

# The Semantic Web : A first step into the arena

... for a 30-minute fight.



**Semantic  
Web**



# Round #1

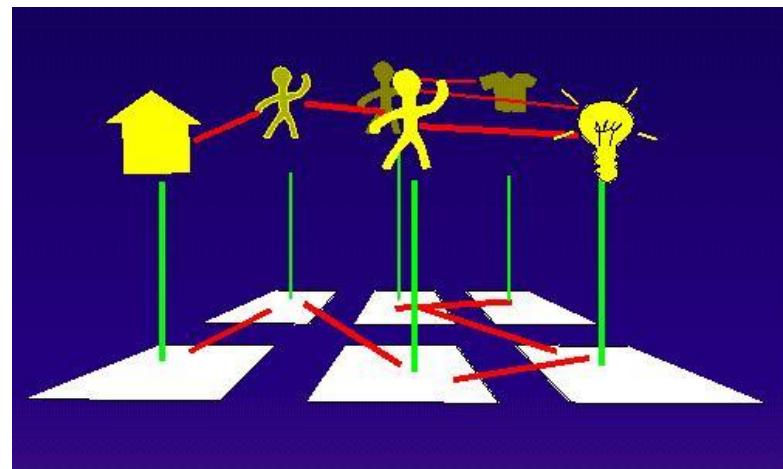
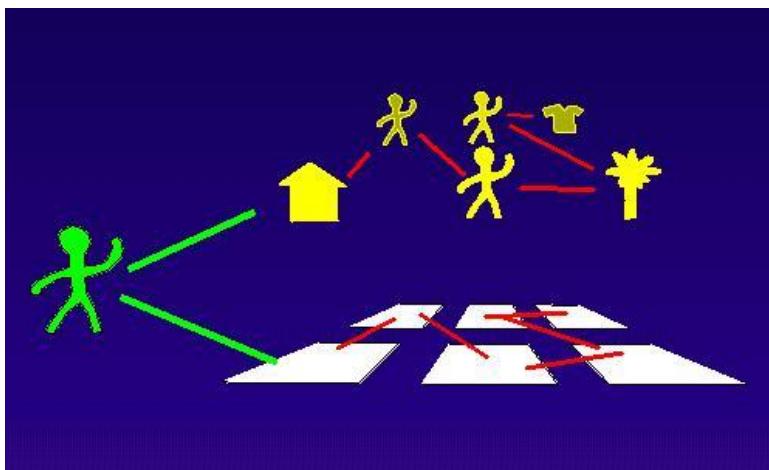
The Semantic Web is not a new idea

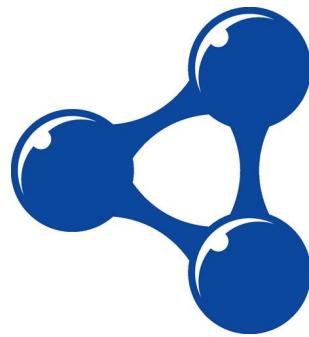


**Tim Berners-Lee**

First International Conference WWW (1994)

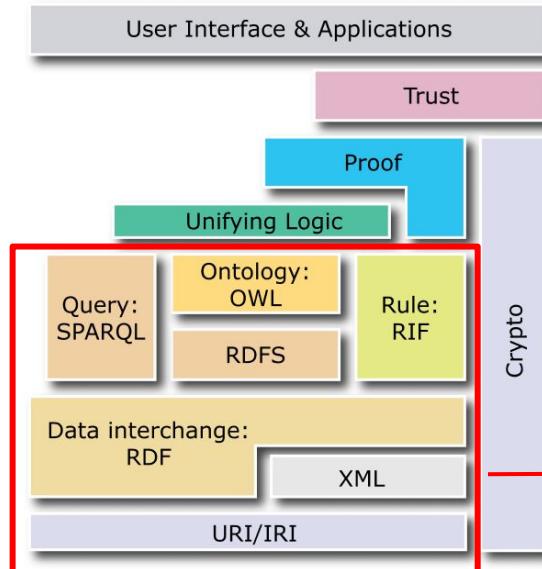
**Linking data on the Web to real-world entities in a machine-readable way (and not only documents)**





# 1997

First working draft of the **RDF** recommandation (W3C)



