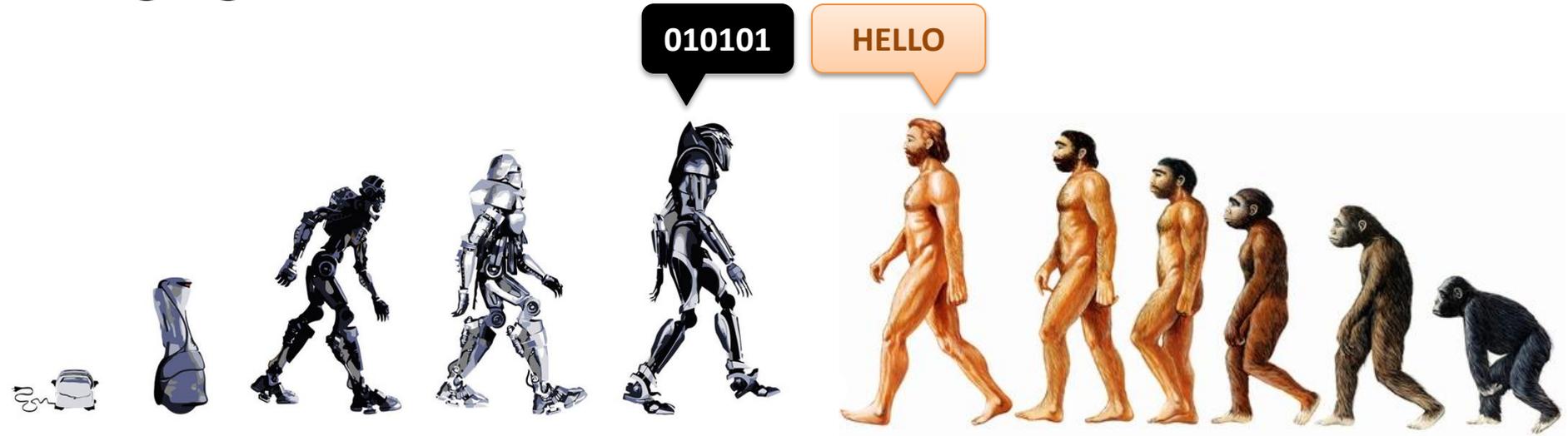
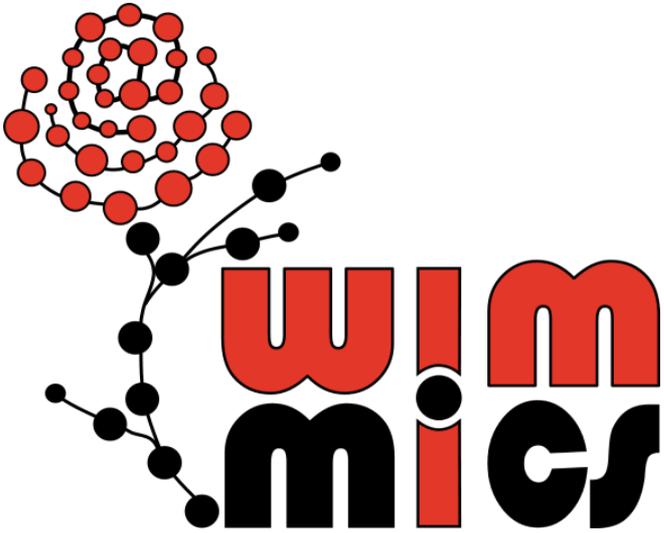


# bridging formal semantics and social semantics on the web



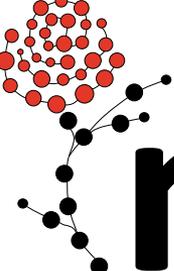
Fabien Gandon, @fabien\_gandon, <http://fabien.info>  
Leader of the Wimmics research team (INRIA, CNRS, Univ. Nice)  
W3C Advisory Committee Representative for INRIA



# Web-Instrumented Man-Machine Interactions, Communities, and Semantics

a joint research team between INRIA Sophia Antipolis – Méditerranée  
and I3S (CNRS and University Nice Sophia Antipolis).





# members

**Head (and INRIA contact):** Fabien Gandon

**Vice Head (and I3S contact):** Catherine Faron-Zucker

**Researchers:**

1. Michel Buffa, MdC (UNS)
2. Olivier Corby, CR1 (INRIA)
3. Alain Giboin, CR1 (INRIA)
4. Nhan Le Thanh, Pr. (UNS)
5. Isabelle Mirbel, MdC, HDR (UNS)
6. Peter Sander, Pr. (UNS)
7. David Simoncini, ATER (UNS)
8. Andrea G. B. Tettamanzi, Pr. (UNS)
9. Serena Villata, RP (INRIA)

**Post-doc:**

1. Jodi Schneider(ERCIM)
2. Elena Cabrio (CORDIS)

**Research engineers:**

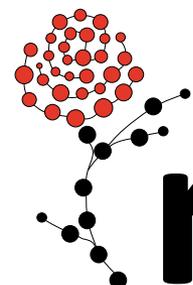
1. Christophe Desclaux (Boost your code)
2. Fuqi Song (Inria ADT)

**PhD students:**

1. Pavel Arapov, 3rd year (EDSTIC-I3S)
2. Amel Benothman, 1<sup>st</sup> year (I3S)
3. Franck Berthelon, 4th year (UNS-EDSTIC)
4. Ahlem Bouchahda, 3rd year (UNS-SupCom Tunis)
5. Khalil Riad Bouzidi, 3rd year (UNS-CSTB)
6. Papa Fary Diallo, 2nd year (AUF-UGB-INRIA)
7. Amosse Edouard (EDSTIC-I3S)
8. Corentin Follenfant, 3rd year (SAP)
9. Rakebul Hasan, 2nd year (INRIA ANR-Kolflow)
10. Maxime Lefrançois, 3rd year (EDSTIC-INRIA)
11. Nicolas Marie, 3rd year (Bell-ALU, INRIA)
12. Zide Meng, 1st year (INRIA ANR OCTOPUS)
13. Nguyen Thi Hoa Hue, 2nd year (Vietnam-CROUS)
14. Tuan Anh Pham (Vietnam-CampusFrance)
15. Oumy Seye, 2nd year, (INRIA Rose Dieng allocation)

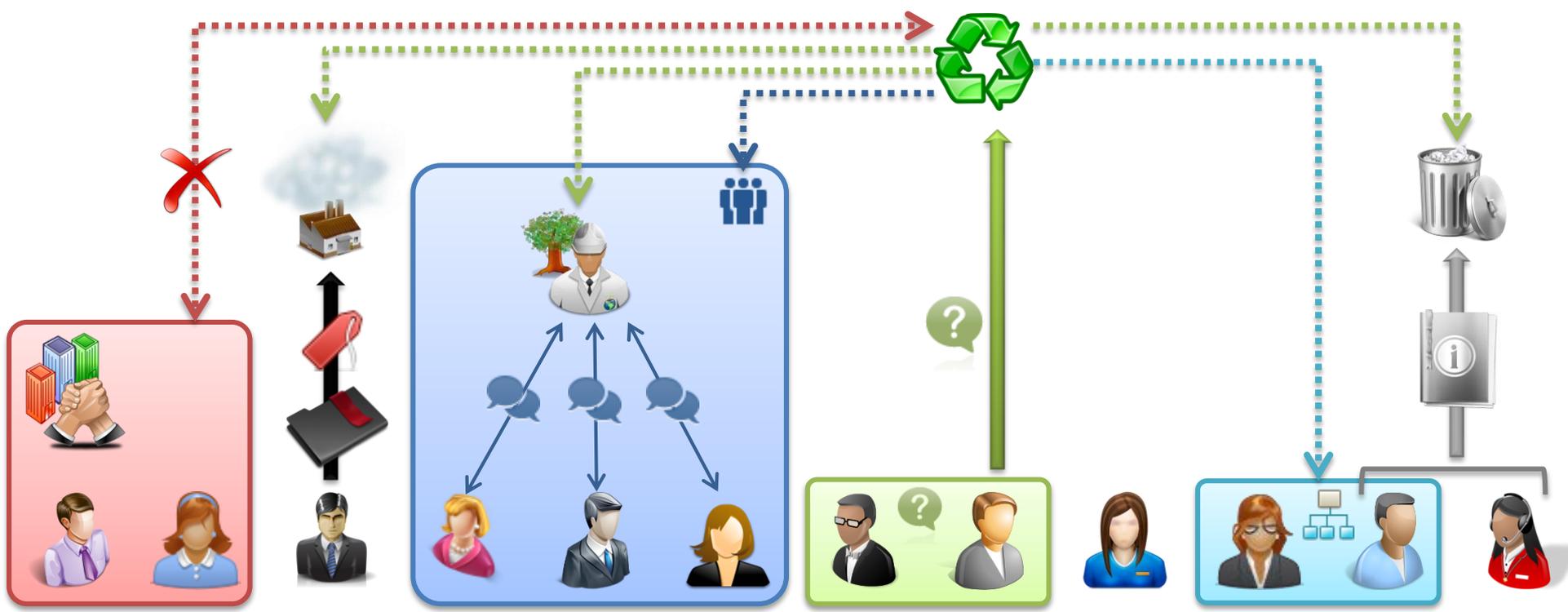
**Assistants:**

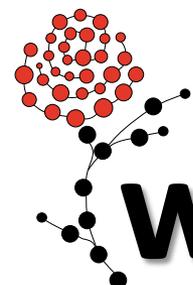
- Christine Foggia (INRIA)
- Magali Richir (I3S)



# research problem

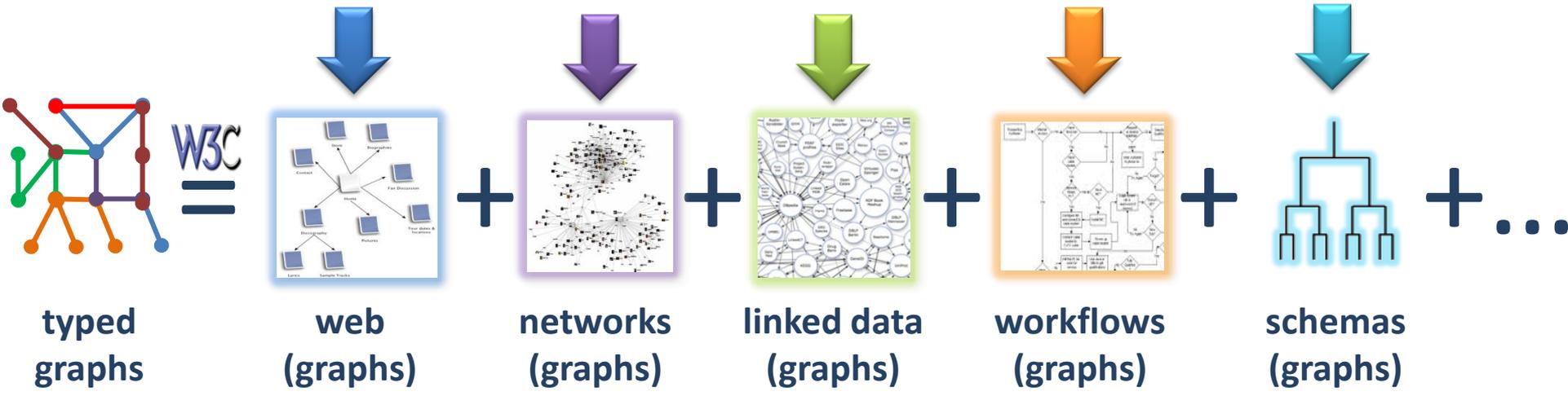
**socio-semantic networks: combining formal semantics and social semantics on the web**

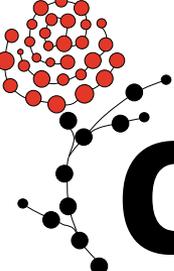




# web landscape and graphs

(meta)data of the relations and the resources of the web

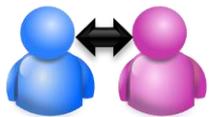




# challenge

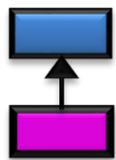
typed graphs to analyze, model, formalize and implement social semantic web applications for epistemic communities

## ① multidisciplinary approach for analyzing and modeling



- the many aspects of intertwined information systems
- communities of users and their interactions

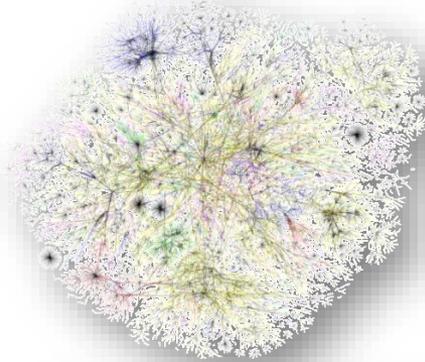
## ② formalizing and reasoning on these models using typed graphs



- new analysis tools and indicators
- new functionalities and better management

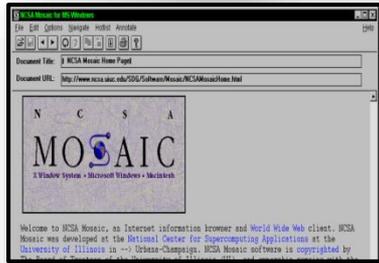
**<background\_knowledge>**





internet

$n \leftrightarrow n$



classical web

$1 \leftrightarrow n$



wiki, ( $\mu$ )blog, forum, etc.

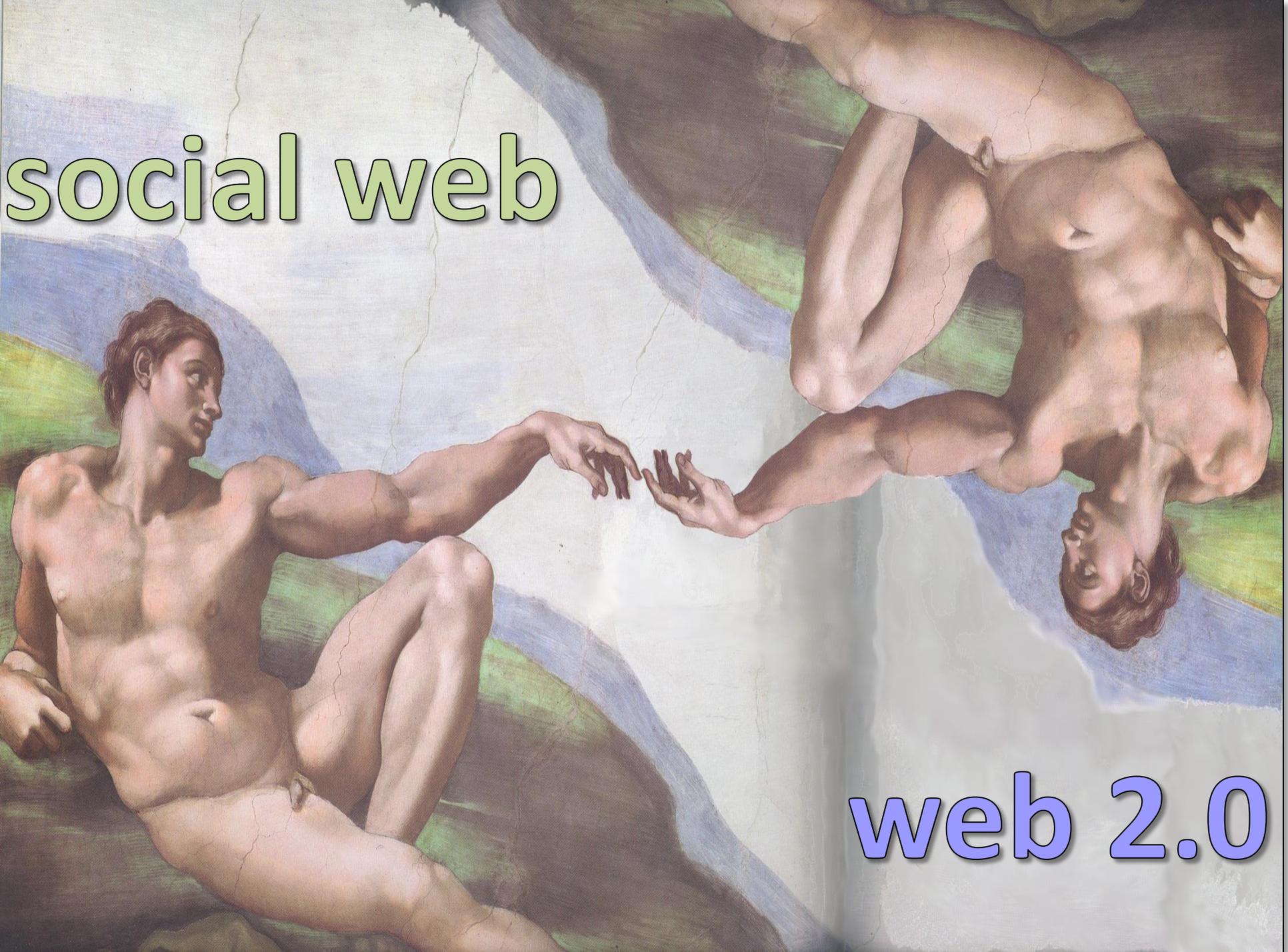
$n \leftrightarrow n$

Ward Cunningham, 94



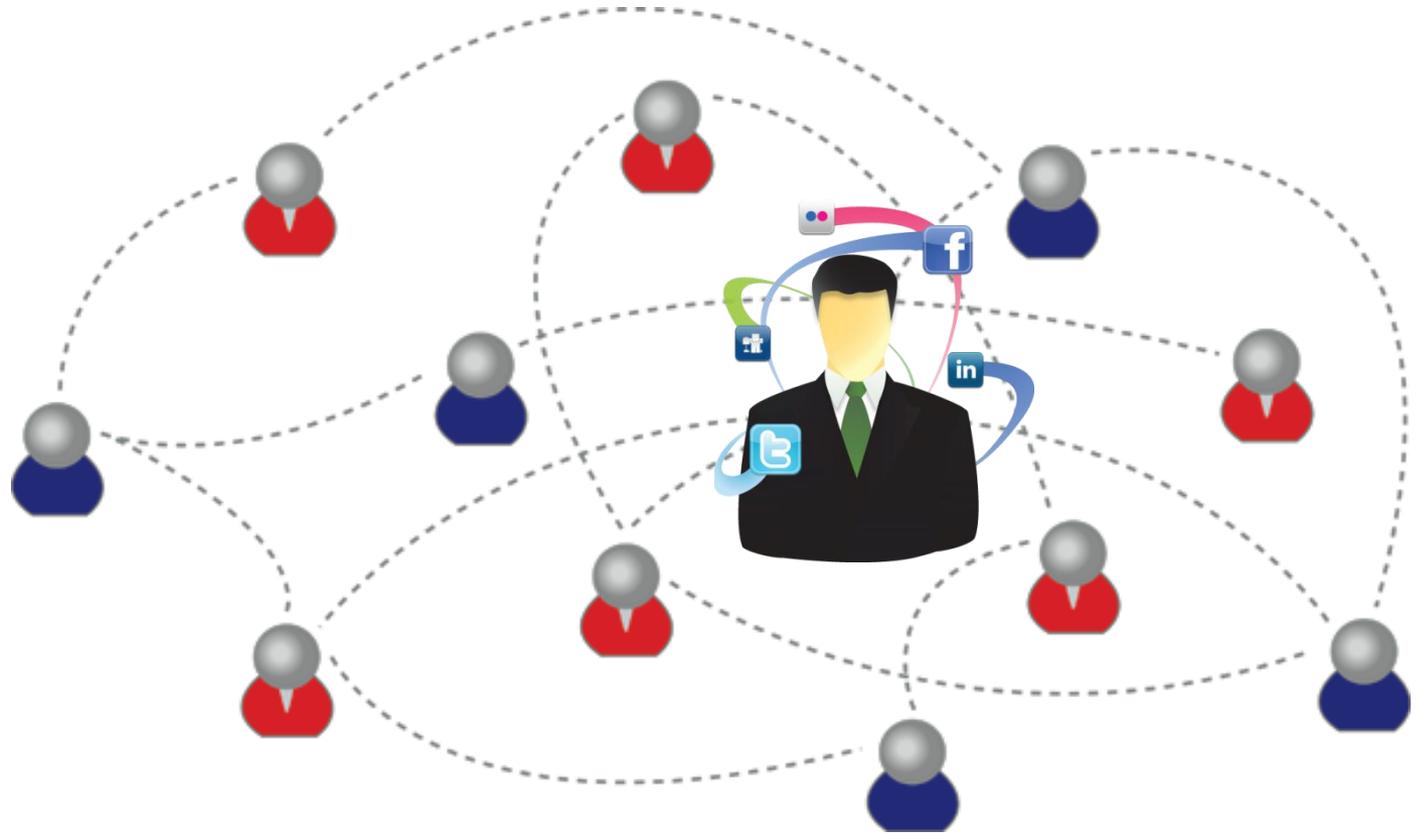
read-write web

social web



web 2.0

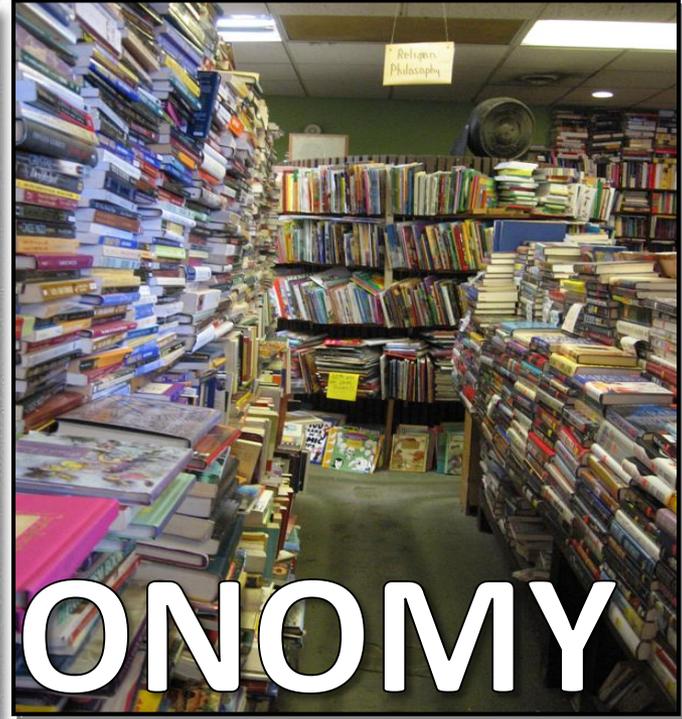
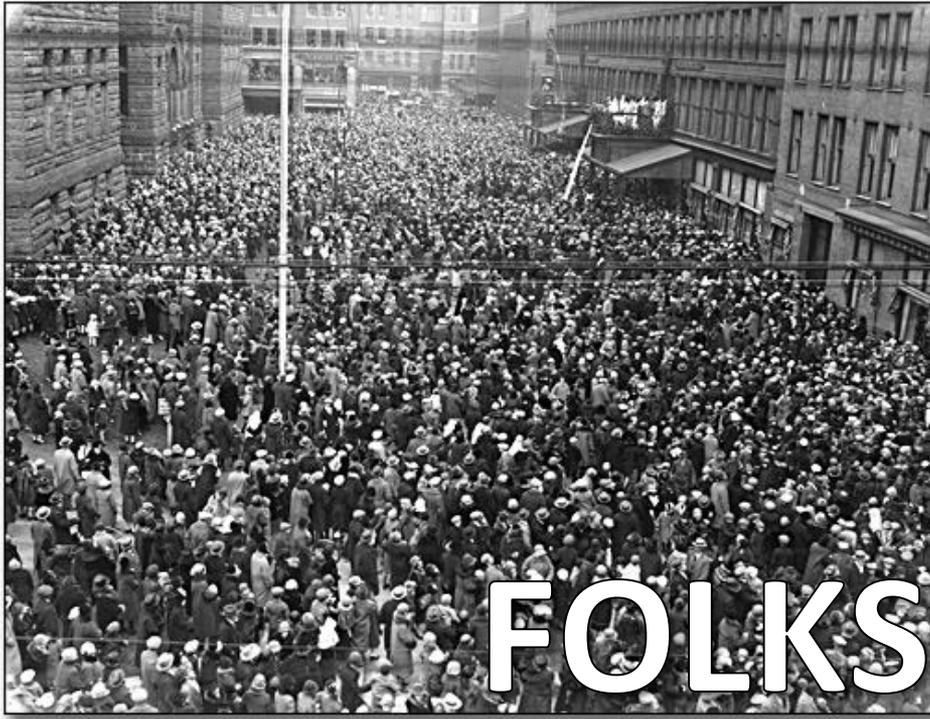
# social web networks





