” the data with a DBPedia URI identifying Barack Obama...



`http://dbpedia.org/resource/Barack_Obama` foaf:name “Barack Obama”



In Wikipedia, a book in German *about* Obama is linked to the DBPedia URI

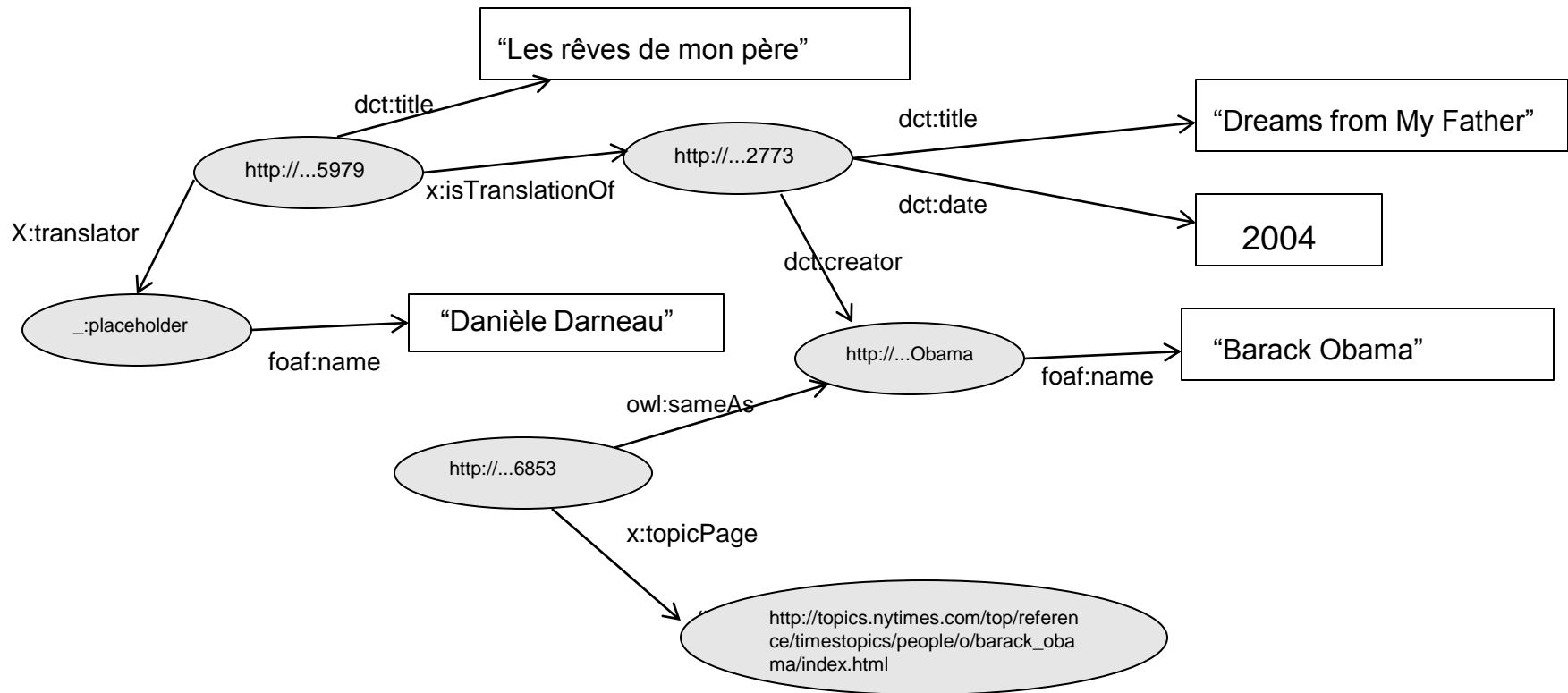


<code>http://dbpedia.org/...Kennedy¹</code>	<code>dct:subject</code>	<code>http://...Obama</code>
<code>http://dbpedia.org/...Kennedy</code>	<code>dct:title</code>	<code>"Der schwarze Kennedy"</code>

¹ Full URI: `http://dbpedia.org/resource/Barack_Obama_-_Der_schwarze_Kennedy`



New York Times' URI for Obama, linked to Dbpedia's, leads to a NYT Topic Page



`http://data.nytimes.com/...68531 owl:sameAs http://...Obama`

`http://data.nytimes.com/...6853 x:topicPage http://topics.nytimes.com/...`

¹ Full URI: `http://data.nytimes.com/47452218948077706853`



Example: BBC Wildlife Finder

Text only | Help

BBC Home News Sport Weather iPlayer TV Radio More... Search

HUMBOLDT SQUID (DOSIDICUS GIGAS)