# 1998

Semantic “layer cake” : roadmap and technological stack of the SW

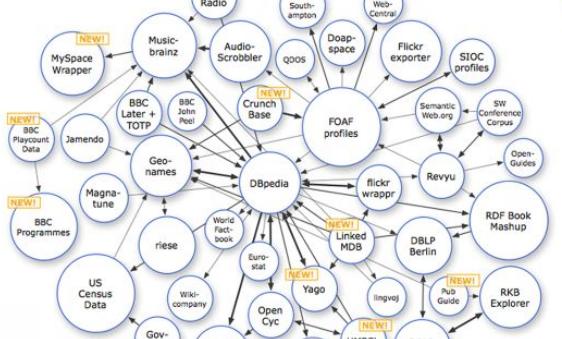
Already standardized or being standardized by

**W3C**<sup>®</sup>

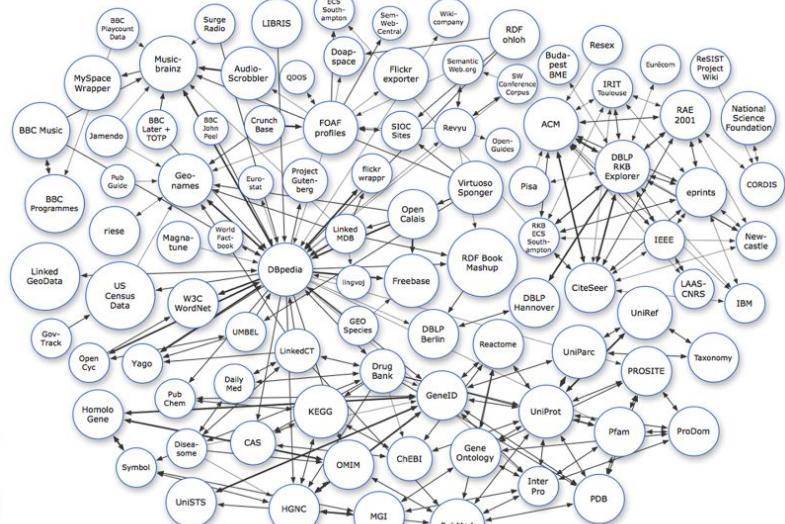
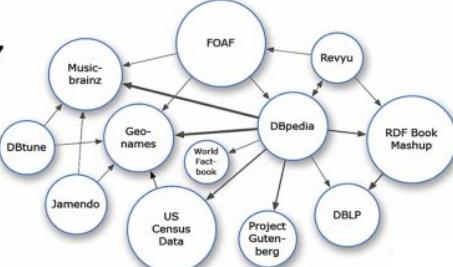
July 2009