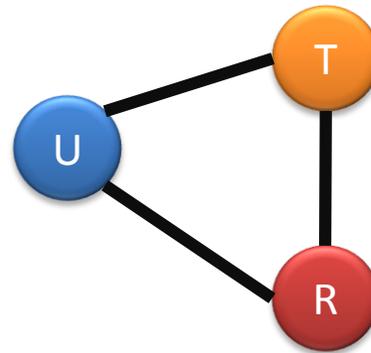
# **SOCIAL TAGGING**

collaboratively create  
and manage tags to  
annotate and  
categorize content



# FOLKS ONOMY

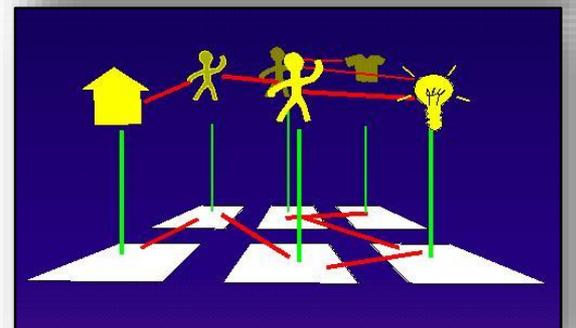
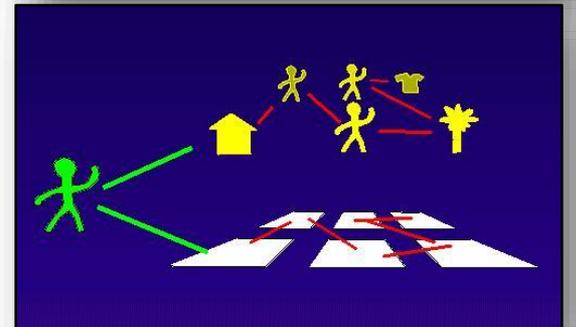
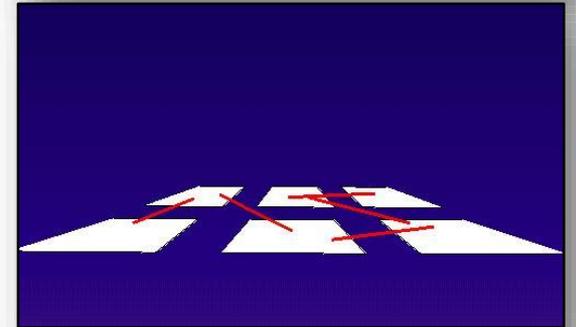
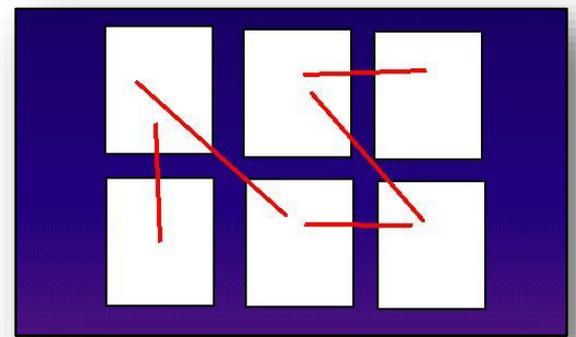
a crowd of users creating massive categorizations



# semantic web

mentioned by Tim BL

in **1994** at WWW



[[Tim Berners-Lee](http://www.w3.org/Talks/WWW94Tim/) 1994, <http://www.w3.org/Talks/WWW94Tim/>]

User Interface & Applications

Trust

Proof

Unifying Logic

SPARQL

Ontology:  
OWL

RDF-S

Rule:  
RIF

RDF

XML

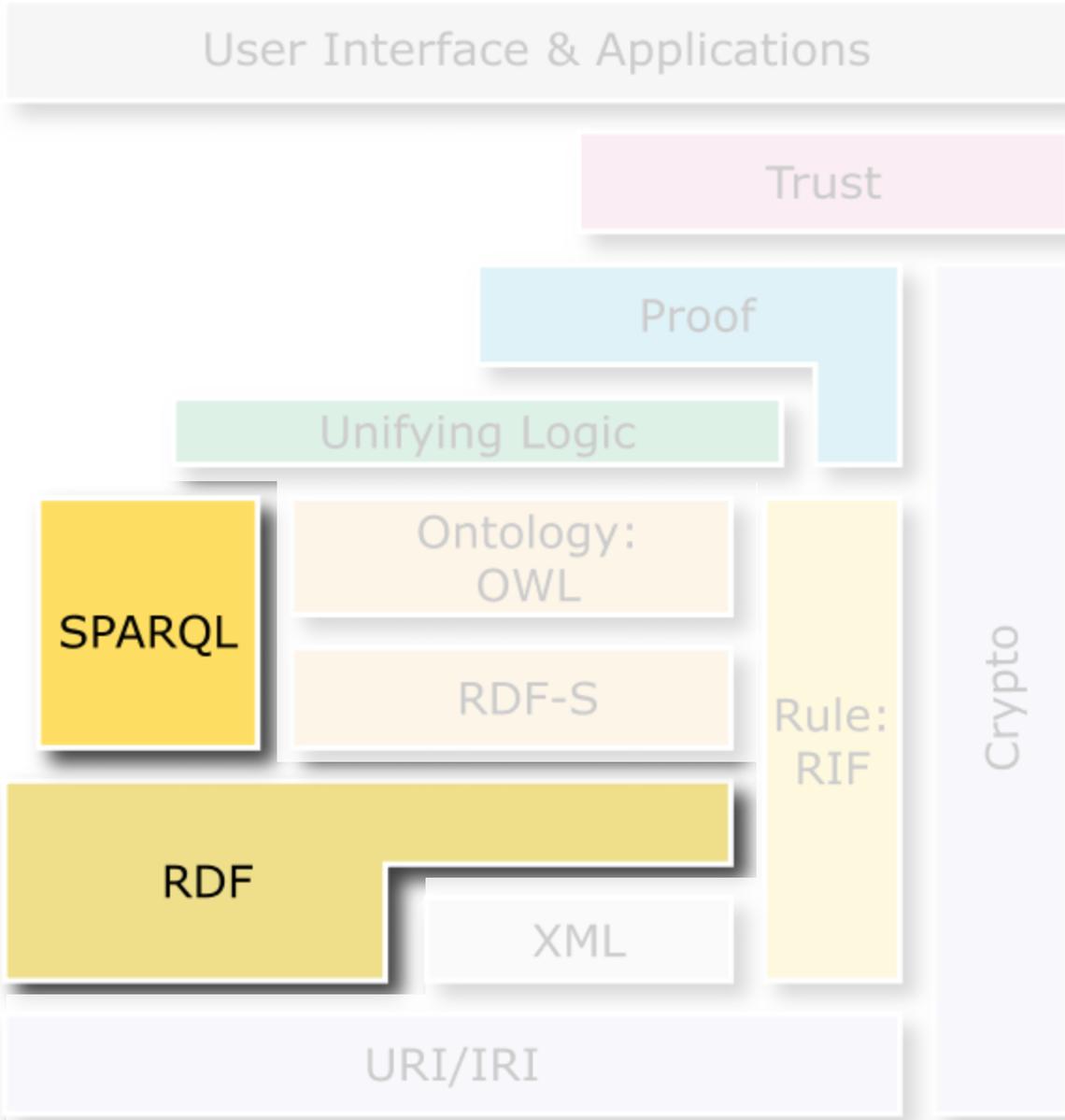
Crypto

URI/IRI

**SEMANTIC WEB STACK**

**W3C®**

**A WEB OF  
LINKED DATA**



**RDF** stands for

**Resource:** *pages, images, videos, ...  
everything that can have a URI*

**Description:** *attributes, features, and  
relations of the resources*

**Framework:** *model, languages and  
syntaxes for these descriptions*

**R****D****F** is a triple model *i.e.* every piece of knowledge is broken down into

( **s**ubject , **p**redicate , **o**bject )



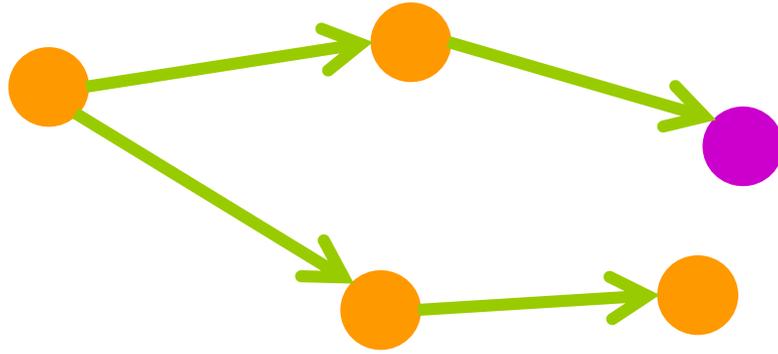
***doc.html has for author Fabien  
and has for theme Music***

**doc.html** has for author **Fabien**  
**doc.html** has for theme **Music**

( **doc.html** , **author** , **Fabien** )

( **doc.html** , **theme** , **Music** )

( **subject** , **predicate** , **object** )



**RDF** triples can be seen as arcs  
of a graph (**vertex**, **edge**, **vertex**)

(the RDF data model can be seen as a directed **labelled multigraph**)

**Fabien**

**author**

**doc.html**

**theme**

**Music**





a URI on everything

# URL



# URI

identify what  
exists on the  
web

identify,  
on the web,  
what exists

<http://my-site.fr>



<http://animals.org/this-zebra>



<http://ns.inria.fr/fabien.gandon#me>

<http://inria.fr/schema#author>

<http://inria.fr/rr/doc.html>

<http://inria.fr/schema#theme>

"Music"

# principles

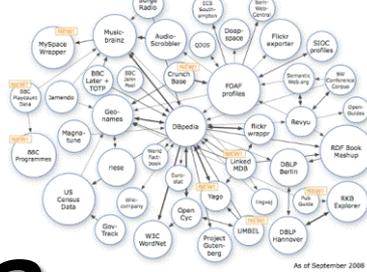
- use **RDF** as data format
- use **URIs** as names for things
- use **HTTP URIs** so that people can look up those names
- when someone **looks up** a URI, provide useful information (RDF, HTML, etc.) using **content negotiation**
- include **links to other URIs** so that related things can be discovered



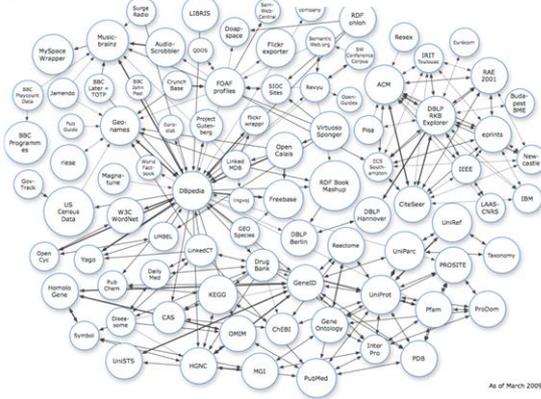
May 2007

April 2008

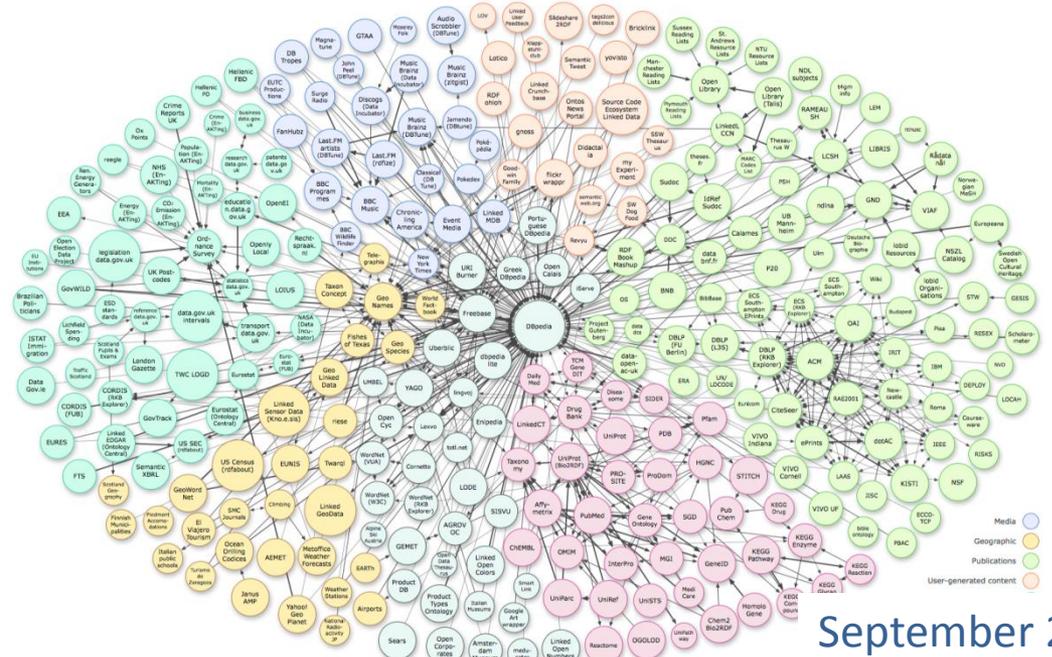
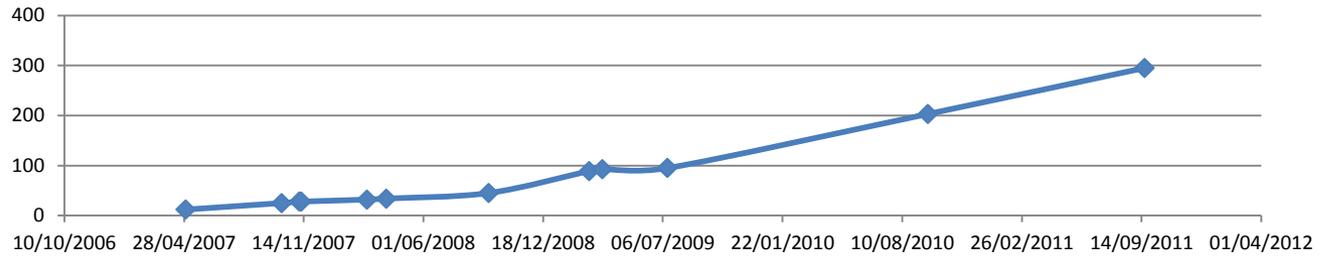
September 2008



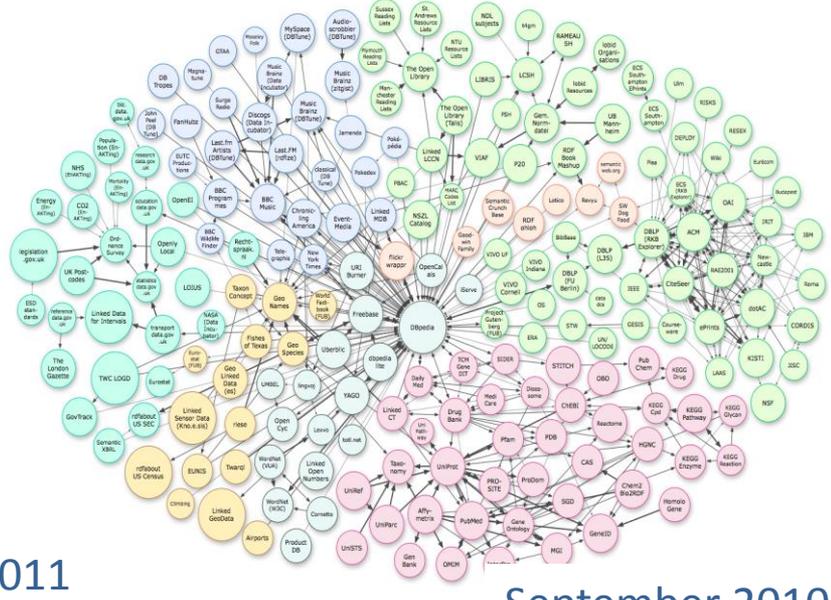
March 2009



# Linking Open Data



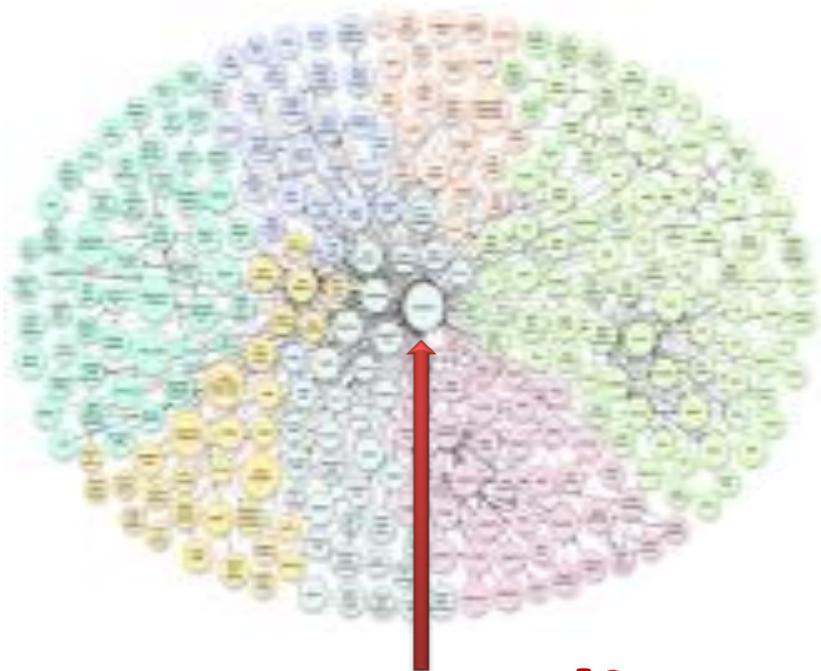
September 2011



September 2010



**query with SPARQL**  
**SPARQL Protocol and RDF**  
**Query Language**



**e.g. DBpedia**

## SPARQL Explorer for <http://dbpedia.org/sparql>

### SPARQL:

```
PREFIX owl: <http://www.w3.org/2002/07/owl#>  
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>  
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>  
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>  
PREFIX foaf: <http://xmlns.com/foaf/0.1/>  
PREFIX dc: <http://purl.org/dc/elements/1.1/>  
PREFIX : <http://dbpedia.org/resource/>  
PREFIX dbpedia2: <http://dbpedia.org/property/>  
PREFIX dbpedia: <http://dbpedia.org/>  
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
```

Results:



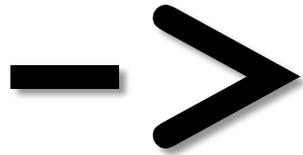
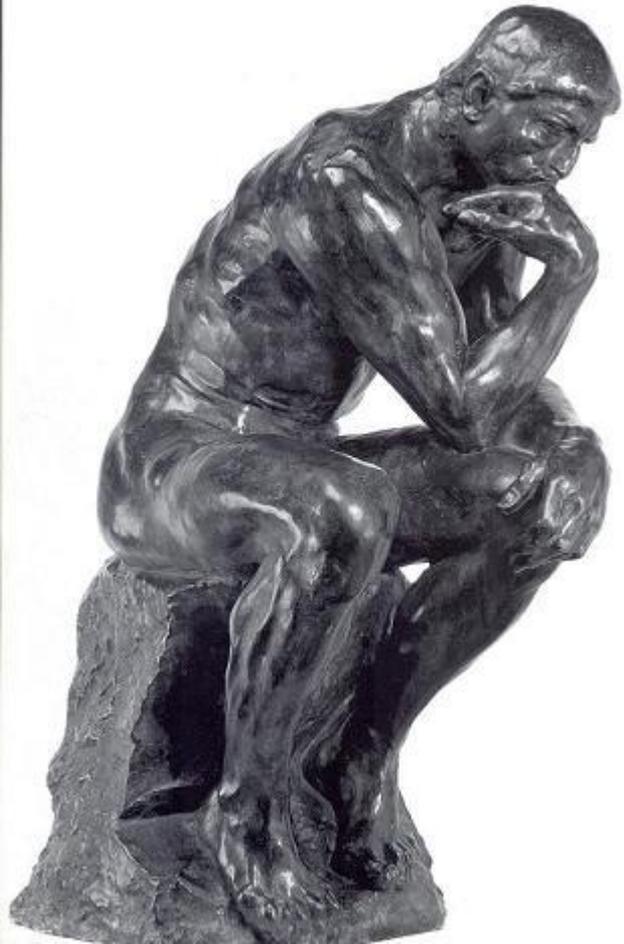
Powered by [OpenLink Virtuoso](#) and [dbpedia](#)





**opening data silos**  
created by applications and that break the linked nature of the web

Ontology



ontologies



User Interface & Applications

Trust

Proof

Unifying Logic

SPARQL

Ontology:  
OWL

RDF-S

**PUBLISHED  
SEMANTICS  
OF SCHEMAS**

Rule:  
RIF

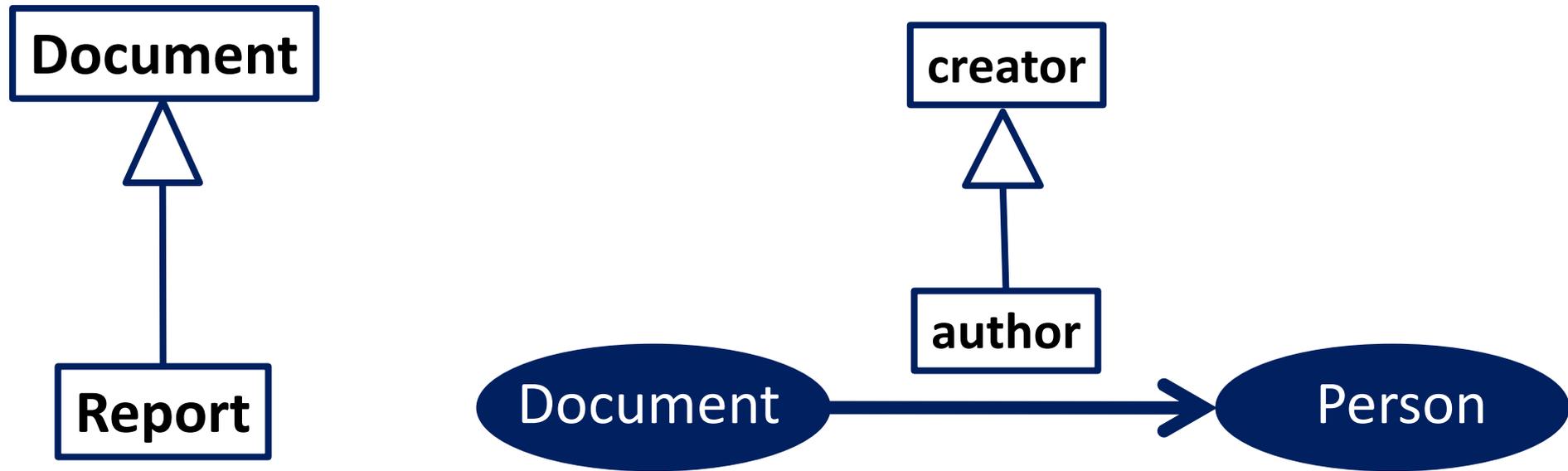
Crypto

RDF

XML

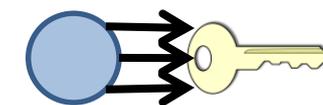
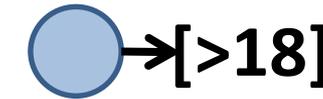
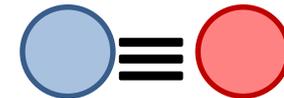
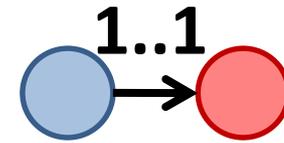
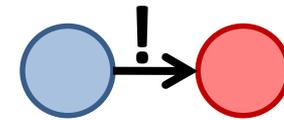
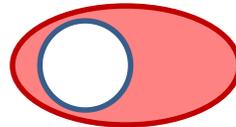
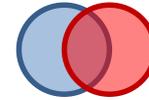
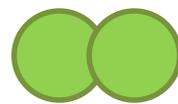
URI/IRI

**RDFS** to declare classes of resources, properties, and organize their hierarchy





# OWL in one...



union

disjunction

intersection

complement

restriction

cardinality

equivalence

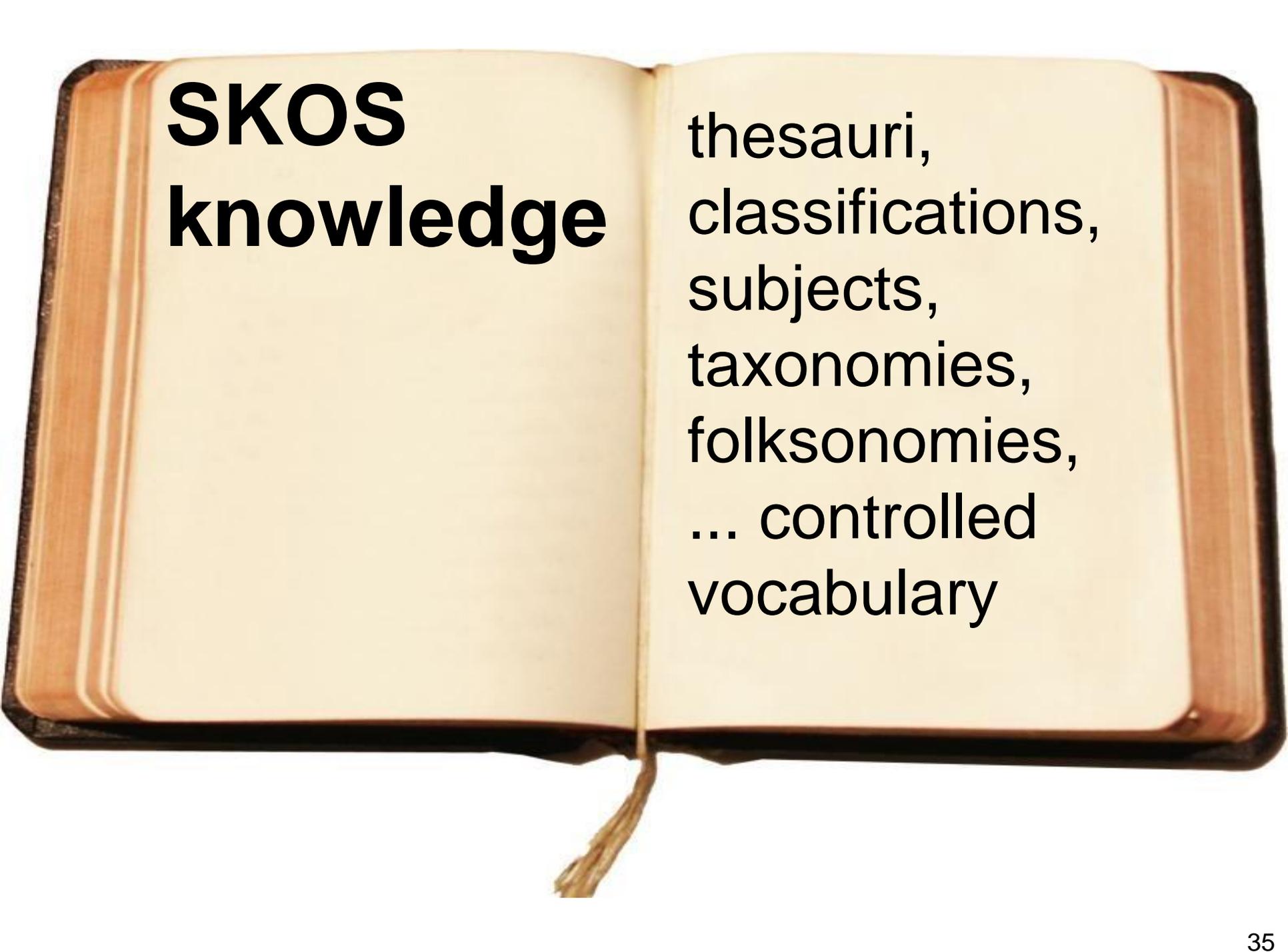
enumeration

value restrict.

disjoint union

keys

...

An open notebook with a dark cover and a tassel hanging from the bottom center. The left page is blank, and the right page contains text. The text is in a bold, black, sans-serif font.

# **SKOS**

## **knowledge**

thesauri,  
classifications,  
subjects,  
taxonomies,  
folksonomies,  
... controlled  
vocabulary



natural language expressions to refer to concepts

**inria:CorporateSemanticWeb**

```
skos:prefLabel "corporate semantic web"@en;
```

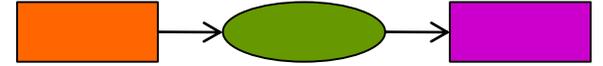
```
skos:prefLabel "web sémantique d'entreprise"@fr;
```

```
skos:altLabel "corporate SW"@en;
```

```
skos:altLabel "CSW"@en;
```

```
skos:hiddenLabel "web semantique d'entreprise"@fr.
```

# relations



between concepts

`inria:CorporateSemanticWeb`

`skos:broader w3c:SemanticWeb;`

`skos:narrower inria:CorporateSemanticWiki;`

`skos:related inria:KnowledgeManagement.`

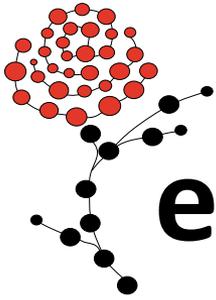
**</background\_knowledge>**

e.g.

<http://wimmics.inria.fr>

A group of people are gathered around a large wall covered in numerous yellow sticky notes. One person on the left is reaching up to place a note. The notes contain various handwritten notes and diagrams. A prominent red sticky note is visible on the right side of the wall. The scene is brightly lit, suggesting a window or large light source. The overall atmosphere is one of collaborative brainstorming or a workshop.

# flat folksonomies



# e.g. structuring folksonomy

web 2.0

flat folksonomies

thesaurus

**Fabien Gandon's Bookmarks**  
 Bookmarks | Network | Tags | Subscriptions | Inbox  
 Site: <http://www-sop.inria.fr/acacia/personnel/Fabien.Gandon/>  
 See more bookmarks in Popular, Recent, or look up a URL.

gandon Type a tag Bookmarks 276 Display options

Semweb Pro : le web sémantique français se cherche encore des entreprises utilisatrices::Gestion des données::LeMagIT 2

A l'occasion de la conférence Semweb Pro qui s'est déroulée les 17 et 18 janvier, la communauté du web sémantique français a fortement insisté sur les usages, histoire de rappeler aux utilisateurs que le concept du web sémantique est bel et bien sorti des labos.

EDIT | SHARE | DELETE semweb semwebpro semanticweb semantic\_web presse media

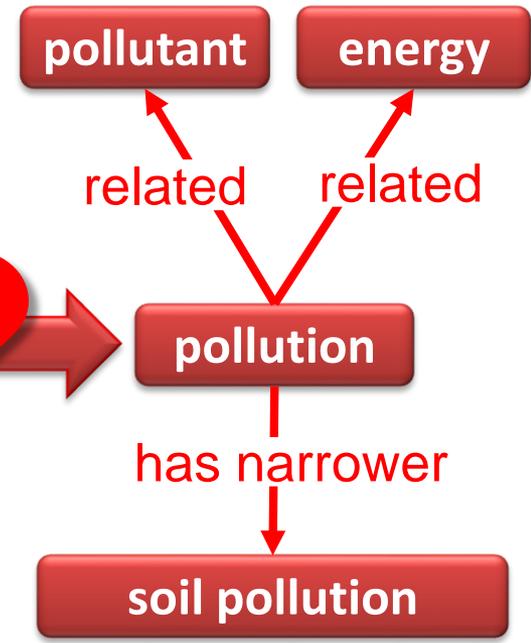
Semweb.pro : la France bien positionnée sur le web sémantique 5

Pour cette première édition, la conférence française a réuni la communauté et présenté des cas d'utilisation concrets.

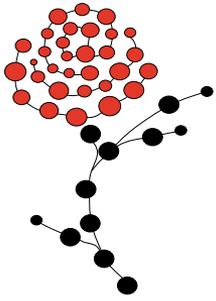
EDIT | SHARE | DELETE semantic\_web semanticweb semweb France conference semwebpro media presse



communiaciation communication comparateur  
 compensation comportement condition  
 conference confiance consommation  
 contact convention cosmetique coton  
 covoiturage creation critique CSS cuisine  
 dechet dell demarche developpement document  
 donnee durable dynamique eau ecoconception  
 ecolife ecologie ecomerce economie  
 elavage emballage emission empreinte encyclopedie energie enquete  
 entreprise environnement eolien energie  
 ericsson espece ethique etiquette etude  
 europe evaluation evolution extensif faune  
 federation fertilisation filiere film finance flore  
 fondation forum france fruit GES  
 goodguide grandedistribution graphique green  
 greenpeace greenwashing grenelle guide  
 habitat hitech HQE HTML hybride impact  
 import imprimante inde indice industrie



SKOS



# e.g. combining metric spaces

## edit distances

Monge-Elkan Soundex, JaroWinkler, asymmetry Monge-Elkan Qgram

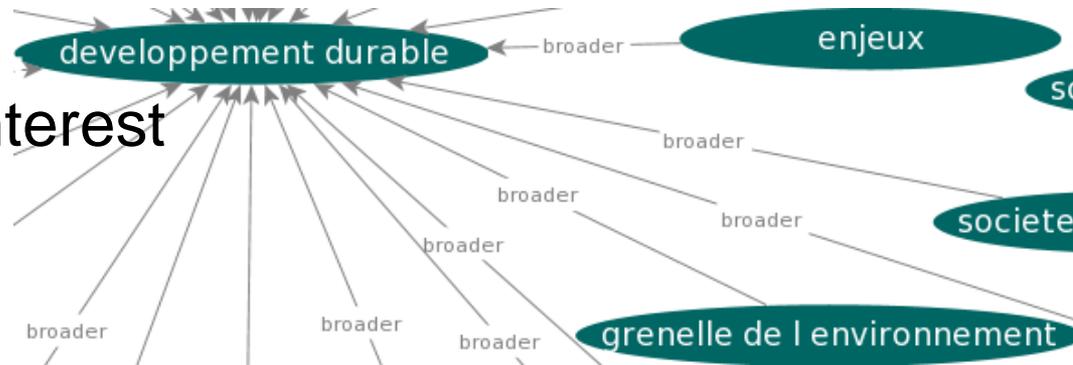
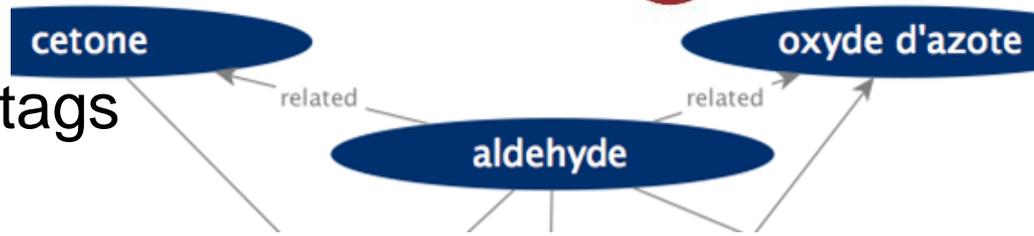
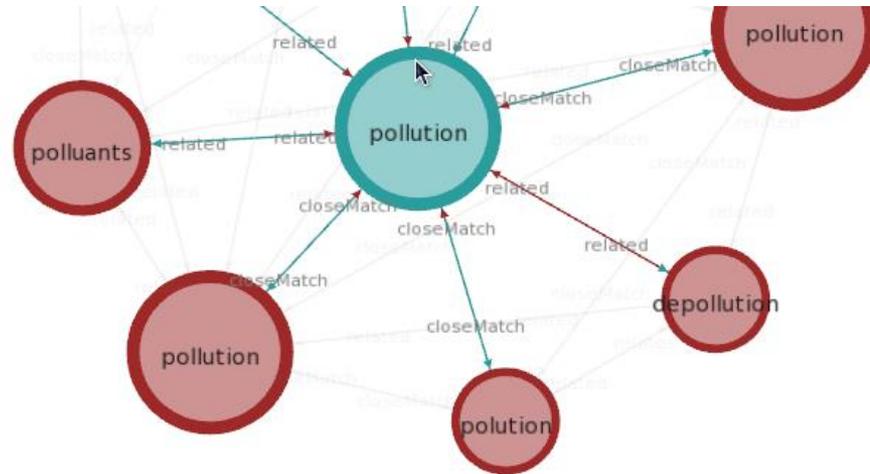
## contextual metric

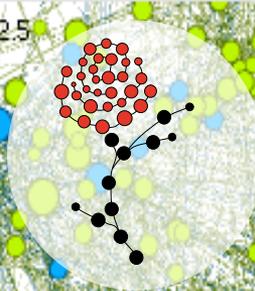
cosinus vector of co-occurring tags

$$\cos(\vec{tag_1}, \vec{tag_2}) = \frac{\vec{tag_1} \cdot \vec{tag_2}}{\|\vec{tag_1}\| \cdot \|\vec{tag_2}\|}$$