Wildlife Finder > Animals > Humboldt squid



Copyright 2009 photolibary.com

Humboldt squid are found in the warm waters of the Eastern Pacific Ocean, and cover a range that expands as the waters are warmed by El Niño. These large squid migrate vertically (diel migration) to follow their prey, from depths of over 1,000m during the day to the surface waters at night. They capture their prey with their tentacles and suckers and rip it apart with their powerful beak. Like other cephalopods, Humboldt squid can change colour, flashing bright red when angered or excited - giving rise to their name 'the red devil'.

INTRODUCTION

Humboldt squid overview.

- Red devils**
Deadly 60
Steve Backshall goes face to face with a monster of the deep, the Humboldt squid.
- Pack attack**
Life
Humboldt squid signal their combined attack.
- Humboldt squid**
Last Chance to See
A population explosion is changing the balance of the coastal Pacific.

FEATURED IN THE FOLLOWING TV PROGRAMMES

CATCH UP ARCHIVED ARCHIVED

FEATURED IN THE FOLLOWING COLLECTIONS

The wildlife of Life



Humboldt Squid page, pulled together from a diversity of Linked Data sources

FEATURED IN THE FOLLOWING TV PROGRAMMES

CATCH UP



Last Chance to See: Blue Whale

[Watch now](#)

ARCHIVED



Deadly 60: Baja California, Mexico

ARCHIVED



Life: Creatures of the Deep

BBC TV Documentary

FEATURED IN THE FOLLOWING COLLECTIONS



The wildlife of Life

In autumn 2009, a major new series brought us life as we've never seen it before.

EARTH NEWS>

- San Diego menaced by jumbo squid
- Rise in CO2 affects jumbo squid
- Diving with hunting squid

BBC News item

ABOUT THE HUMBOLDT SQUID

The Humboldt Squid (*Dosidicus gigas*), also known as Jumbo Squid, Jumbo Flying Squid, or Diablo Rojo (Spanish for Red Devil), is a large, predatory squid found in the waters of the Humboldt Current in the Eastern Pacific Ocean. They are most commonly found at depths of 200–700 metres (660–2,300 ft), from Tierra del Fuego to California. Recent findings suggest the range of this species is spreading north into the waters of Oregon, Washington, British Columbia, and Alaska. Though they usually prefer deep water, between 1,000 and 1,500 squid washed up on the Long Beach Peninsula in southwest Washington in the fall of 2004. They have also ventured into Puget Sound.

Read more at [Wikipedia](#)

Wikipedia

This entry is from Wikipedia, the user-contributed encyclopedia. If you find the content in the 'About' section factually incorrect, defamatory or highly offensive you can edit this article at Wikipedia. For more information on our use of Wikipedia please read our FAQ.

SCIENTIFIC CLASSIFICATION

- Kingdom: Animal (animalia)
- Phylum: Mollusca
- Class: Cephalopod (Cephalopoda)
- Order: Squid (Teuthida)
- Family: Ommastrephidae
- Genus: *Dosidicus*
- Species: **Humboldt Squid (*gigas*)**

COMMON NAMES

- Jumbo flying squid
- Jumbo squid
- Red devil

WAYS OF LIFE

- Adapted to swimming
- Camouflage
- Carnivorous
- Egg layer
- Migration
- Nocturnal
- Pack-hunter
- Predator
- Social
- Spawning
- Visual communication

Animal Diversity Web:
Nocturnal way of life

Adaptation data provided by Animal Diversity Web

WHERE CAN I SEE THEM?