# The Linked Open Data Cloud (2007-2009)

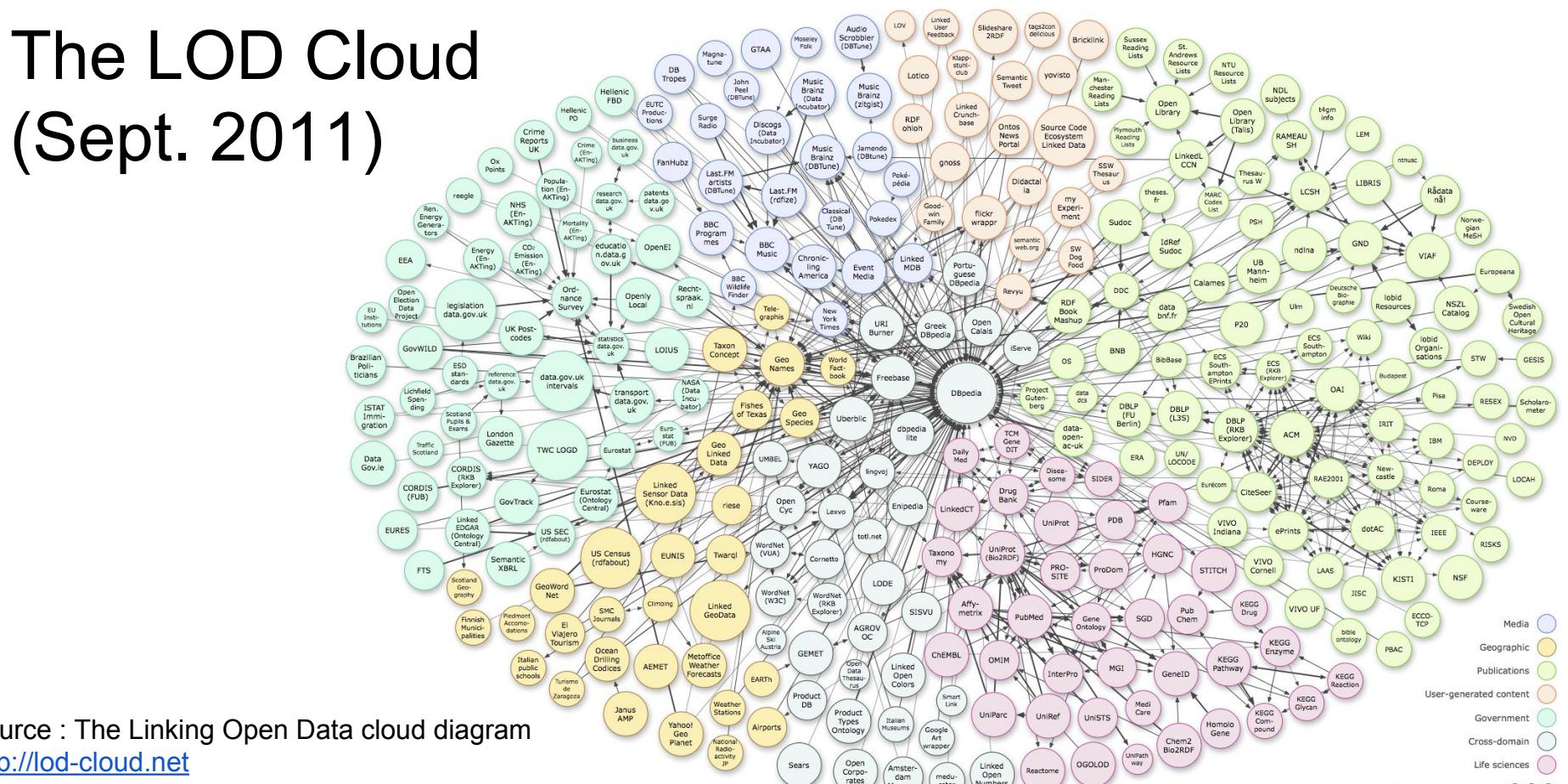
September 2008



May 2007



# The LOD Cloud (Sept. 2011)



Source : The Linking Open Data cloud diagram  
<http://lod-cloud.net>

As of September 2011



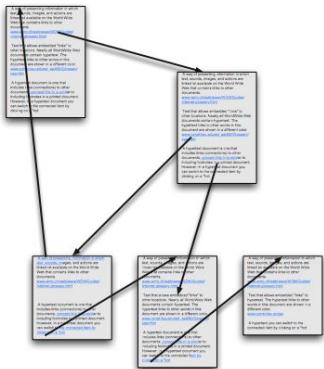


# Round #2

The Semantic Web is not a brand new Web

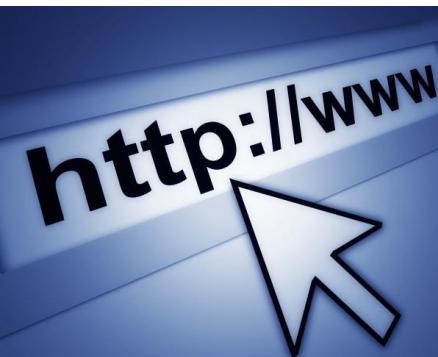
# Principles of the Web of Documents

1 principle



The hypertext

1 protocol



HTTP

1 identification mechanism



URI

1 “language” (syntax)

A close-up view of a computer screen displaying a portion of an HTML document. The visible code includes the DOCTYPE declaration, the opening and closing tags for the html, head, and body elements, as well as meta tags for title, keywords, and description, and a link element for a stylesheet.

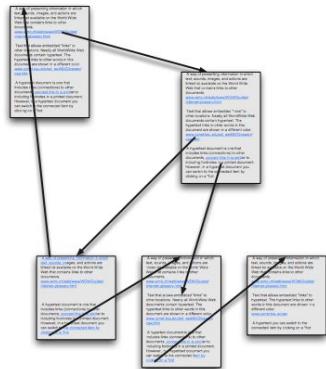
```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html>
  <head>
    <meta name="TITLE" content="HTML Test Document" />
    <meta name="KEYWORDS" content="HTML, Test Document" />
    <meta name="DESCRIPTION" content="A test document for HTML" />
    <link rel="stylesheet" type="text/css" href="test.css" />
  </head>
  <body bgcolor="#FFFFFF" width="100%">
```