## social metrics

inclusion of communities of interest





# e.g. ademe TheseNet

83 027 relations / 9 037 tags

- 68 633 related
- 11 254 hyponyms
- 3 193 spelling variants

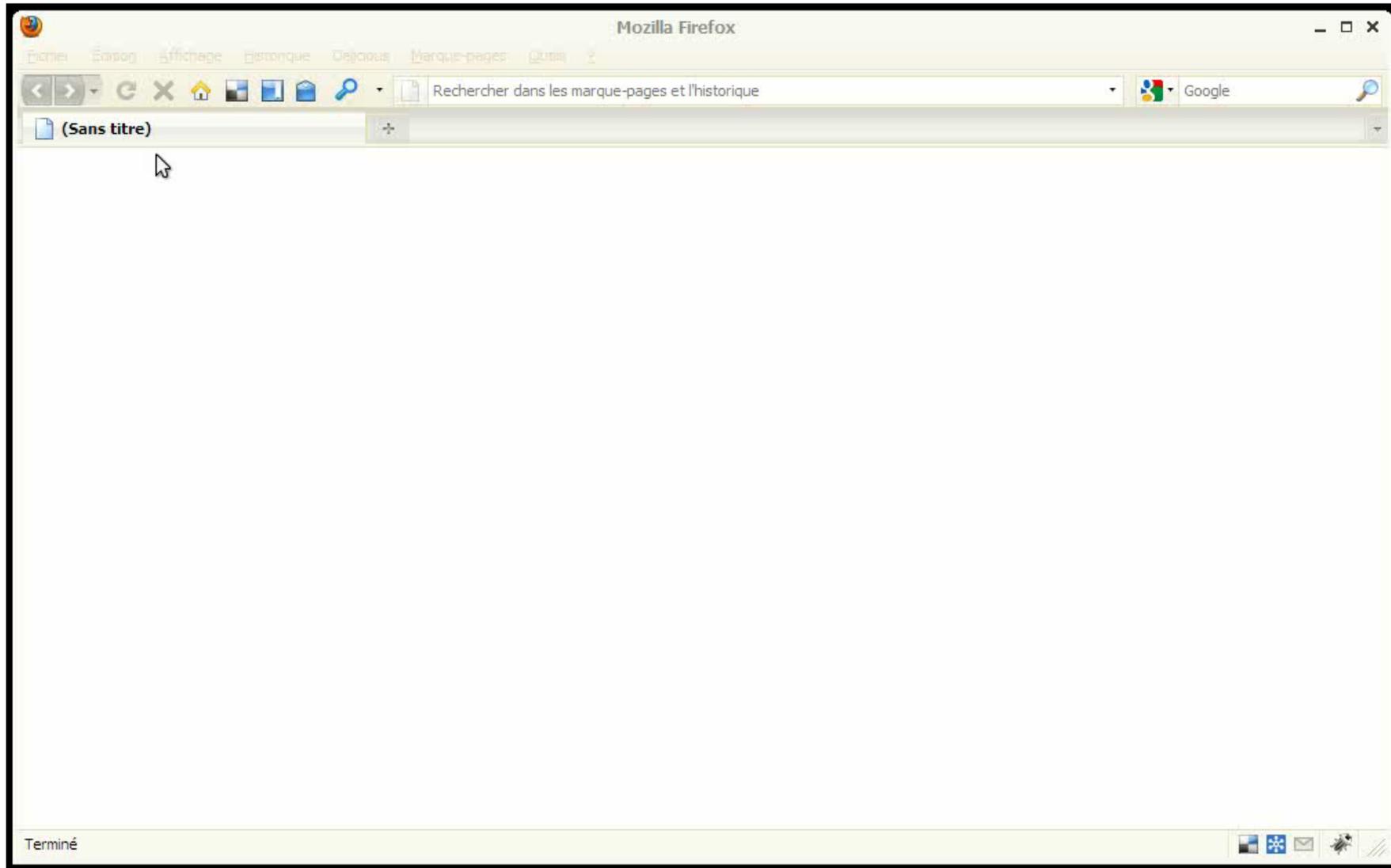
evolution of the place of humans in

# complex web applications



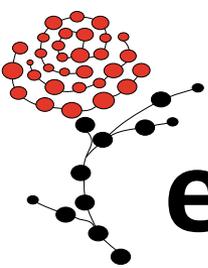


# e.g. search & feedback

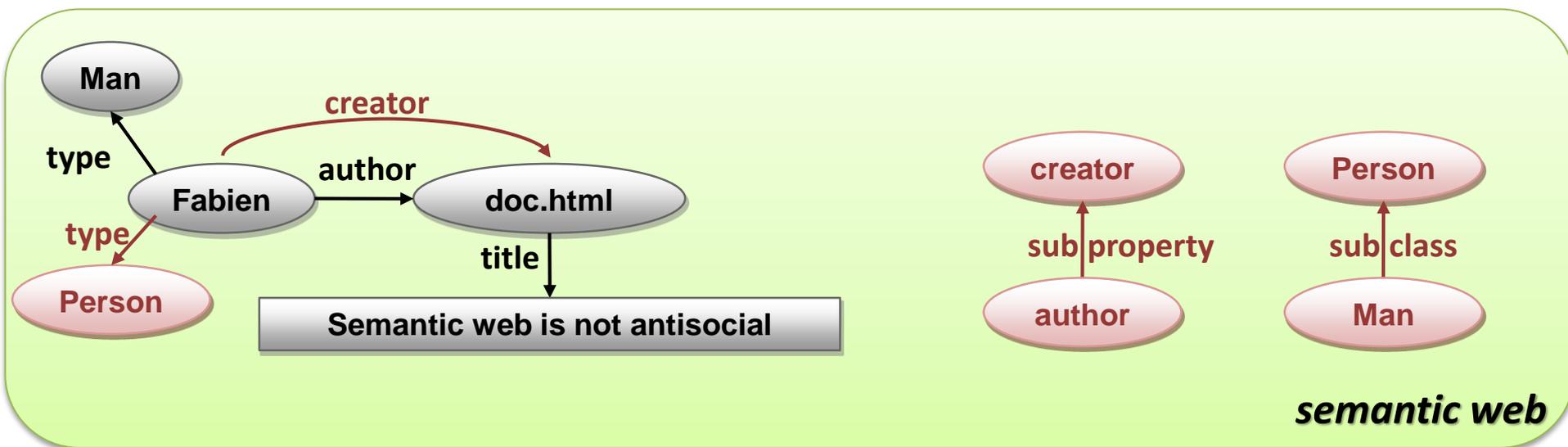
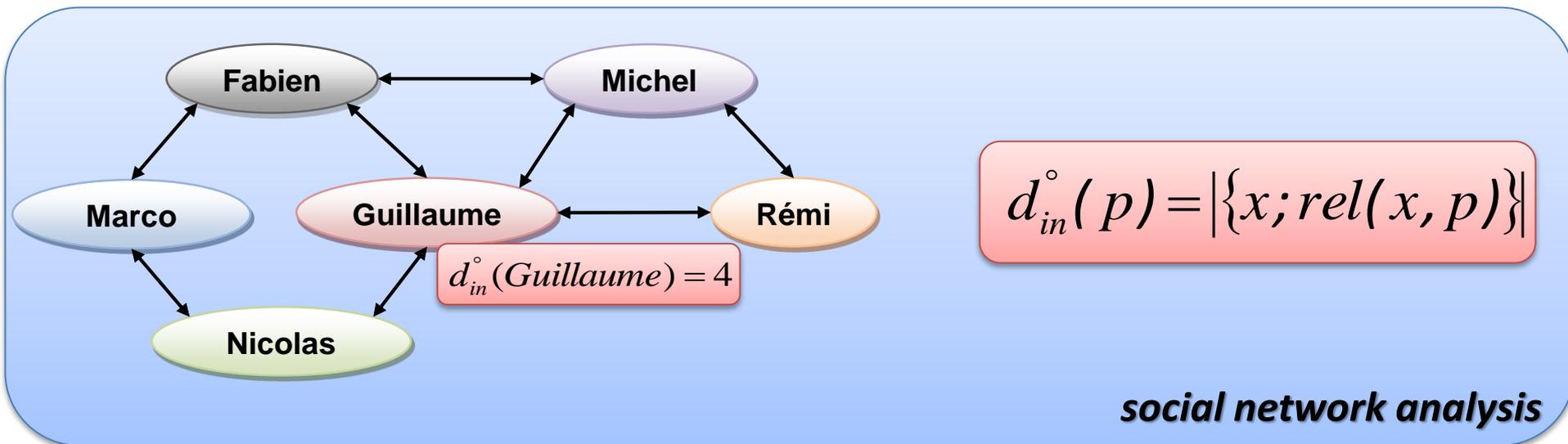


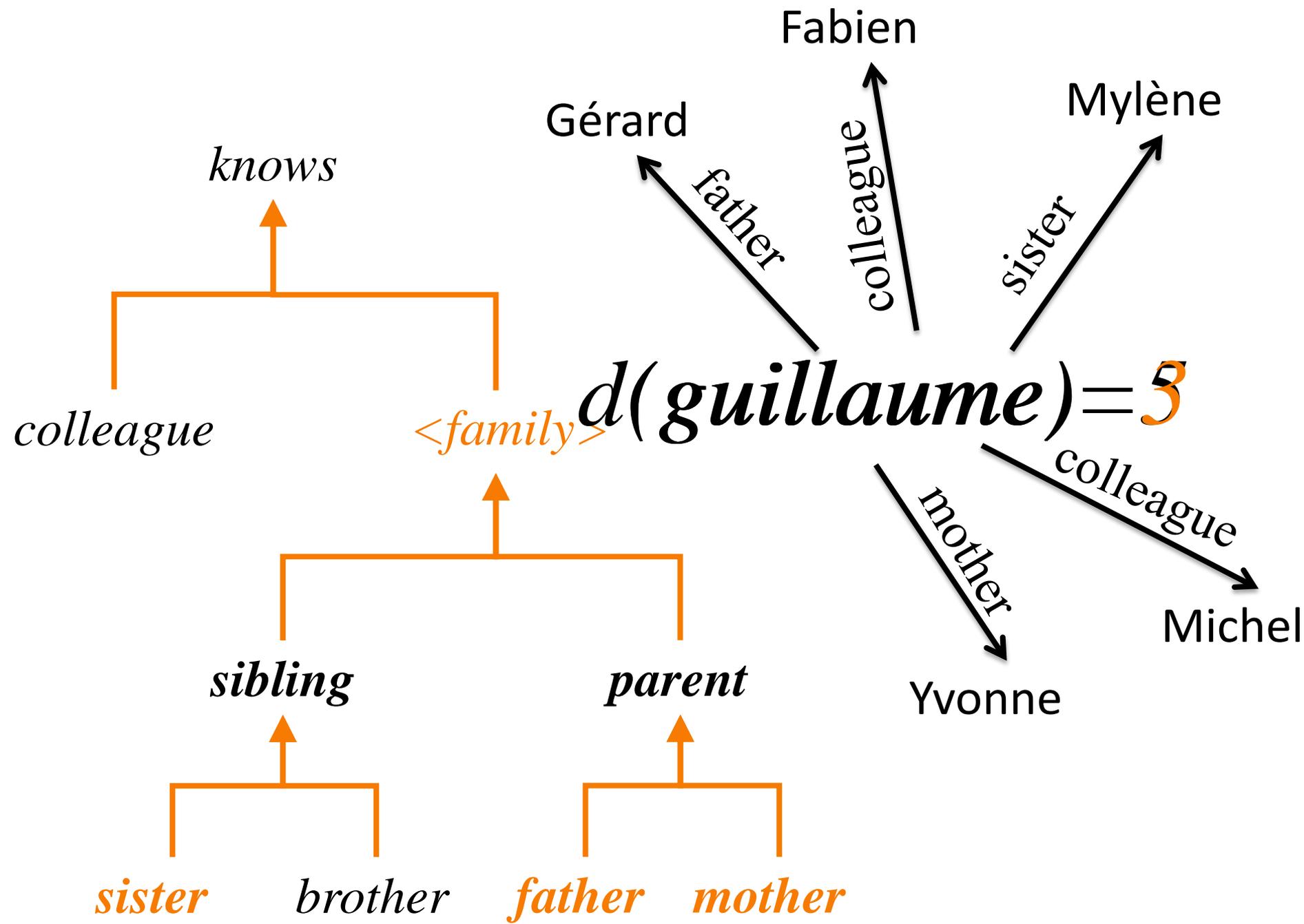


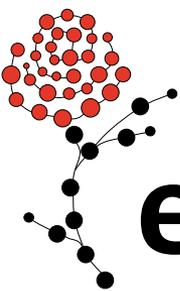
# sociograms 3.0



# e.g. typing sociograms







# e.g. parameterized analysis

SNA indices	SPARQL formal definition
$nb_{<type>}^{actor}(G)$	select merge count(?x) as ?nbacktor from <G> where{ ?x rdf:type param[type] }
$nb_{<rel>}^{actor}(G)$	select merge count(?x) as ?nbacktors from <G> where{ {?x param[rel] ?y} UNION{?y param[rel] ?x} }
$nb_{<rel>}^{subject}(G)$	select merge count(?x) as ?nbsubj from <G> where{ ?x param[rel] ?y }
$nb_{<rel>}^{object}(G)$	select merge count(?y) as ?nbobj from <G> where{ ?x param[rel] ?y }
$nb_{<rel>}^{relation}(G)$	select cardinality(?p) as ?card from <G> where { { ?p rdf:type rdf:Property filter(?p ^ param[rel]) } UNION { ?p rdfs:subPropertyOf ?parent filter(?parent ^ param[rel]) } }
$Comp_{<rel>}(G)$	select ?x ?y from <G> where { ?x param[rel] ?y }group by any
$D_{<rel, dist>}(y)$	select ?y count(?x) as ?degree where { {?x (param[rel])*:: \$path ?y filter(pathLength(\$path) <= param[dist])} UNION {?y param[rel]:: \$path ?x filter(pathLength(\$path) <= param[dist])} }group by ?y
$D_{<rel, dist>}^{in}(y)$	select ?y count(?x) as ?indegree where{ ?x (param[rel])*:: \$path ?y filter(pathLength(\$path) <= param[dist]) }group by ?y
$D_{<rel, dist>}^{out}(y)$	select ?x count(?y) as ?outdegree where { ?x (param[rel])*:: \$path ?y filter(pathLength(\$path) <= param[dist]) }group by ?x
$g_{<rel>}(from, to)$	select ?from ?to \$path pathLength(\$path) as ?length where{ ?from sa (param[rel])*:: \$path ?to }group by ?from ?to
$Diam_{rel}(G)$	select pathLength(\$path) as ?length from <G> where { ?y s (param[rel])*:: \$path ?to }order by desc(?length) limit 1
$nb_{<rel>}^g(from, to)$	select ?from ?to count(\$path) as ?count where{ ?from sa (param[rel])*:: \$path ?to }group by ?from ?to

```
nb_{<rel>}^g(b, from, to)  select ?from ?to ?b count($path) as ?count
                        where{
                          ?from sa (param[rel])*:: $path ?to
                          graph $path{?b param[rel] ?j}
                          filter(?from != ?b)
                          optional ( ?from param[rel]:: $p ?to )
                          filter(!bound($p))
                        }group by ?from ?to ?b
```

```
C_{<rel>}^c(y)           select distinct ?y ?to pathLength($path) as
                        ?length (1/sum(?length)) as ?centrality
                        where{
                          ?y s (param[rel])*:: $path ?to
                        }group by ?y
```

```
B_{<rel>}(b, from, to)  select ?from ?to ?b
                        (count($path)/count($path2)) as ?betweenness
                        where{
                          ?from sa (param[rel])*:: $path ?to
                          graph $path{?b param[rel] ?j}
                          filter(?from != ?b)
                          optional ( ?from param[rel]:: $p ?to )
                          filter(!bound($p))
                          ?from sa (param[rel])*:: $path2 ?to
                        }group by ?from ?to ?b
```



$$B_{<rel>}(b, x, y) = \frac{nb_{<rel>}^g(b, x, y)}{nb_{<rel>}^g(x, y)}$$

**:= select** ?from ?to ?b

(count(\$path)/count(\$path2)) as

?betweenness **where** {

?from sa (param[rel])\*:: \$path ?to

graph \$path{?b param[rel] ?j}

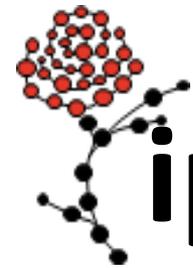
filter(?from != ?b)

optional { ?from param[rel]:: \$p ?to }

filter(!bound(\$p))

?from sa (param[rel])\*:: \$path2 ?to

}group by ?from ?to ?b



# ipernity.com dataset in RDF

61 937 actors & 494 510 relationships



–18 771 family links between 8 047 actors

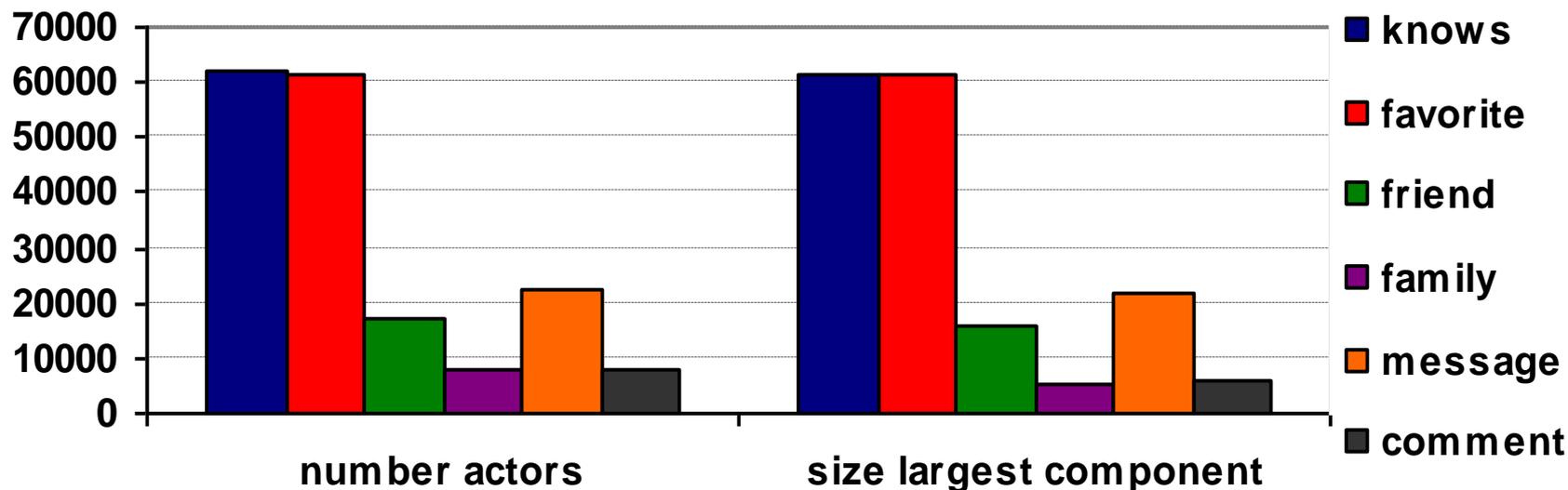
–136 311 friend links implicating 17 441 actors

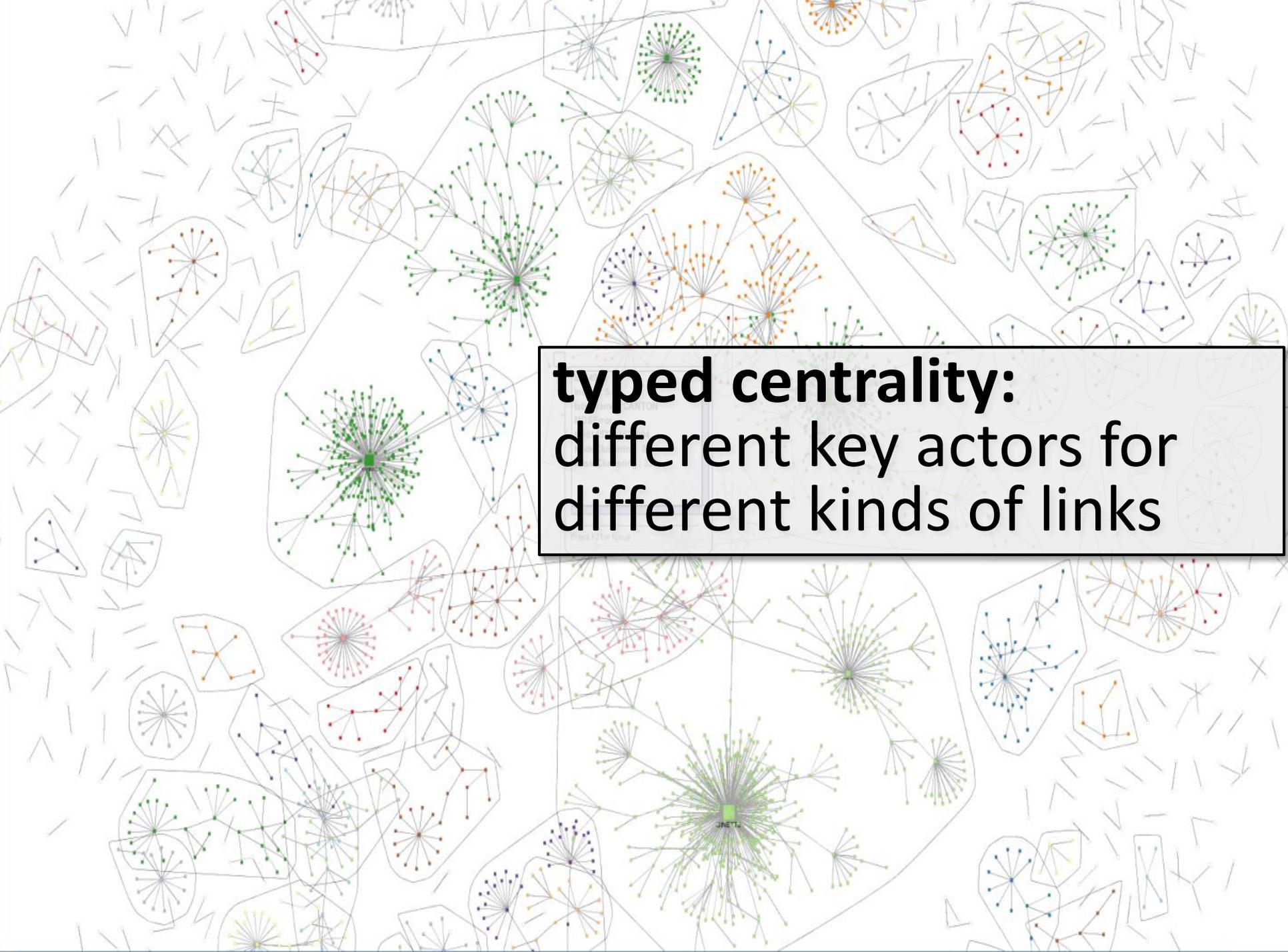
–339 428 favorite links for 61 425 actors, etc.

existence of a largest *component* in all sub networks

"the effectiveness of the social network at doing its job"

[Newman 2003]