They can be found in the following habitats:

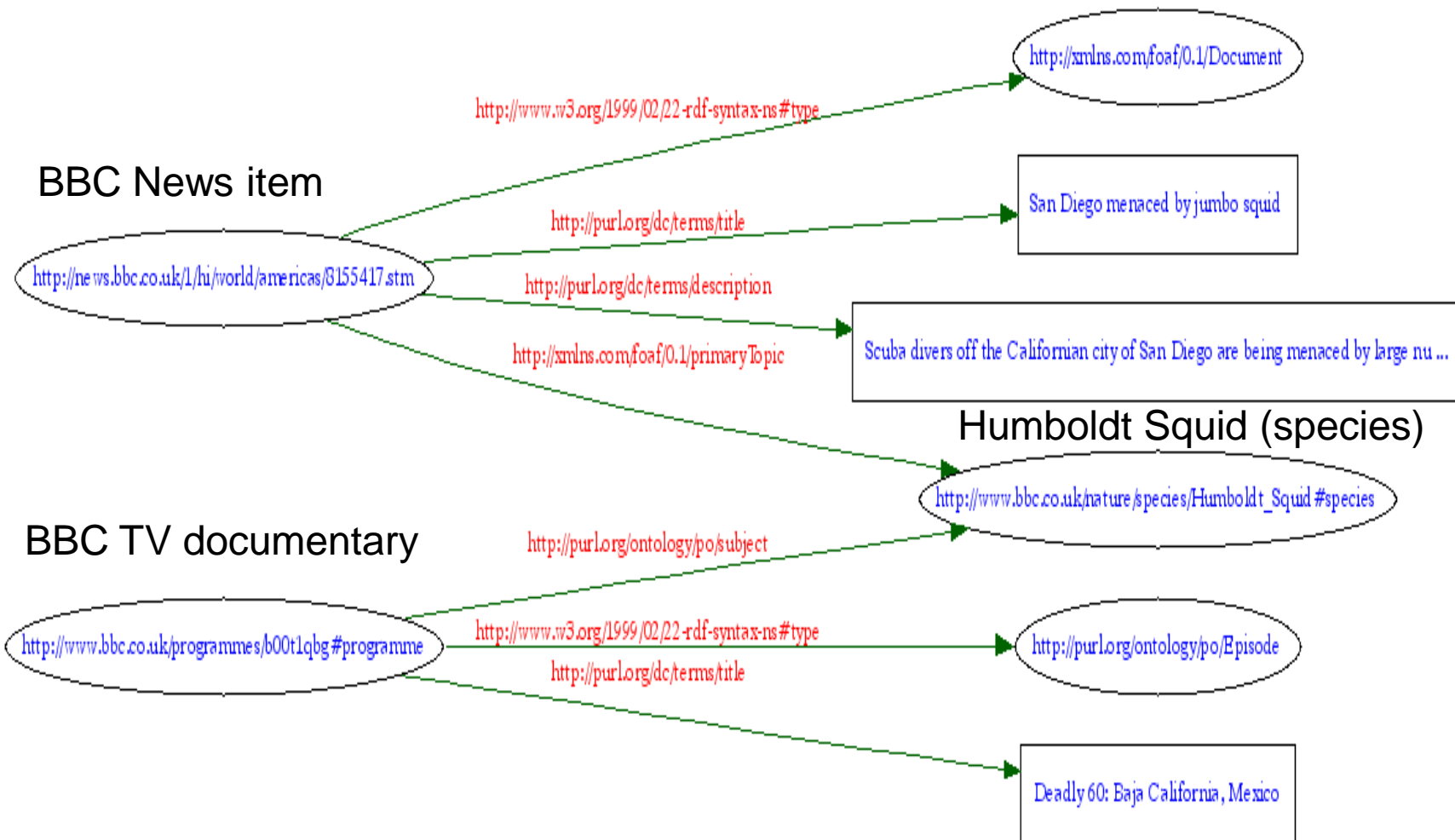
- Deep ocean
- Open ocean

ELSEWHERE ON THE WEB

- Animal Diversity Web (animaldiversity.ummz.umich.edu)