HTML

# Principles of the Web of Data

Same architecture, but different model to represent information

1 principle



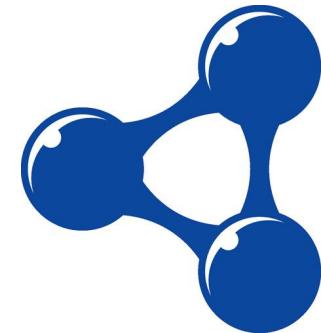
1 protocol



1 identification mechanism



1 “language” (grammar)



The hypertext

HTTP

URI

RDF



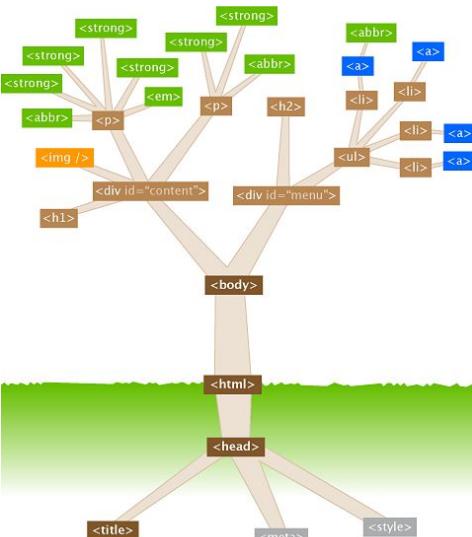
# Round #3

The Semantic Web is built on a different  
model... for machines

# HTML basic principles

**HTML = a format to encode documents (web pages)... for humans**

**1 model**



**Tree**

**1 grammar**



**DTD HTML**

**1 syntax**



**<h1>Heading 1</h1>**

**<h2>Heading 2</h2>**

**<h3>Heading 3</h3>**

**<h4>Heading 4</h4>**

**<h5>Heading 5</h5>**

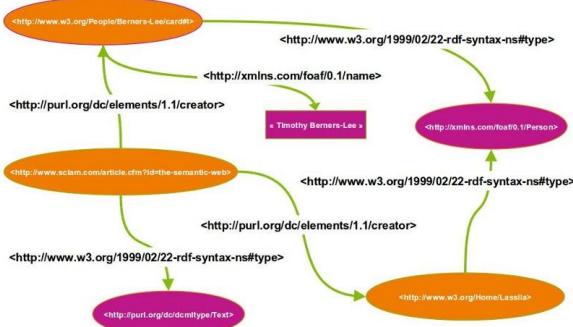
**HTML <tags>**



# RDF basic principles

RDF = a model to encode data on the Web... for machines

1 model



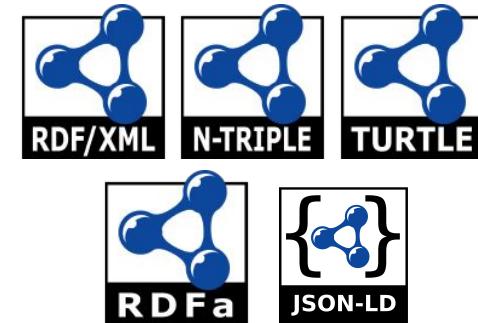
Graph

1 grammar



Triple

many syntaxes



RDF serializations

RDF/XML, N-Triple, Turtle  
RDFa, JSON-LD



# Round #4

Presentation vs Semantics

# Presentation

## Heading 1

## Heading 2

*Italics*

text text text text text text text text  
text text text text text text text text

[Link 1](#) - [Link 2](#)  
[Link 3](#)

# Semantics

## Article title

## Author

*Publication Date*

article content article content article  
content article content article content  
article content article content article  
content article content article content  
article content article content article

[Keyword 1](#) - [Keyword 2](#)  
[Copyright license](#)

# my-article

## Article title

Author

*Publication Date*

article content article content article  
content article content article content  
article content article content article  
content article content article content  
article content article content article

[Keyword 1](#) - [Keyword 2](#)