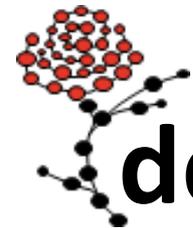


**typed centrality:**  
different key actors for  
different kinds of links

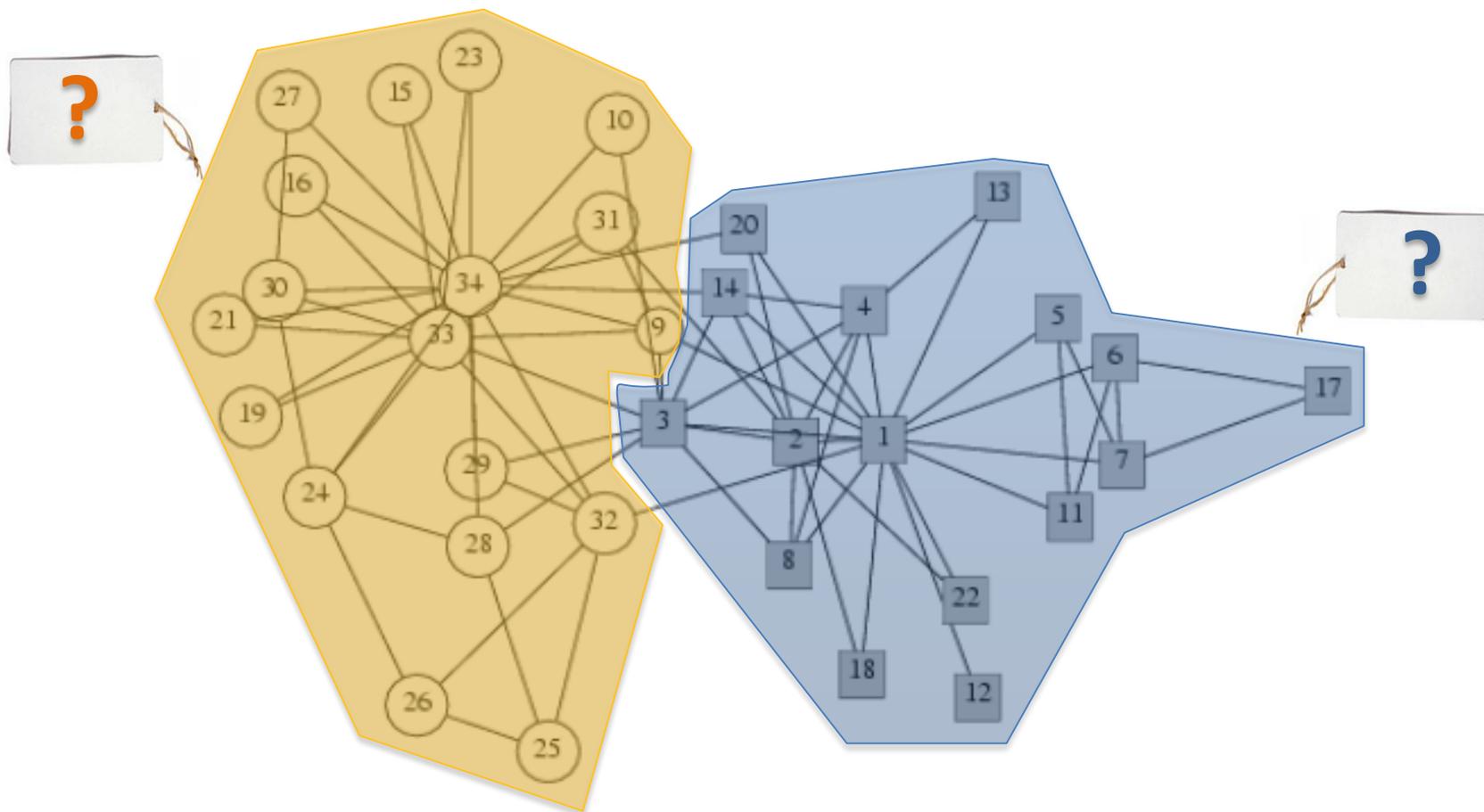


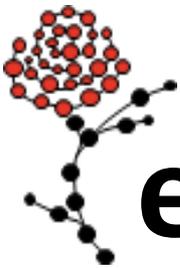
# groups & reasons



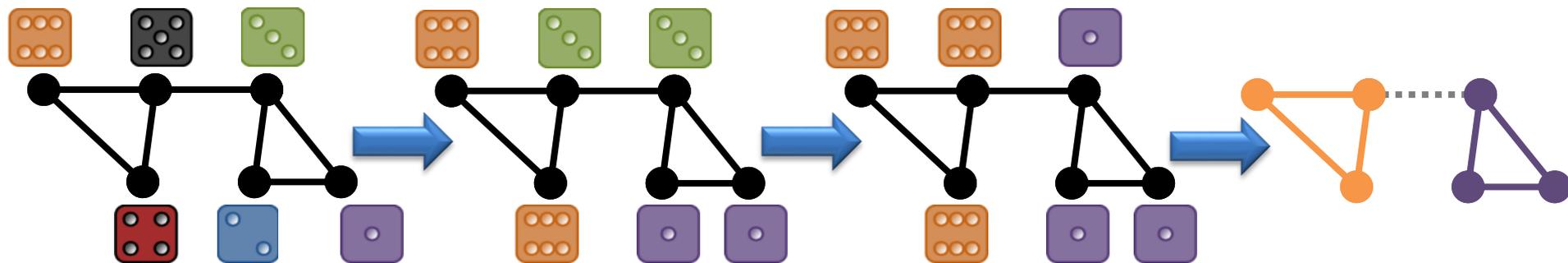


# detecting AND labeling communities

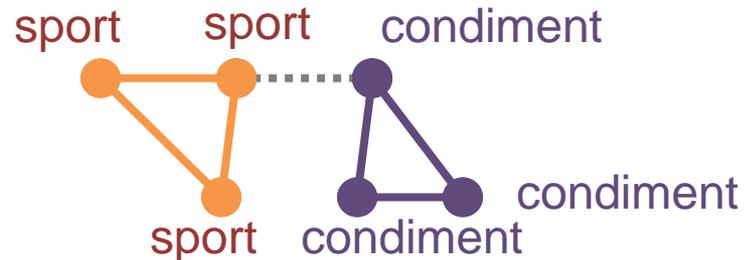
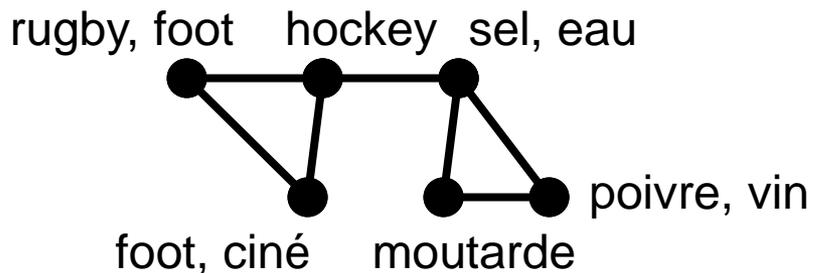




# e.g. semantic propagation



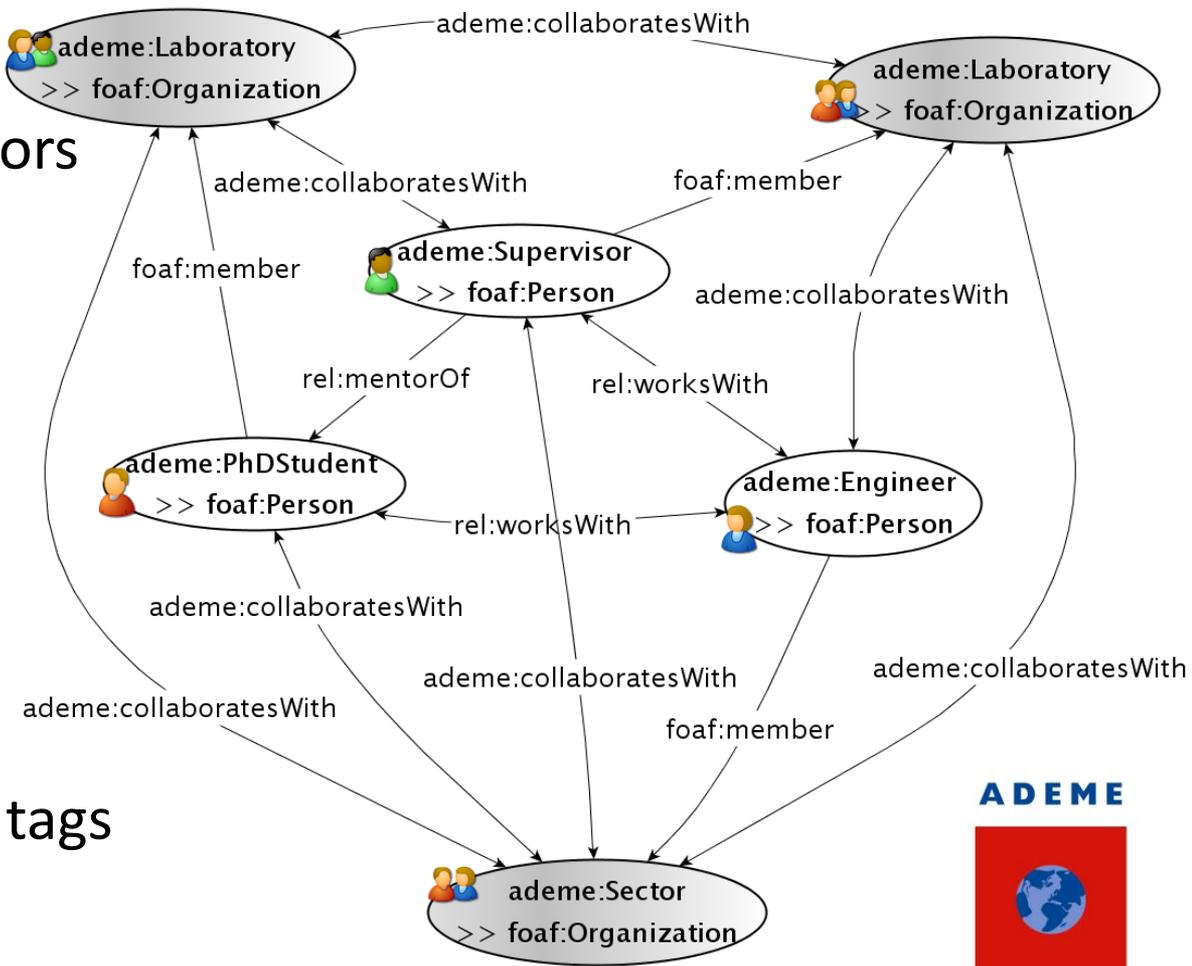
**from RAK/LP to SemTagP**





# applied to Ademe Ph.D. network

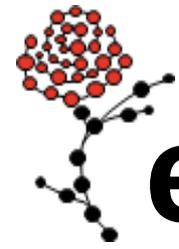
- **1 853 agents**  
1 597 academic supervisors  
256 ADEME engineers.
- **13 982 relationships**  
10 246 rel:worksWith  
3 736 rel:colleagueOf
- **6 583 tags**
- **3 570 skos:narrower**  
relations between 2 785 tags



**ADEME**

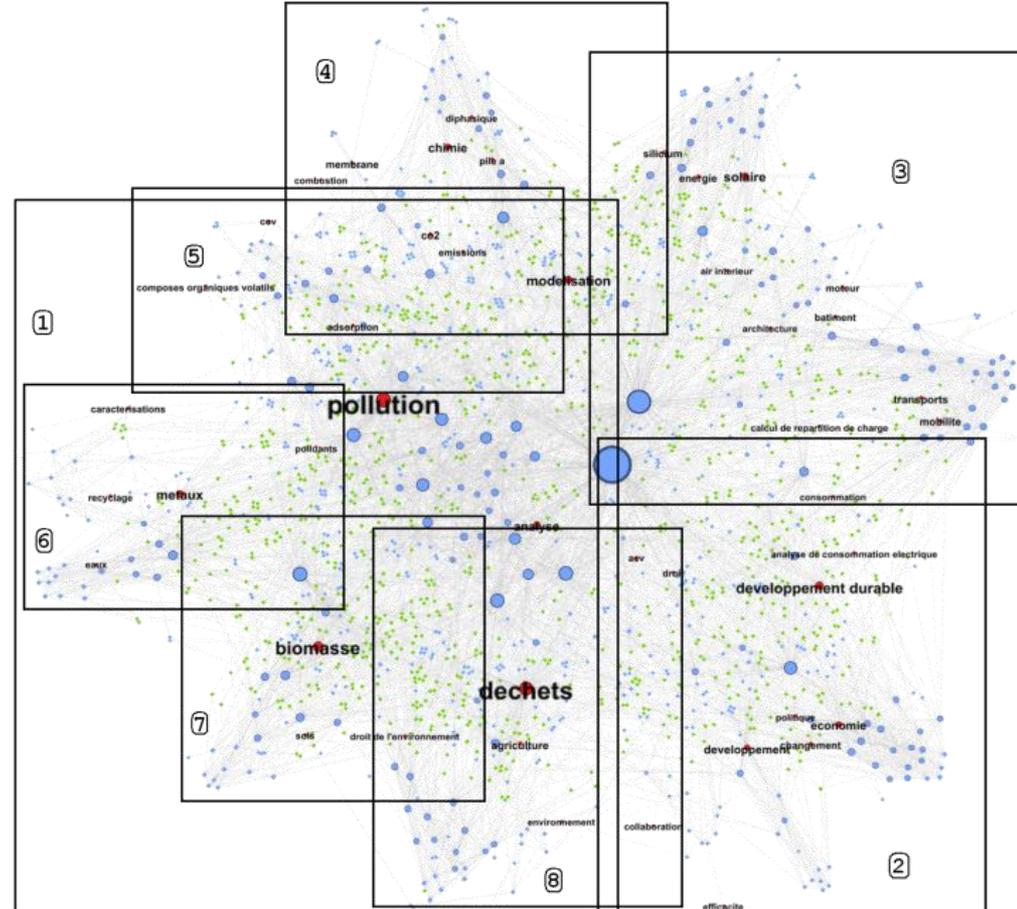
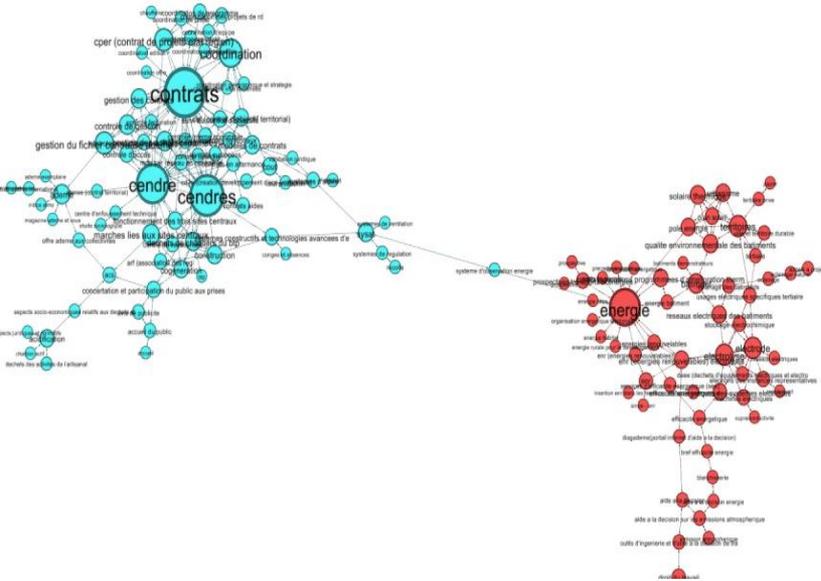


Agence de l'Environnement  
et de la Maîtrise de l'Energie



# e.g. Ademe

- 1 pollution ; 2 développement durable ;
- 3 énergie ; 4 chimie ; 5 pollution de l'air ;
- 6 métaux ; 7 biomasse ; 8 déchets.



# interaction





16<sup>th</sup> - 20<sup>th</sup> April 2012

### Official keynote speakers announcement

#### Tim Berners-Lee

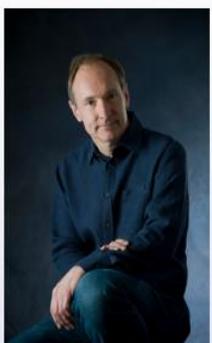


photo credit: Tony Scarpetta

A graduate of Oxford University, Tim Berners-Lee is the inventor of the World Wide Web, an internet-based hypermedia information system while at CERN, the European Particle Physics Laboratory. He was the first web client and server in 1990. HTML were refined as Web technology...

He is the Director of the World Wide Web Consortium, an international organization founded in 1994 which develops and maintains the standards (specifications, guidelines, software, and services) that underpin the potential. He is a founding Director of the World Wide Web Foundation in 2009 to promote research and multidisciplinary study of humanity and the Web.

[Read more...](#)

#### Bernard Stiegler



Bernard Stiegler is a director of IRI at MIT and a Professorial Fellow at the Centre for Cognitive Studies at Goldsmith College in London. He is currently at the Technology of Compiègne where he teaches.

Before taking up the post at the Pompeu Fabra University, he was the director of the International College of Philosophy, the National de l'Audiotvisuel, then Director of the Centre for the Coordination Acoustique/Musique (IRCAM).

photo credit: Georges Pompidou Center

**ISI\*IL** Editeur de Webmark

URL: http://www2012.org/?page\_id=1804

Title: www2012

Description: The World Wide Web Conference is a yearly international conference on the topic of the future direction of the World Wide Web. It began in 1994 at CERN and is organized by...

Tags:

Used tags: #www2012 #conferences @Colleagues

Your recent #Pittsburgh #boxe #d mo #geothermie #Inria

Scrap Geo Social Live Temporal

Lyon, France

Latitude 45.764043  
Longitude 4.835658999999964  
Altitude

Annuler OK

**ISI\*IL** Access Condition Set Editor

Label: Colleagues

ACS Type  
 Disjunctive (OR)  
 Conjunctive (AND)

Accessor is Serena Villata

SPARQL Box:  

```
ASK { ?accessor a foaf:Person }
BINDINGS ?accessor { <http://ns.inria.fr/isisil/id/person/svillata> }
```

Accessor is member of Edelweiss Team

SPARQL Box:  

```
ASK { ?group foaf:member ?accessor }
BINDINGS ?group { <http://ns.inria.fr/isisil/id/group/edelweiss+team> }
```

Accessor has relationship rel:colleagueOf

SPARQL Box:  

```
ASK { ?accessor ?relationship ?provider }
BINDINGS ?relationship { <http://purl.org/vocab/relationship/colleagueOf> }
```

Annuler OK

Firefox

EX L'AFP recadrée par le Parlement...

www.lexpress.fr/actualite/media-people/media/l-afp-recadree-par-le-parlement\_10777

Rejoignez L'EXPRESS

Marie Amélie Putallaz recommande l'article L'Express lance son application social reader avec Facebook

L'EXPRESS ACTUALITÉ ÉCONOMIE FINANCE PERSO ENTREPRISE EMPLOI CULTURE STYLES

EXPRIMEZ VOS IDÉES! EXPRESS YOURSELF

Actualité | Photos | Vidéos | Blogs | Express Yourself

À la une | Politique | Monde | Economie | Société | Education | Médias

Faites le plein d'idées pour bouger sur

Actualité > Médias et people

## L'AFP recadrée par le Parlement

Par L'EXPRESS.fr, publié le 01/02/2012 à 15:33

Recommander Envoyer Tweeter +7

Imprimer Envoyer par e-mail Partager



Webmark it!

ISIIL Webmark Editor

Infos Localize Socialize Synchronize Archive It!

### L'AFP recadrée par le Parlement

EX article

☆☆☆☆☆

[http://www.lexpress.fr/actualite/media-people/...a/l-afp-recadree-par-le-parlement\\_1077740.html](http://www.lexpress.fr/actualite/media-people/...a/l-afp-recadree-par-le-parlement_1077740.html)

Les députés ont voté un texte précisant les missions de l'Agence France Presse. Une mesure imposée par Bruxelles.

Enter the name of a person or a group to share this Webmark

@fgandon @olivier.corby @michel.buffa #politique #médiat #communauté européenne

```
<meta property="og:description" content="Les députés ont voté un texte précisant les missions de l'Age
<meta property="og:title" content="L'AFP recadrée par le Parlement"/>
<meta property="og:type" content="article"/>
<meta property="og:url" content="http://www.lexpress.fr/actualite/media-people/media/l-afp-recadree-pe
<meta property="og:image" content="http://www.lexpress.fr/medias/1698/869816_belgium-eu-summit.jpg"/>
<meta property="og:count" content="0" />
<meta property="og:site_name" content="L'EXPRESS.fr"/>
```

towards rich webmarks

# Fresnel lenses to adapt results

File Edit View History Bookmarks Tools Help

Google Traduction la visualisation est un pro... Java Architecture for XML ... http://www....iw3A6bTL\_Mg Fresnel Page

localhost:8080/sprean-search-demo/search

W Special:Random Reference Docume... Proquest Tech & B... Fresnel - Display V... Apache Lucene - Q... Spring Tutorial: An ... Langage d'interrog... Using Fre

**ISIOL**

**Search** jean

**Person**

→ [Jean-Yves](#)

Ingénieur

01 49 01 45 40

jean-yves.marie-rose@ademe.fr

**Document**

→ [société face à ses odeurs. Journée ECRIN de l'Environnement, auditoriu...](#)

**Description:**

Conférence d'André Holley du Centre Européen du Goût à Dijon, quelques exemples de traitement des odeurs, le témoignage d'un maire et la clôture de la journée par Danièle Manfredi de la DPPR/SEI du MEDD. Le second DVD présente les ateliers : Sait-on identifier, qualifier et quantifier les odeurs ?, Modélisation de la dispersion des odeurs, Aspects santé, la restitution de ces ateliers et une table ronde de synthèse et perspective avec notamment Jean-Claude Oppeneau.



# FABIENGANDON

**Senior Researcher**  
**Informatics and C**

**Leader for the Wimmics team**  
**Research Center of Sophia-Ant**

**General co-chair** conference W

twitter: [@fabien\\_gandon](#)

**Quote:**"He who controls metadata, controls the Semantic Web: a web to link data and

**Card:** Dr. Fabien Gandon (Fab or Bafie)  
Researcher at INRIA 2004 rt des Lucio

**Mail:** [Fabien.Gandon@inria.fr](mailto:Fabien.Gandon@inria.fr)

**Twitter:** [@fabien\\_gandon](#)

**Phone:** +33492387788

**Skype:** [fabien\\_gandon](#)

**Fax:** +33492387783

card as [vCard](#) or [Card in RDF](#)

Webmark it!

**ISIIL** Webmark Editor

Infos Localize Socialize Synchronize Archive It!

Is this resource representing a person?

First name	Fabien	
Last name	Gandon	
Phone	+33492387788	
Function	Senior Researcher at INRIA, Ph.D. and HDR in Informatics and Comp	
Location	INRIA Sophia-Antipolis (France)	
Email	Fabien.Gandon@inria.fr	

Which kind of relation do you have with this person?