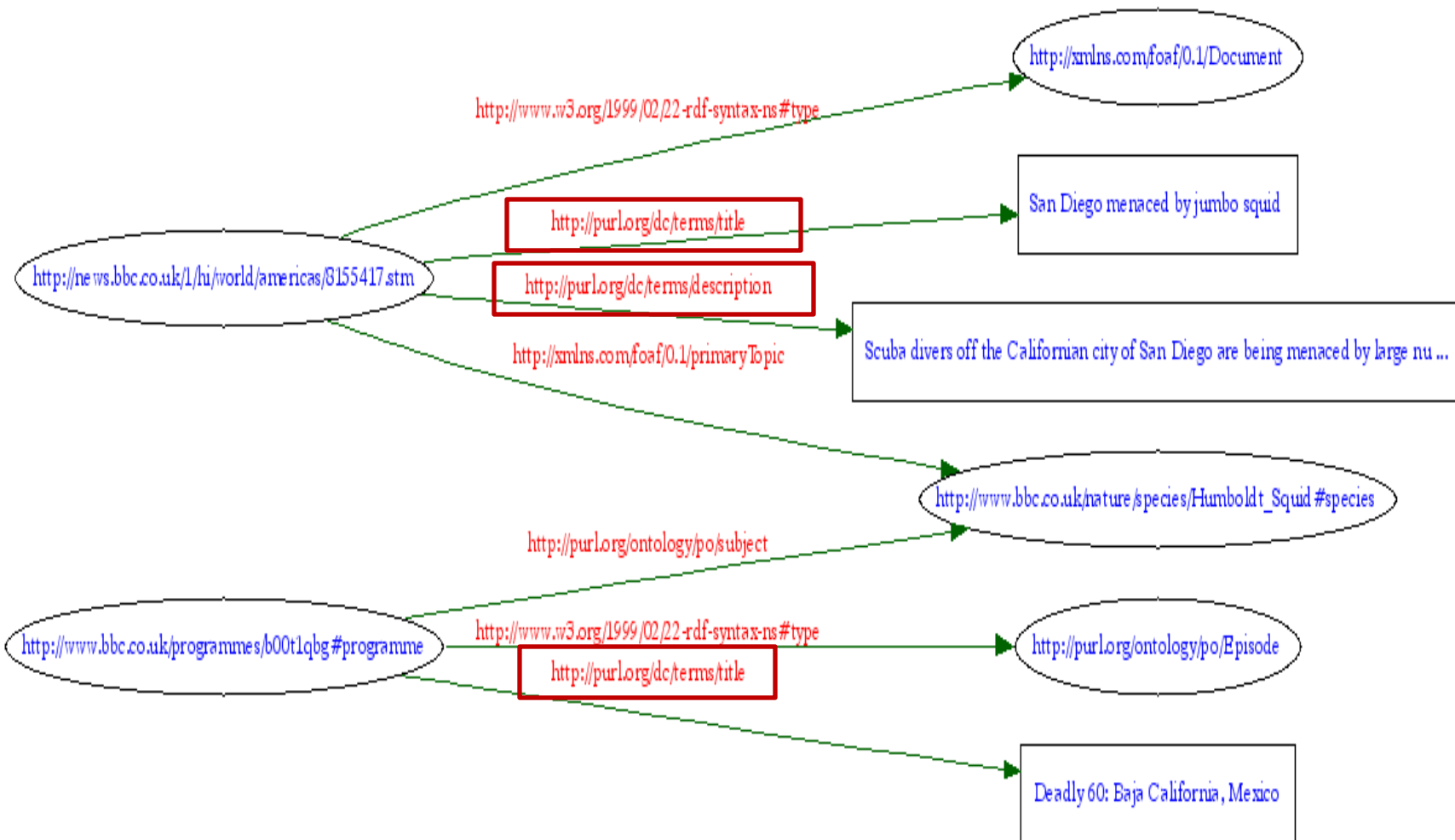


“Under the hood” of the Squid page, triples use URIs to make connections...