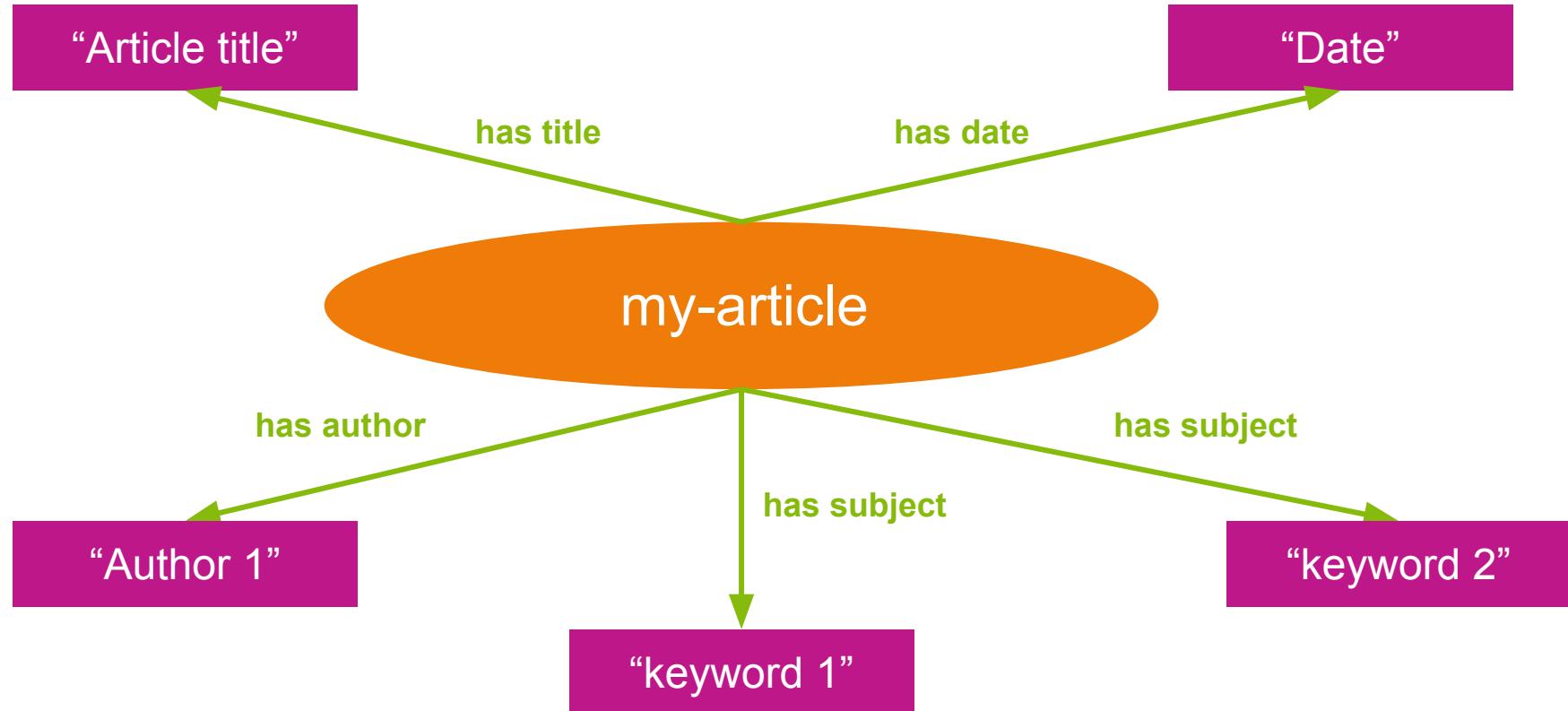
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