- Follows
- Knows
- Acquittance of
- Apprentice to
- Close friend of
- Collaborates with
- Colleague of
- Employed by

OK Annuler

toward social webmarks

**socially defined online identities**





## Senior Research Informatics and

Leader for the Wimmics team  
Sophia-Antipolis (France)

General co-chair conferen

twitter: @fabien\_gandon

Quote: "He who controls metadata  
**Semantic Web**: a web to link data

Card: Dr. Fabien Gandon (Fab on  
Researcher at INRIA 2004 rt des

Mail: [Fabien.Gandon@inria.fr](mailto:Fabien.Gandon@inria.fr)

Twitter: @fabien\_gandon

Phone: +33492387788

Skype: fabien\_gandon

Fax: +33492387783

card as [vCard](#) or [Card in RDF](#)

Maxime Lefrançois et 3 autres

### Informations

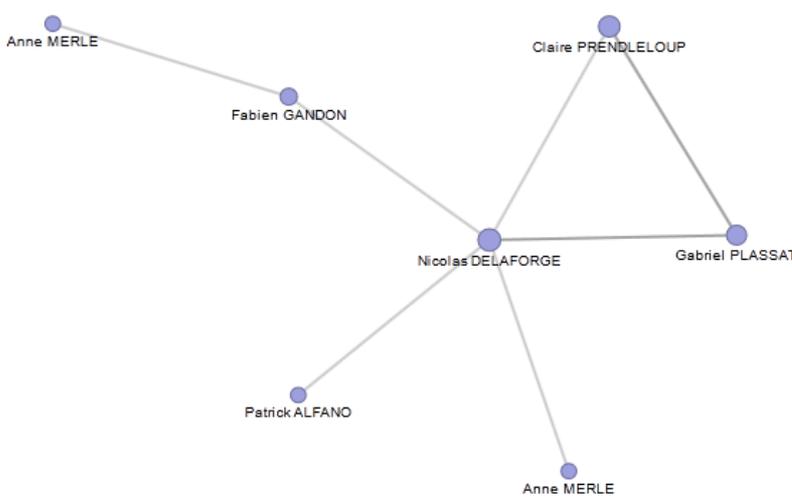
ISI\*IL Explorateur de profil



Nom :	DELAFORGE
Prenom :	Nicolas
Téléphone :	0123456789
Mail :	nicolas.delaforge@inria.fr
Fonction :	Observateur
Site :	Sophia

Groupes Mots-Clés Contributions Réseau social Activité

Niveau :  tags reload



```
graph TD; N[Nicolas DELAFORGE] --- A[Anne MERLE]; N --- C[Claire PRENDELELOUP]; N --- F[Fabien GANDON]; N --- G[Gabriel PLASSAT]; N --- P[Patrick ALFANO];
```



## Senior Research Informatics and

Leader for the Wimmics team  
Sophia-Antipolis (France)

General co-chair conferen

twitter: @fabien\_gandon

Quote: "He who controls metadata  
**Semantic Web**: a web to link data

Card: Dr. Fabien Gandon (Fab on  
Researcher at INRIA 2004 rt des

Mail: [Fabien.Gandon@inria.fr](mailto:Fabien.Gandon@inria.fr)

Twitter: [@fabien\\_gandon](https://twitter.com/fabien_gandon)

Phone: +33492387788

Skype: [fabien\\_gandon](https://www.skype.com/user/fabien_gandon)

Fax: +33492387783

card as [vCard](#) or [Card in RDF](#)

Informations X

**ISI\*IL** Explorateur de profil

Nom : DELAFORGE

Prenom : Nicolas

Téléphone : 0123456789

Mail : nicolas.delaforge@inria.fr

Fonction : Observateur

Site : Sophia

Groupes Mots-Clés Contributions Réseau social Activité

Niveau :  tags reload

```

graph TD
    ND[Nicolas DELAFORGE] --- FG[Fabien GANDON]
    ND --- DJ[Damien JULIENNE]
    ND --- NT[Nouvelles technologies]
    ND --- SY[Syrie]
    ND --- WIP[wikipedia]
    ND --- EME[émeutes]
    ND --- WIS[wiconsin]
    ND --- SOC[SOCIETE]
    ND --- POL[POLITIQUE]
    ND --- FB[facebook]
    ND --- ESP[Espagne]
    ND --- AN[Documentaliste ANONYME]
  
```

Maxime Lefrançois et 3 autres

# search & navigation in info. networks

**Assistant pour la création de groupe**  
Editeur pour la composition de groupes d'experts

Descripteurs: Recherche par mot-clé, Recherche multi-critères

Chercher dans les sources:  CADIC  Thésenet  Qui Fait Quoi

Rechercher:

RELATED: Energie, CAREX, courbes de charge, charge critique, courbe charge, Energie Cités, énergétique, source energie

BROADER: energie, energie, de l'energie, crise

NARROWER:

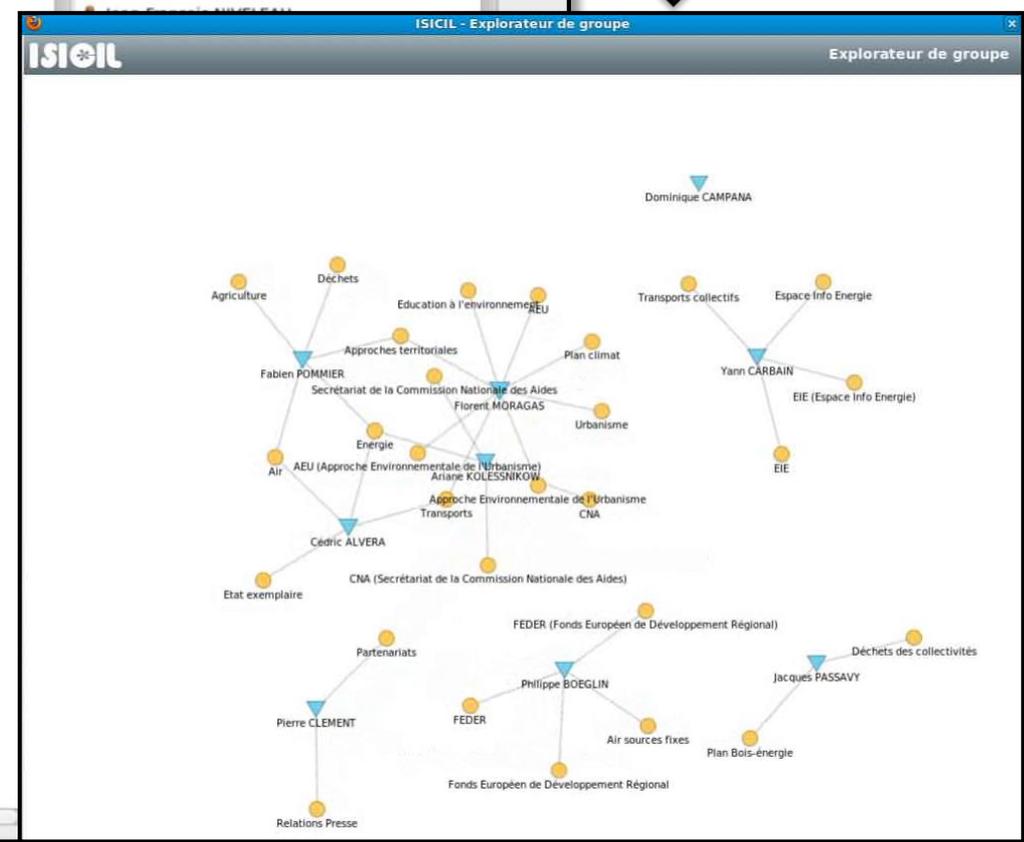
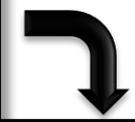
CLOSE MATCH:

**Candidats retenus**

- Jacques PASSAVY
- Philippe BOEGLIN
- Pierre CLEMENT
- Dominique CAMPANA
- Florent MORAGAS
- Ariane KOLESSNIKOW
- Fabien POMMIER
- Yann CARBAIN
- Cédric ALVERA

Liste réponse: Personnes ayant utilisé ces tags

- Christel THURET
- Cédric SOUS
- François SAVOIE
- Christine SAAS
- Gaëlle RICORDEL
- Samuel PUYGRENIER
- Sabine POUDROUX



# Semantic Web plugin for Gephi

The screenshot displays the Gephi 0.7 alpha4 software interface. The main window shows a network graph visualization with nodes colored in blue, red, and green, and edges in grey. The graph is centered and has a star-like shape. The interface includes a menu bar (File, Edit, View, Tools, Window, Plugins, Help) and a toolbar with various icons. The left sidebar contains several panels: 'Partition' and 'Ranking' (with 'Degree' selected), 'Layout' (with 'Force Atlas' selected), and 'Preview Settings'. The 'Ranking' panel shows 'Min size: 10', 'Max size: 40', and a 'Range' slider from 1 to 971. The 'Force Atlas' panel has a 'Run' button and various settings like 'Attraction strength' (10.0), 'Gravity' (30.0), and 'Repulsion strength' (200.0). The right sidebar contains a 'Filters' panel with a 'Reset' button and a 'Hierarchy' section. The bottom of the interface has a 'Global' panel with 'Node' and 'Edge' settings, including font size and color options. The status bar at the bottom indicates 'Workspace 0'.

Gephi 0.7 alpha4 200912041610 - Project 0

File Edit View Tools Window Plugins Help

Overview Data Laboratory Preview

Partition Ranking Preview Graph

Nodes Edges

Degree

Min size: 10 Max size: 40

Range: 1 971

Spline... Apply

Layout Preview Settings

Force Atlas

Run

Adjust by Sizes

Attraction Distrib.

Attraction strength 10.0

Auto stabilize function

Autostab sensibility 0.2

Autostab Strength 80.0

Gravity 30.0

Inertia 0.1

Maximum displacement 10.0

Repulsion strength 200.0

Speed 1.0

Filters

Reset

Hierarchy

Library

- Attributes
- Dynamic
- Edges
- Operator
- Topology
- Saved queries

Queries

Drag filter here

Global Nodes Edges Labels

Node

Font: Dialog.bold, 20 Color:

Size: 50

Edge

Font: Dialog.bold, 20 Color:

Size: 50

Size: Scaled

Color: Unique

Hide non-selected

Configure...

Select Filter

Workspace 0

# activity flow and notification

The screenshot shows the user profile for 'User:ndelaforge' on the ISICIL website. The profile includes a search bar, navigation tabs for 'Activity Dashboard', 'Webscraps', and 'My Page', and a section for 'ISICIL Tags' with a horizontal bar chart. A red box highlights a notification at the bottom of the page.

**User:ndelaforge**

Last login: sept. 21, 2011 4:01 PM  
Joined: août 12, 2011  
Timezone: GMT

**ISICIL Tags**

Tags of one or many users in legend  
Source: sprean server

Tag	Occurrences
isicil	2
web	2
wikipedia	1
ademe	2
INNOVATION	1
SANTE	1
conférences	1
forum	1
sémantique	1
www	1

**Notification:** sept. 21, 2011  
1 Nicolas DELAFORGE

The screenshot shows the user profile for 'User:claire.prendleoup' on the ISICIL website. The profile includes a search bar, navigation tabs for 'Activity Dashboard', 'Webscraps', and 'My Page', and a section for 'ISICIL Tags' with a horizontal bar chart. A red arrow points from the notification in the left screenshot to the bottom of this page.

**User:claire.prendleoup**

Last login: sept. 21, 2011 4:04 PM  
Joined: sept. 21, 2011  
Timezone: GMT

**ISICIL Tags**

Tags of one or many users in legend  
Source: sprean server

Tag	Occurrences
Valorisation des connaissances	1
Veille environnementale	1
Veille documentaire	1
Accueil du public	1
Documentation et information	1

**Recent Activity**

ISICIL  
3 mots ajoutés  
sept. 21, 2011

Page modifiée à 16:04, 21 Sep 2011 par Admin

User:claire.prendleoup >

**ISICIL Tags**

nouveau tag...

**Notification:** Claire PRENDELOUP

# web-scraping: archiving and integrating

ISI\*IL Editeur de Webmark

Title:

URL:

Description:

Tags:

Used tags:

Your recent #ademe #cms #isicil #isicil sweetdeki #mindtouch

Scrap

This option will allow you to preserve this content on a remote server.



ISI\*IL sweetdeki

Webscrap : 51,rev 2

Recherche  Recherche

Main pages

Autres révisions

Révisions : 2

Infos

<http://www.bbc.co.uk/news/>  
Webscrapée par ghusson le 2011-09-04 (08:16:34)  
[Télécharger le fichier MAFF](#)  
[Consulter le webscrap](#)

Preview

BBC Mobile News Sport Weather Travel TV Radio

Home UK Africa Asia\_Pac Europe Latin America Mid-East South Asia US & Canada Business Health Sci/Envir

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LATEST: Former IMF chief Dominique Strauss-Kahn returns to France after US sex assault charges were dropped

**Strauss-Kahn arrives back in France**

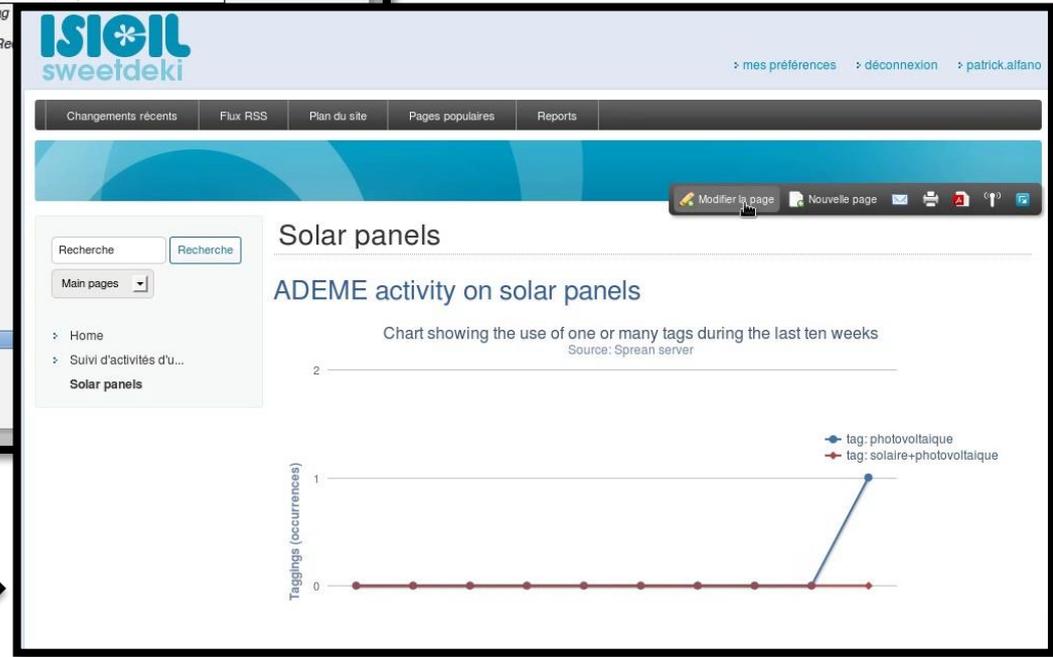
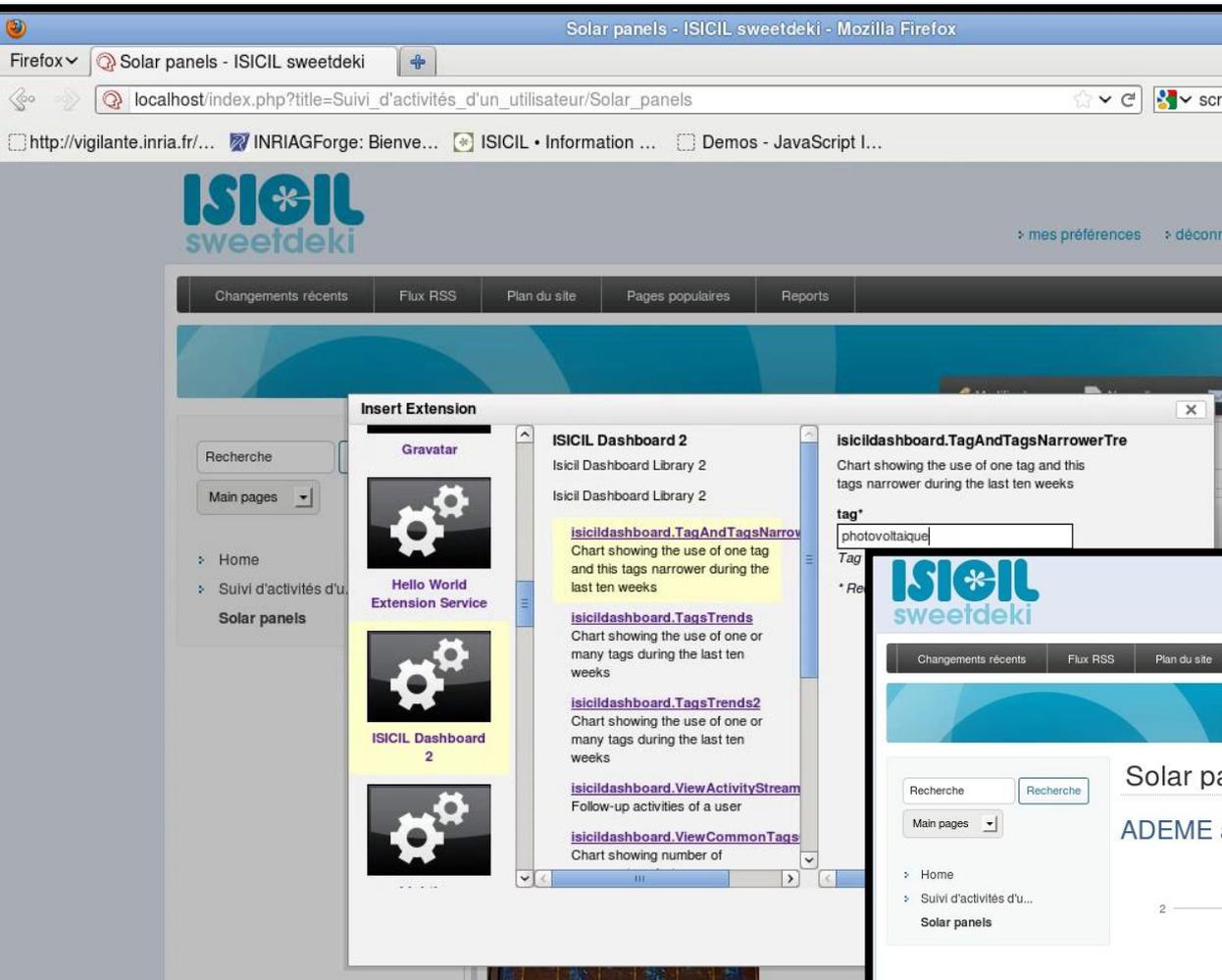
Former IMF head Dominique Strauss-Kahn arrives back in France from the US, after sex assault charges against him were dropped.

Strauss-Kahn back in France French Socialist rivals face off

What now for Strauss-Kahn? What went right and wrong?

[http://www.bbc.co.uk/news/world/asia\\_pacific/](http://www.bbc.co.uk/news/world/asia_pacific/)

# create dynamic reports in the wiki



- MAIN
  - Sandbox
  - WikiNEXT - How To
  - WikiNEXT V2
  - Freebase sample
  - Pavel Arapov
  - TODO List
  - City Application
  - JavaScript Programmable SPARQL Query
  - Get Started!
  - Test Protocol
  - Test results
  - CompareDBpediaValues

- YOUR PAGES
  - Template Data Example
  - Another subpage
  - Subpage test edit
  - Test page creation
  - Demo page
  - Demo Graph (DBPedia.org)
  - DBPedia - after G.Washington
  - DBPedia - colors
  - Sparql JS JQuery
  - Macros
  - Libraries (plugins)
  - Sandbox
  - Linked Movie Database
  - Search result template
  - Plus info template
  - Canvas Example
  - SPARQL JS with Cache

# Welcome to WikiNEXT

You need to be logged in to create/edit and other actions. Please click in right-top corner "Login"

[Learn more »](#)

## WikiNEXT Pages

Create your own application from scratch. Check out our **tutorial**

[Tutorial »](#)

## DBPedia

We have couple examples that use DBPedia.org, see how you create your own application that will work with DBPedia.org

[Examples »](#)

## WikiNEXT API

To learn more about WikiNEXT API.