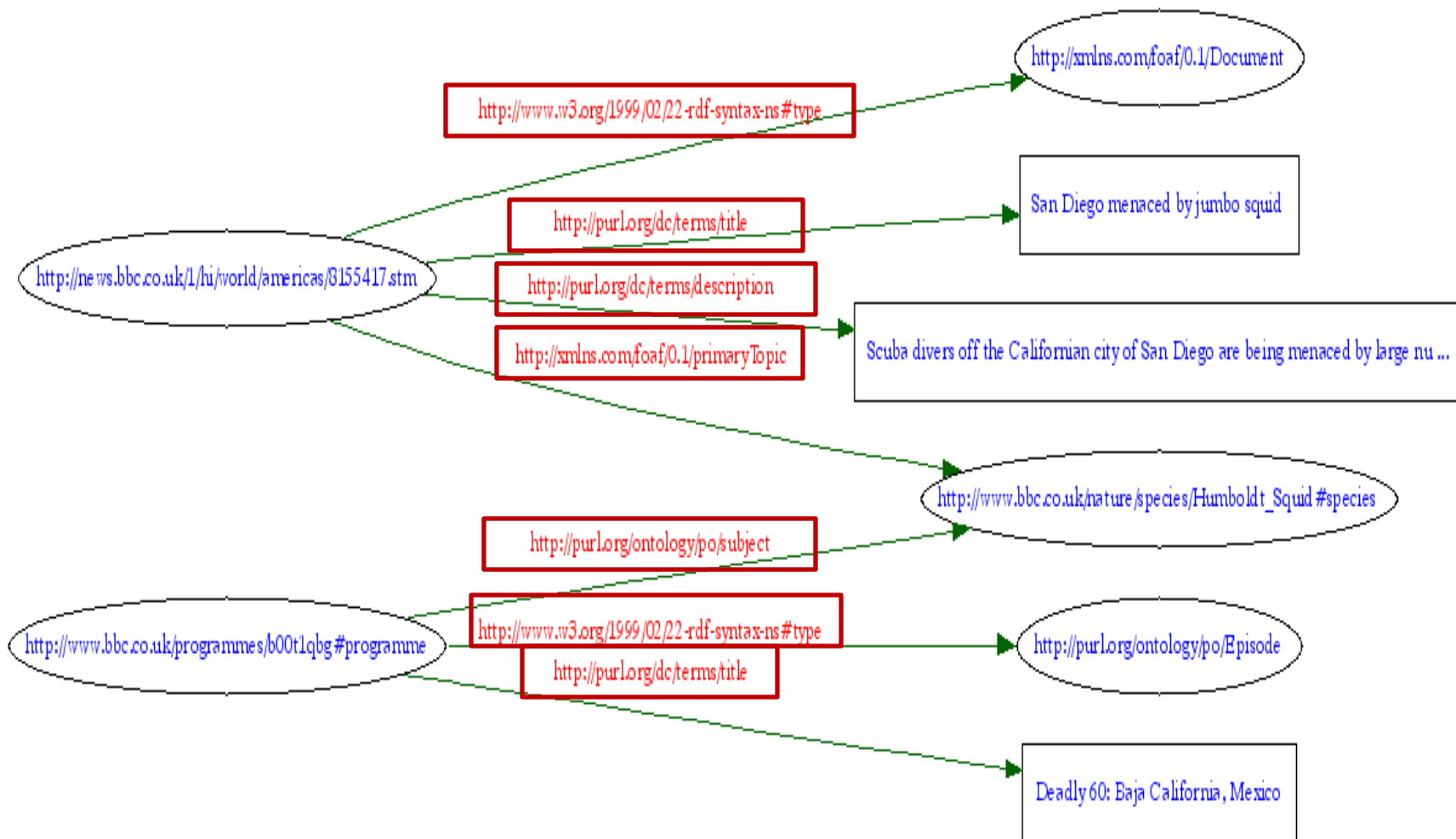


Many basic relations are Dublin Core “predicates”





Or mappable equivalents of Dublin Core predicates





Using triples about many animals to pull together a Web page about “nocturnal” wildlife...

Humboldt Squid

has “way of life”

“Nocturnal”

http://www.bbc.co.uk/nature/species/Humboldt_Squid#species

<http://purl.org/ontology/wo/adaptation>

<http://www.bbc.co.uk/nature/adaptations/Nocturnality#adaptation>

Text only | Help

BBC Home News Sport Weather iPlayer TV Radio More... Search

NOCTURNAL

Wildlife Finder > Adaptations > Nocturnal



Nocturnal animals are primarily active at night rather than during daylight hours. There are all sorts of reasons why this behaviour might be a good idea. In hotter places such as the tropics, it's cooler at night. If you're a bat, then your ancestors took to the night skies to avoid competition for resources from birds. And, of course, it's easier to hide from predators under cover of darkness.

Edwin Glasberg, naturepl.com

INTRODUCTION

Nocturnal overview.

- Night vision**
Nature's Calendar
Mike Dilger gets a close up view of the nightjar's nocturnal adaptations.
- Night fishing**
Natural World
Nocturnal tawny owls are caught fishing on camera for the first time.
- Old big eyes**
Cousins
Tarsiers are nocturnal, but their big eyes signify this wasn't always so.
- Village hunter**
The Life of Mammals
Danger lurks in the dark of an Indian village as leopards scan for prey.
- Night cover**
Natural World
Darkness provides the best opportunity for a hunting leopard.

FEATURED IN THE FOLLOWING TV PROGRAMMES

ARCHIVED ARCHIVED ARCHIVED

OTHER BEHAVIOURAL PATTERN ADAPTATIONS

- Air plant