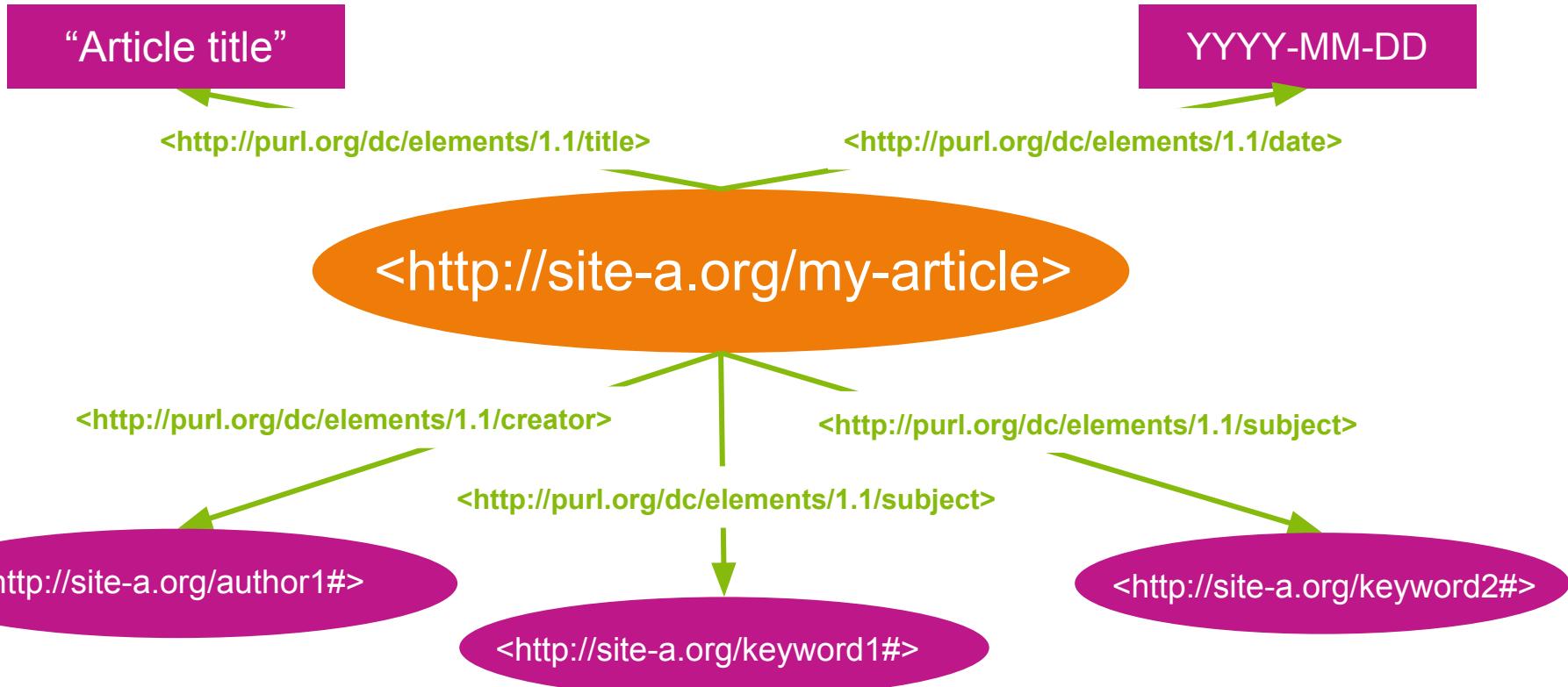
# Round #5