[View details »](#)

## Recent changes

Page	Change At	By
<a href="#">City Application</a>	Wed Oct 09 2013	<a href="#">Pavel Arapov</a>
<a href="#">Nice</a>	Mon Oct 07 2013	<a href="#">Pavel Arapov</a>
<a href="#">Dialog test</a>	Mon Oct 07 2013	<a href="#">Pavel Arapov</a>
<a href="#">CompareDBpediaValues</a>	Mon Sep 30 2013	<a href="#">Julien Cojan</a>
<a href="#">CompareValues</a>	Mon Sep 30 2013	<a href="#">Julien Cojan</a>
<a href="#">Pavel Arapov</a>	Wed Sep 25 2013	<a href="#">Amel Ben</a>
<a href="#">Paris</a>	Tue Sep 24 2013	<a href="#">Amel Ben</a>
<a href="#">Cloned: City template</a>	Mon Sep 23 2013	<a href="#">Michel Buffa</a>
<a href="#">Template Data Example</a>	Mon Sep 23 2013	<a href="#">Pavel Arapov</a>
<a href="#">TODO List</a>	Mon Sep 23 2013	<a href="#">Pavel Arapov</a>

**gave birth to ...**

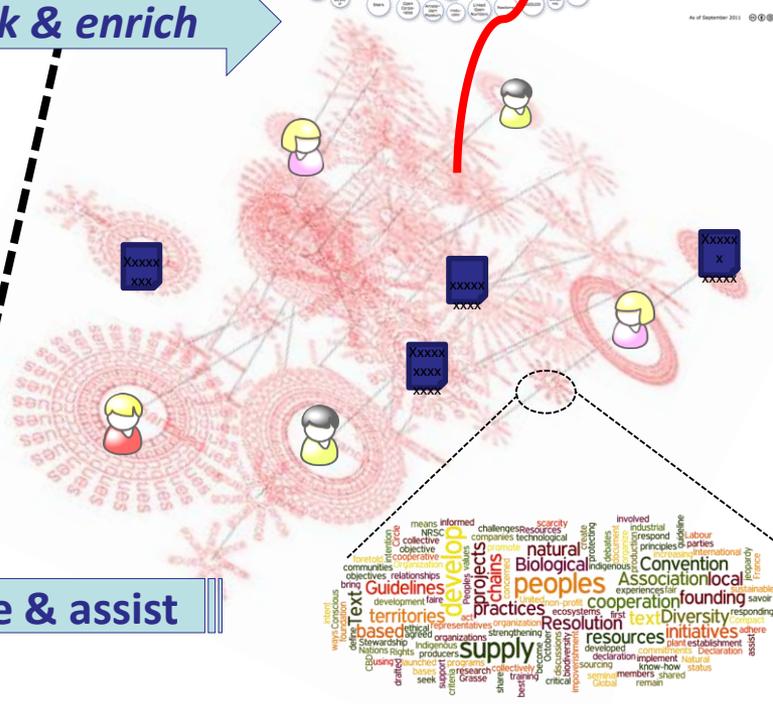
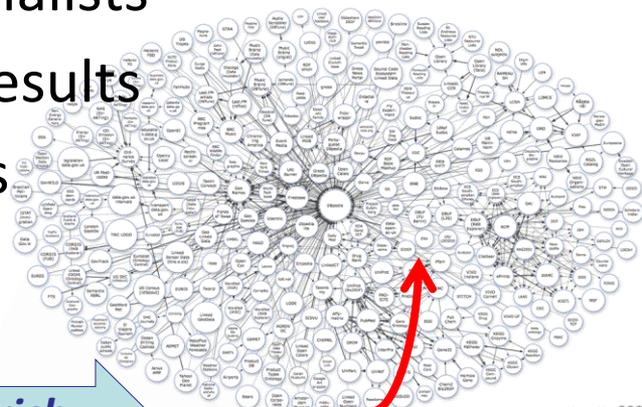
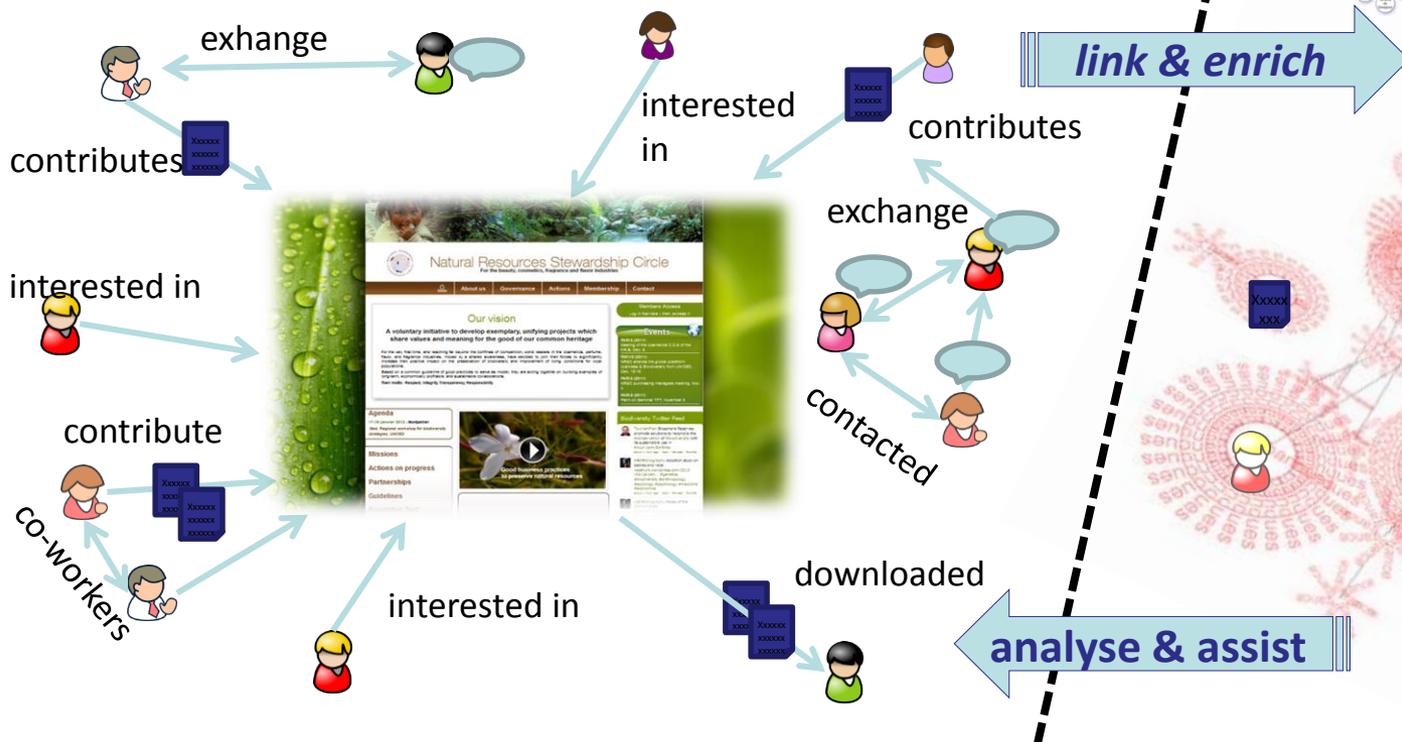


« Unveil the semantic imprint from within your Community »

cooperative society of social semantic web specialists

industrialization and maintenance of research results

developing webmarks as linked semantic traces



1993

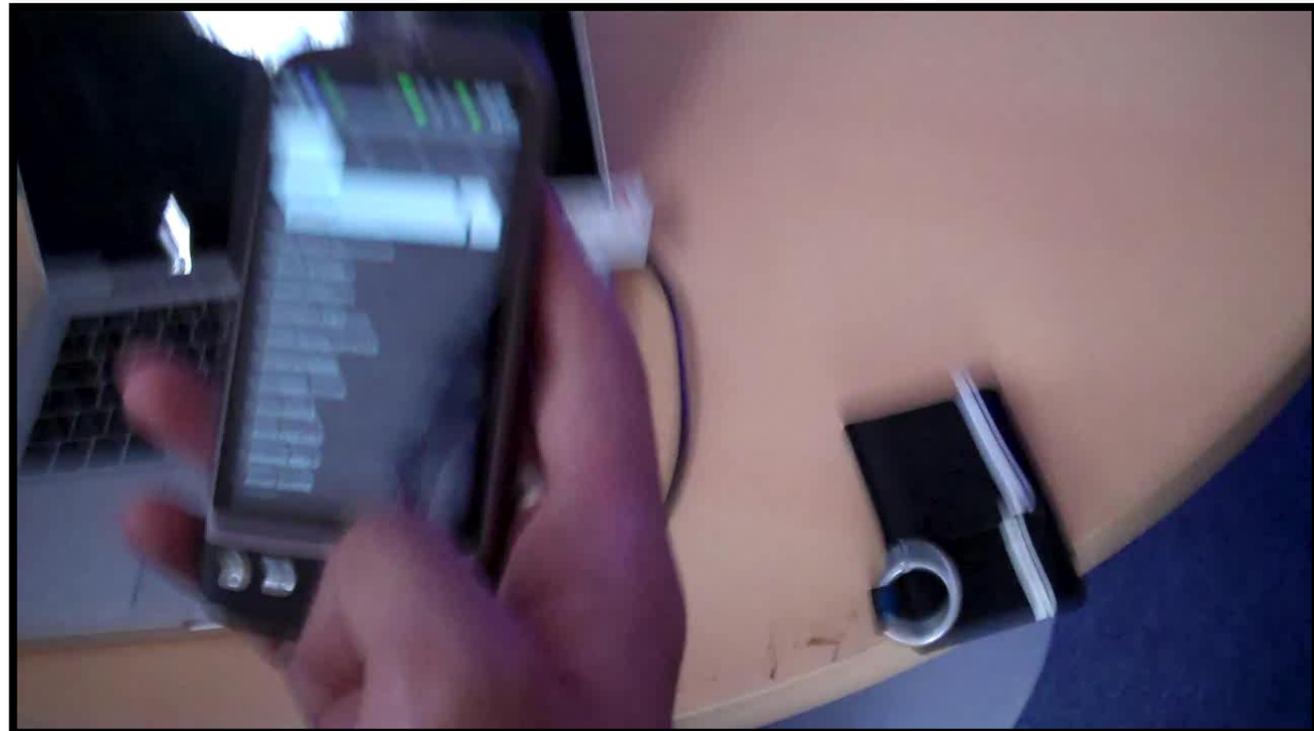
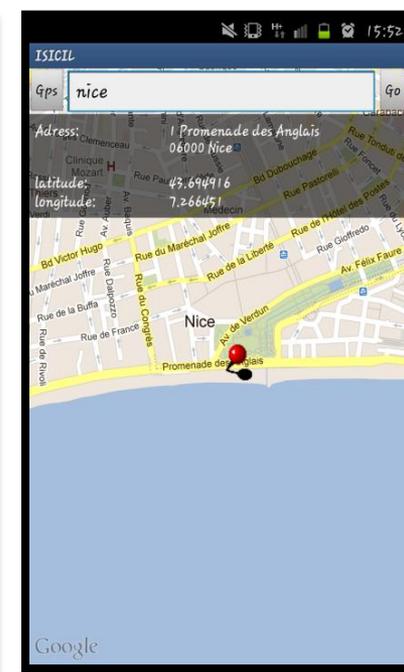
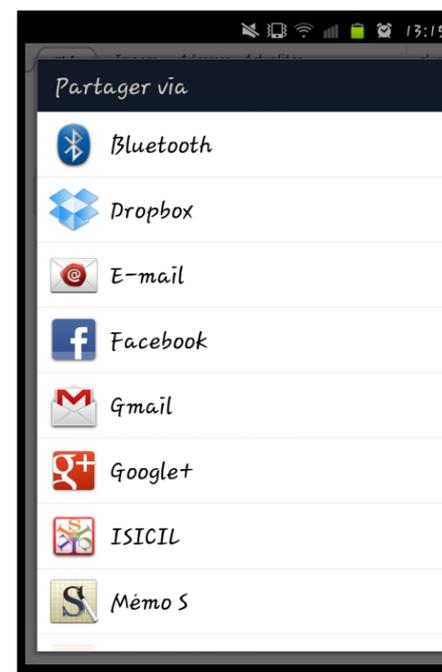
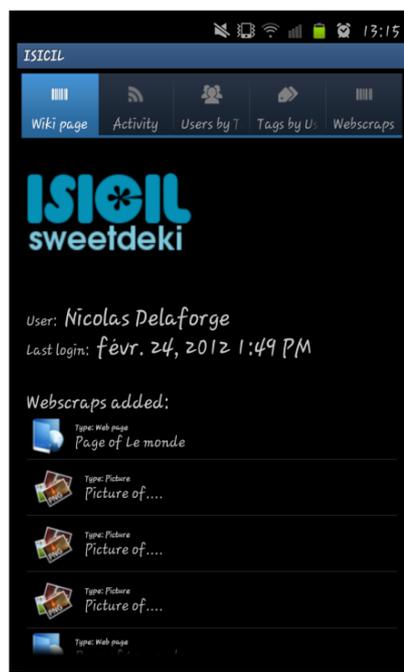


all in one

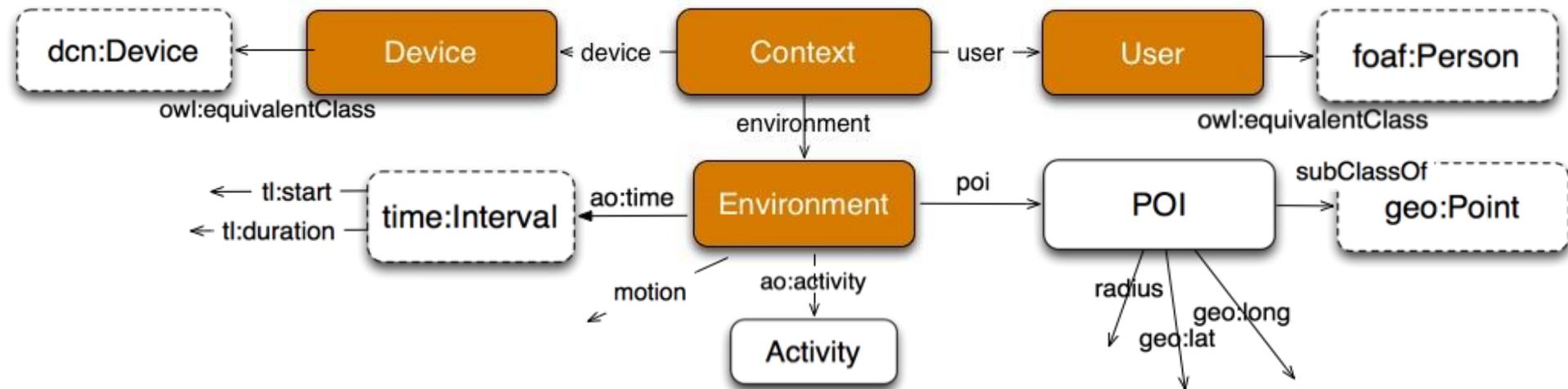
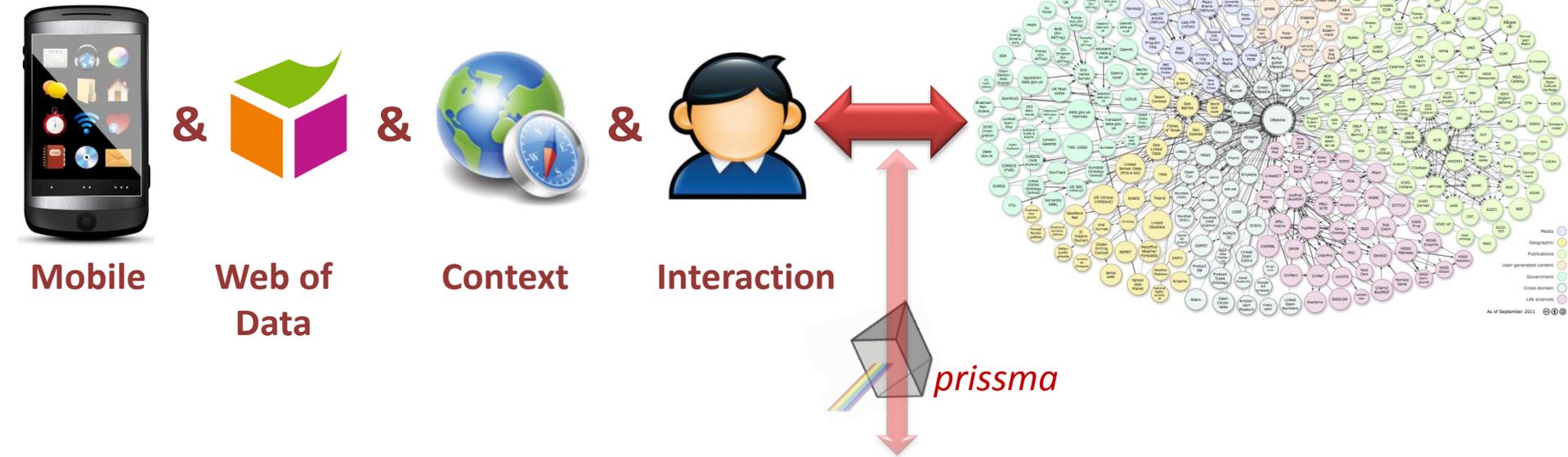


2013

# going mobile



# mobile access to web of data



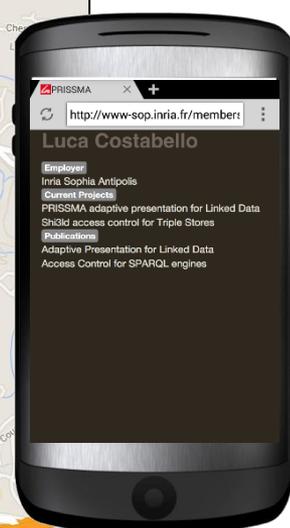
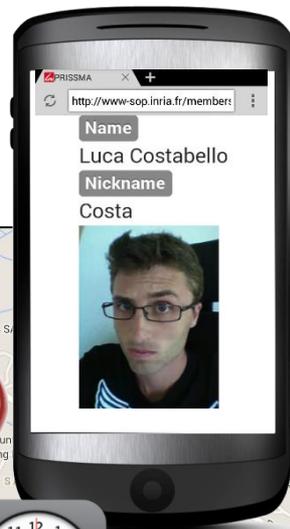
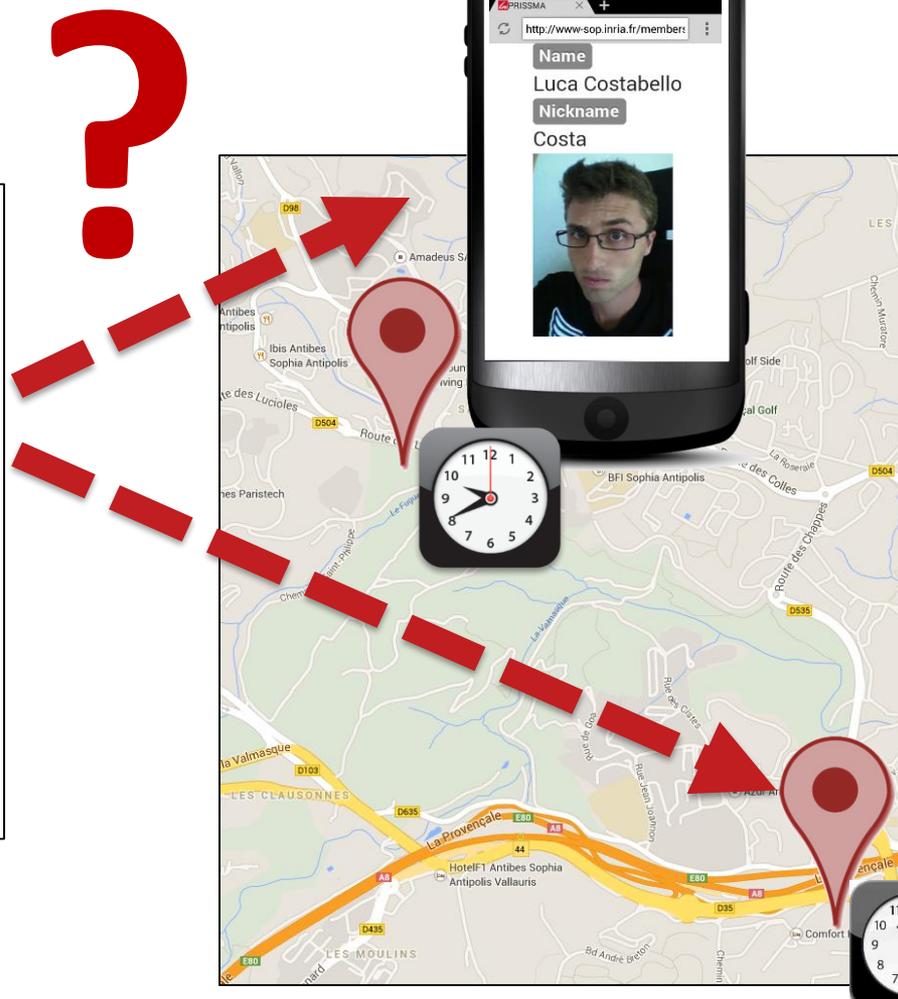
# Context-aware Adaptation for Linked Data?