Expressing data in RDF

# Graph representation



# Graph representation (with URLs)



# RDF Triples

All the assertions made about the web resource **my-article** on **site-a.org**:

<<http://site-a.org/my-article>> <<http://purl.org/dc/elements/1.1/title>> "Article title"

<<http://site-a.org/my-article>> <<http://purl.org/dc/elements/1.1/date>> "YYYY-MM-DD"

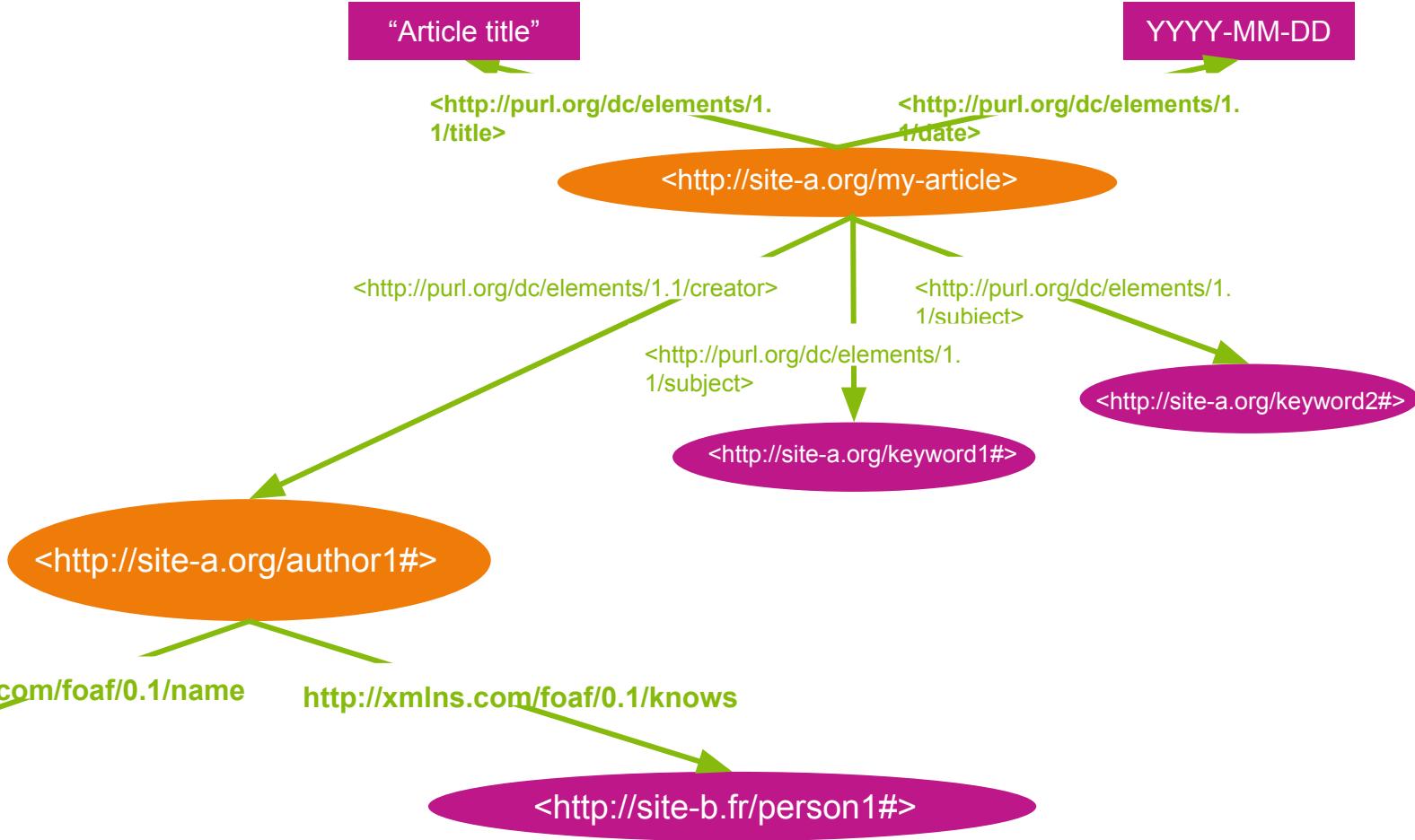
<<http://site-a.org/my-article>> <<http://purl.org/dc/elements/1.1/creator>> <<http://site-a.org/author1#>>

<<http://site-a.org/my-article>> <<http://purl.org/dc/elements/1.1/subject>> <<http://site-a.org/keyword1#>>

<<http://site-a.org/my-article>> <<http://purl.org/dc/elements/1.1/subject>> <<http://site-a.org/keyword2#>>

**Objects as literals = text strings** (title, date)

**Objects as URI = web identifiers for real-world entities/concepts** (author, keywords)



# Thank you!

## Are you K.O.?

... hope not because an ontology fight is coming up next



**Régis ROBINEAU**

Web coordinator. Pool Biblissima

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Twitter [@biblissima](https://twitter.com/biblissima)

# URL vs URI ?

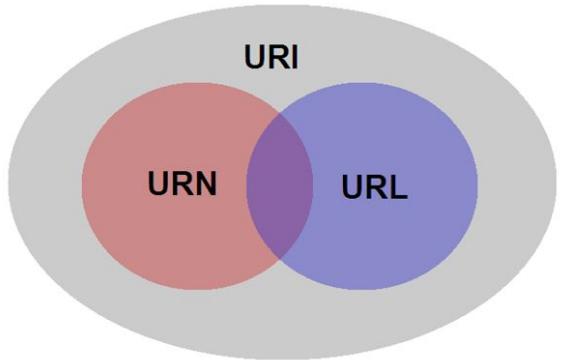


Image : Fabien Gandon

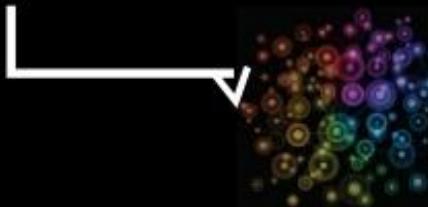


Fabien Gandon : [http://fr.slideshare.net/fabien\\_gandon](http://fr.slideshare.net/fabien_gandon)

URL → URI

identifier  
ce qui existe sur  
le web

<http://mon.site.fr>



<http://animaux.fr/mon-zebre>