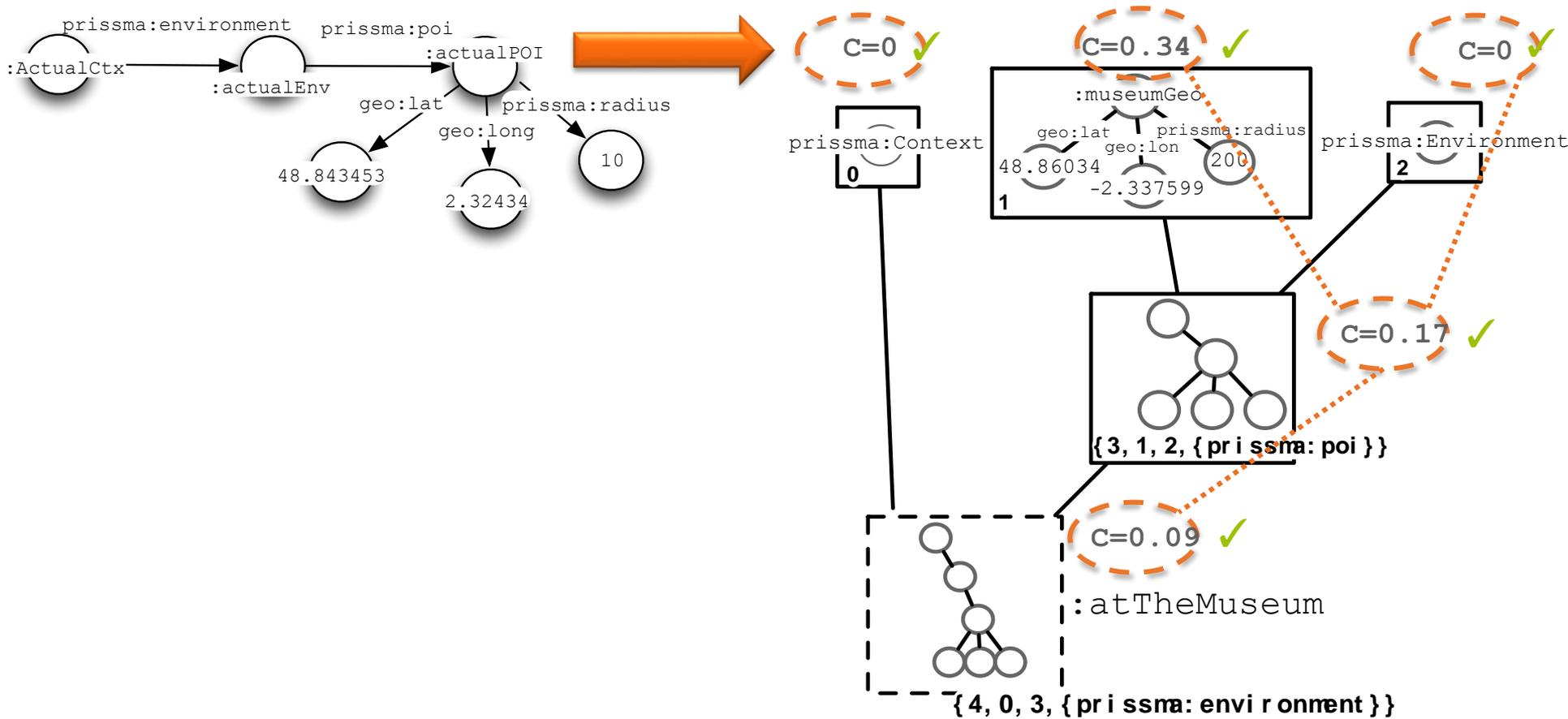
```
<?xml version="1.0" encoding="utf-8" ?>
<rdf:RDF
  xmlns:base="http://www.sop.inria.fr/members/Luca.Costabello"
  xmlns:rdfs="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:foaf="http://xmlns.com/foaf/0.1/"
  xmlns:geo="http://www.w3.org/2003/01/geo/wgs84_pos#"
  xmlns:cert="http://www.w3.org/ns/rout/cert">

  <foaf:PersonalProfileDocument rdf:about="">
    <foaf:maker rdf:resource="me"/>
    <foaf:primaryTopic rdf:resource="me"/>
  </foaf:PersonalProfileDocument>

  <foaf:Person rdf:ID="me">
    <foaf:name>Luca Costabello</foaf:name>
    <foaf:givenname>Luca</foaf:givenname>
    <foaf:family_name>Costabello</foaf:family_name>
    <foaf:nick>lukostoz</foaf:nick>
    <foaf:gender>male</foaf:gender>
    <foaf:mbox_sha1sum>1880ec48f27223278d0e6c476e3b7133</foaf:mbox_sha1sum>
    <foaf:mbox_sha1sum>208c9e87f95619c4f08668407fb22144462b2</foaf:mbox_sha1sum>
    <foaf:mbox_sha1sum>11f309801ee8c5a2b282a953747178a514c52</foaf:mbox_sha1sum>
    <foaf:homepage rdf:resource="http://www.sop.inria.fr/members/Luca.Costabello"/>
    <foaf:depiction rdf:resource="http://www.sop.inria.fr/members/Luca.Costabello/images/depiction-luca.jpg"/>
    <foaf:phone rdf:resource="tel:+33492385082"/>
    <foaf:workplacehomepage rdf:resource="http://www.inria.fr"/>
    <foaf:schoolHomepage rdf:resource="http://tdict.unice.fr"/>
    <foaf:workInfoHomepage rdf:resource="http://www.sop.inria.fr/members/Luca.Costabello"/>
    <foaf:based_near>
      <geo:Point geo:lat="43.615811" geo:long="7.068532"/>
    </foaf:based_near>
    <cert:key>
      <cert:RSAPublicKey>
        <cert:exponent rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">65537</cert:exponent>
      </cert:RSAPublicKey>
    </cert:key>
    <foaf:knows>
      <foaf:Person>
        <foaf:name>Fabien Gandon</foaf:name>
        <foaf:mbox_sha1sum>ec4332f6a4487ec208994df1d4ed32c96b879</foaf:mbox_sha1sum>
        <rdfs:seeAlso>
          <rdfs:resource="http://ns.inria.fr/fabien.gandon/foaf.rdf"/>
        </foaf:Person>
      </foaf:knows>
      <foaf:Person>
        <foaf:name>Ivan Herman</foaf:name>
        <foaf:mbox_sha1sum>Sac8832d5f0812aa1775e2763e1676b0bf4e88b</foaf:mbox_sha1sum>
        <rdfs:seeAlso>
          <rdfs:resource="http://www.ivan-herman.net/foaf.rdf"/>
        </foaf:Person>
      </foaf:knows>
    </foaf:Person>
  </rdf:RDF>
```



# fault-tolerant matching with graph-edit distances

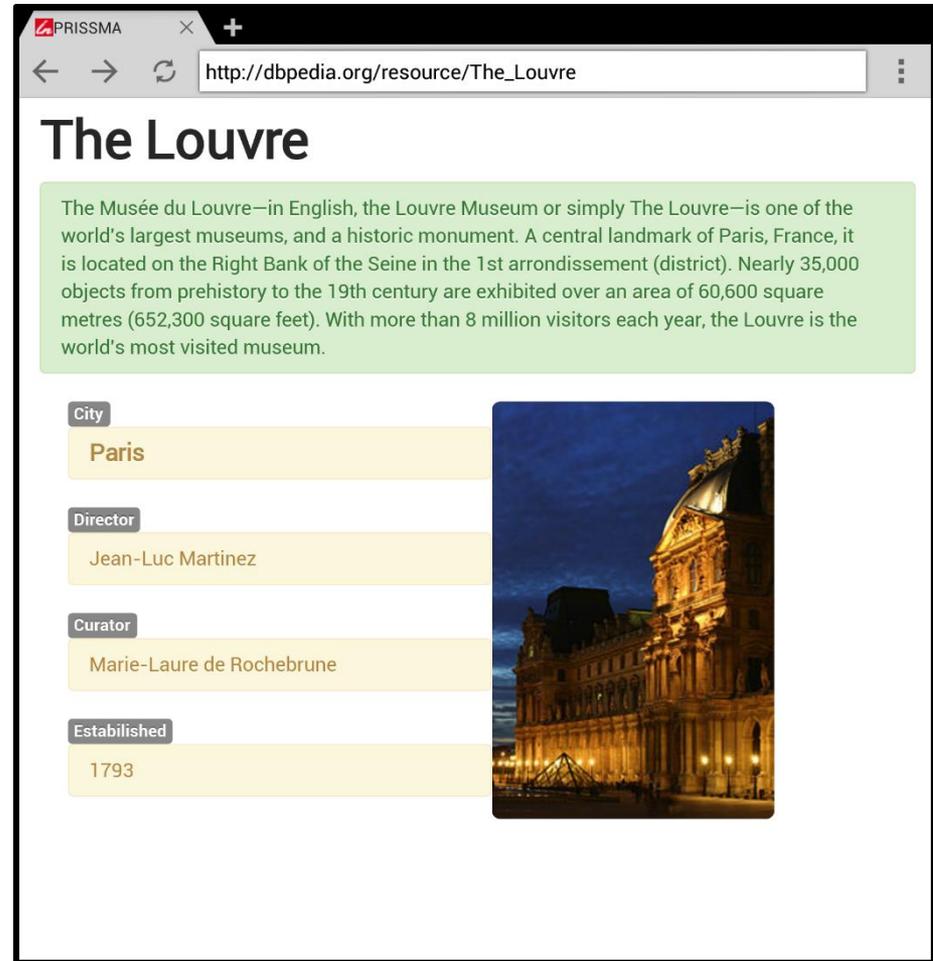


# examples

## PRISSMA Browser for Android



Smartphone, user walking  
in museum town.



Tablet, user at home.

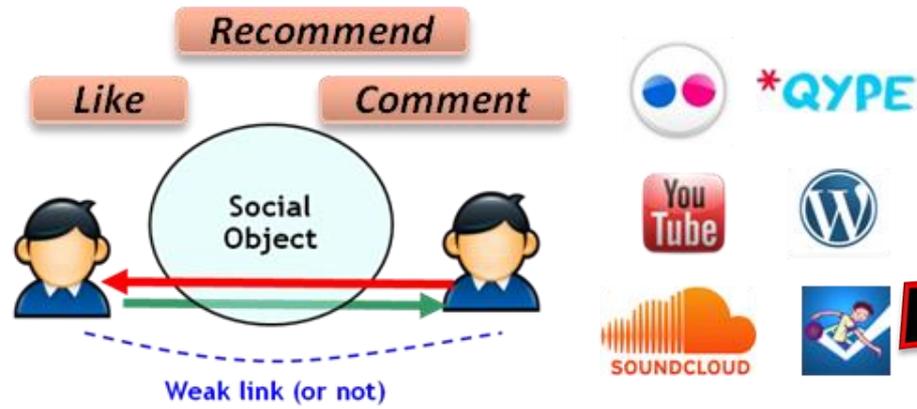


when the link makes sense

linking data to create knowledge

# contextual notification

propagation of interests for suggestion

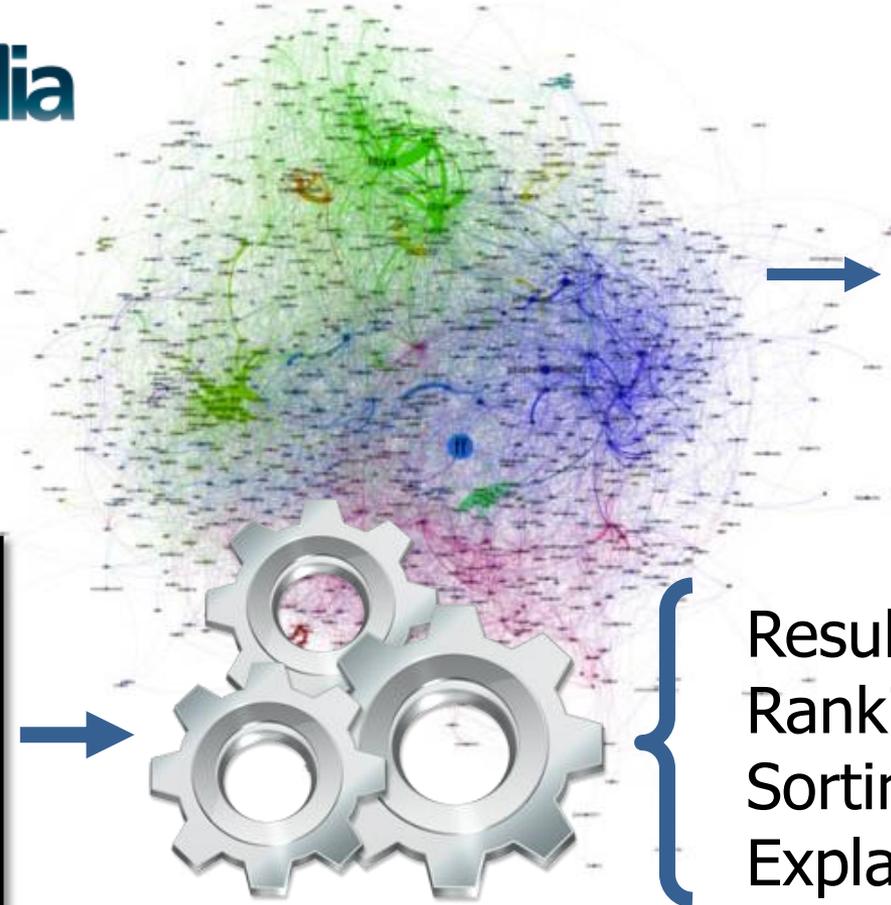
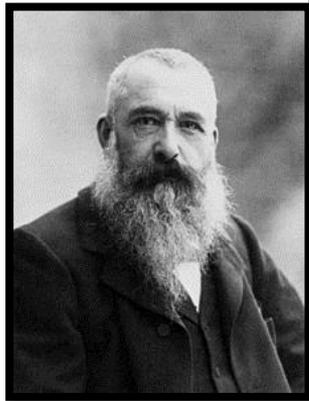


$$a(i, n + 1, t) = \frac{w_s * s(i, n + 1, t) + \sum_{j, e_{ij}} [w_p(l(e_{ij}), t) * a(j, n, t)]}{w_s + \sum_{j, e_{ij}} w_p(e_{ij})}$$

# Discovery Hub



DBpedia:  
Claude Monet



- |   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |

Results identification  
Ranking  
Sorting/categorization  
Explanation

Let  $KB$  be the set of all triples in the triple asserted and inferred store.

$$depth(t) = \begin{cases} depth(t) = 0 & \text{if } t = T \text{ the root of the hierarchy} \\ depth(t) = 1 + \text{Min}_{s_2: (t, rdf:subClassOf, s_2) \in KB} depth(s_2) & \text{otherwise} \end{cases}$$

$$Types(x) = \{t; (x, rdf:type, t) \in KB\}$$

$$Tmax(x) = \{t \in Types(x); \forall t_i \in Types(x); depth(t) \geq depth(t_i)\}$$

$$Neighbor(o) = \{x; ((o, p, x) \in KB \vee (x, p, o) \in KB) \wedge p \neq rdf:type\}$$

$$NT(o) = \{(t, c); t \in Tmax(x); n \in Neighbor(o); c = \{n \in Neighbor(o); t \in Tmax(n)\}\}$$

$$FNT(o) = \left\{ (t, c) \in NT(o); \frac{c}{\sum_{(n, c) \in NT(o)} c_i} \geq \text{threshold} \right\}$$

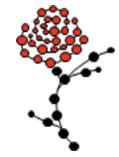
$$w(i, o) = \begin{cases} 0 & \text{if } \exists t \in Types(i); t \in FNT(o) \\ 1 + |ccat(i, o)| & \text{otherwise} \end{cases}$$

where

$$ccat(i, o) = \{cat; (i, dcterms:subject, cat) \in KB \wedge (o, dcterms:subject, cat) \in KB\}$$

$$a(i, n + 1, o) = s(i, n, o) + \sum_i w(i, o) * \frac{a(j, n, o)}{\text{degree}_j}$$

$$a(i, n) = \prod_{o \in O} [a(i, n, o)] / \log(\text{degree}_i)$$



# Discovery Hub (Inria, Alcatel Bell Lucent)

The screenshot shows the Discovery Hub website in a browser window. The browser's address bar displays "discoveryhub.co". The page features a search bar with the placeholder text "Start your exploration here...". Below the search bar is a red navigation bar with "Login/Register" on the left and "Random" on the right. The main content area is divided into four sections:

- Exploratory search:** A section with a large magnifying glass icon. The text describes the site as an exploratory search engine built on top of Wikipedia, designed to find interesting results and propose redirections to other platforms like YouTube and Deezer.
- Get recommendations on your interests:** A section with a background image of green grass. The text asks if the user wants film recommendations related to writers they like, or discover bands at the crossroad of an electro and rock record-labels, or more complex composite recommendations based on their deepest interests.
- Understand a recommendation:** A section with a large lightbulb icon. The text explains that Discovery Hub provides tools to understand why they have these recommendations, as the most important part is knowing why they get it.
- Share your findings with friends:** A section with a purple background. The text states that Discovery Hub is now more social, allowing users to share searches and collections on Twitter, and follow their friends and/or their Discovery Hub followers.

At the bottom left of the page, there is a small red button labeled "Give us a Feedback".

ELIZA: You're not really talking about me -- are you ?  
YOU: What?  
ELIZA: What do you think ?  
YOU: I mean, I feel happy to be writing right now, to be typing this as we speak. Lately, I've had writer's block.  
ELIZA: You say you mean ?  
YOU: That's what I said.  
ELIZA: Can you elaborate on that ?  
YOU: I only really feel happy when I'm writing.  
ELIZA: How long have you been writing ?  
YOU: Always, but I've been writing seriously since I was eighteen.  
ELIZA: What incident are you thinking of ?  
YOU: Um.  
ELIZA: What does that suggest to you ?  
YOU: I don't think it's enough, to only be happy when you write.  
ELIZA: Does that trouble you ?  
YOU: ...Um, because you can't write all the time. And then there's the real world, and you still have to deal with real people.  
ELIZA: What are your feelings now ?  
YOU: I've been thinking a lot of that poem by Yeats: "The Man and the Echo."  
Do you know it?  
ELIZA: Do you say you've been thinking a lot of that poem by yeats: "the man and the echo for some special reason ?  
YOU: Yes

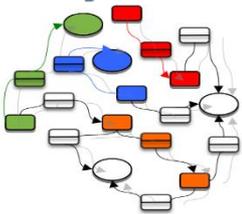


digital VT100

digivox

ELIZA... talking to machines

DBpedia



Pattern repository

*owner(Thing, Thing)*

[R:Person] purchased the [D:Thing]  
[D:Thing] owner [R:Thing]  
[D:Thing] was bought by [R:Thing]

*starring(Work, Person)*

[D:Work], played by [R:Person]  
[D:Work] stars [R:Person]  
[D:Work] film stars [R:Person]

QALD-2 Open Challenge:

	total	answered	right	partially right	precision	recall	f-measure
Groovy Answering	100	74	44	17	0.79	0.8	0.79
SemSeK	100	80	32	7	0.44	0.48	0.46
Alexandria	100	25	5	10	0.43	0.46	0.45
MHE	100	97	30	12	0.36	0.4	0.38
QAKis	100	35	11	4	0.39	0.37	0.38

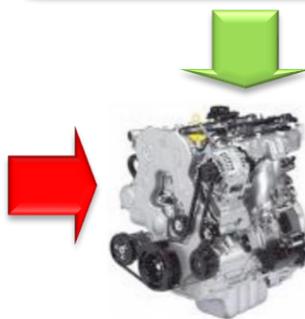


Who is starring in Batman Begins?

EAT and NE recognition:  
Stanford NER+ DBpedia

Query pattern

[Person] is starring in [Movie]?



ENTAILMENT ENGINE/  
SIMILARITY ALGORITHM

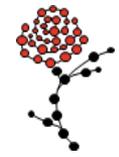
```
select * where {
  dbpr:Batman_Begins dbpr:starring ?v .
  OPTIONAL {?v rdfs:label ?l
    filter(lang(?l)="en")} }
```



Christian Bale, Michael Caine, ...

question  
answering  
over  
linked  
data

[Cabrio, et al.]



# QAKIS demo

QAKIS - Mozilla Firefox

Fichier Édition Affichage Historique Marque-pages Outils ?

QAKIS +

dbpedia-test.inria.fr/qakis/

Google



QA  
KiS

Question Answering  
wiKiframework-based  
System

Get answers! Clear

Examples:

[demo](#) -- [contact@dbpedia.fr](mailto:contact@dbpedia.fr)



FONDAZIONE  
BRUNO KESSLER



Inria  
INVENTEURS DU MONDE NUMÉRIQUE

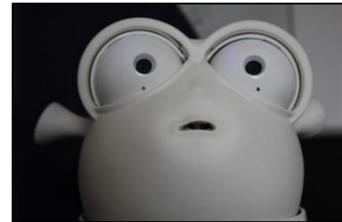
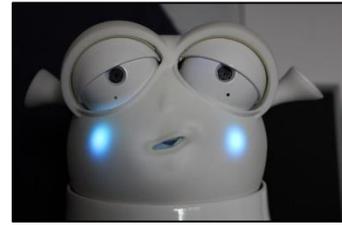
# EMOTION

detection

transfer

adaptation

**WWW**



# ns.inria.fr/emoca

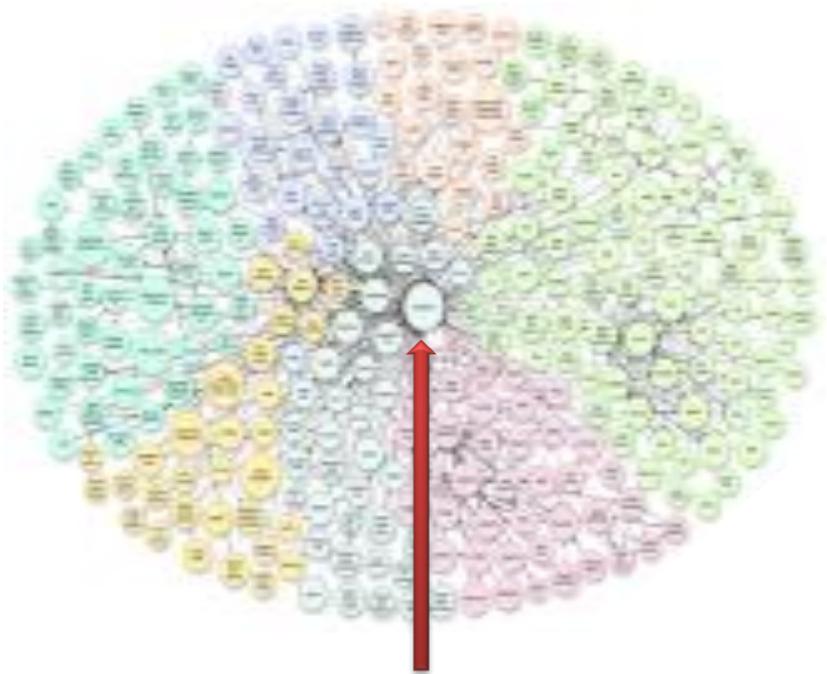
The screenshot displays the Emoca software interface, which is used for emotion recognition and synthesis. It is divided into several panels:

- Face detection:** Shows a video frame (Frame n°: 258) with a red bounding box around a man's face. The eyes and mouth are highlighted with colored overlays. Sliders for Eyes position (Width: 0.59, Height: 0.13, X: 0.2, Y: 0.21) and Mouth position (Width: 0.45, Height: 0.25) are visible. Other sliders include Brightness, Contrast, and Open. A "Reset" button is present.
- Emotion ontology:** Displays configuration for Person (FrankHerbert) and Stimulus (BlackWidowPhoto). It shows Valence (0.4783555481494431) and Arousal (0.684709315221978) values. An "Ask" button is located below. The Visualization Result is "<SupriseNormal>".
- Avatar:** Shows sliders for Eyebrow configuration (LeftEyebrow, rightEyebrow) and Mouth configuration (Left mouth, Right mouth, Top mouth, Bottom mouth, Width mouth). A diagram of a face with control points is shown on the right.
- Valence map:** A 3D scatter plot showing the relationship between MouthLeft (X-axis, 0.0000 to 0.8000), EyebrowLeft (Y-axis, 0.0000 to 0.8000), and Valence (Z-axis, 0.00000 to 1.00000). The plot shows a cluster of points transitioning from blue (low valence) to red (high valence). The File Log shows a result of 0.47.
- Arousal map:** A 3D scatter plot showing the relationship between MouthLeft (X-axis, 0.0000 to 0.8000), EyebrowLeft (Y-axis, 0.0000 to 0.8000), and Arousal (Z-axis, 0.00000 to 1.00000). The plot shows a cluster of points transitioning from blue (low arousal) to red (high arousal). The File Log shows a result of 0.68.

[Berthelon, et al.]

**typed graph machinery**





e.g. DBpedia.fr

### SPARQL Explorer for <http://dbpedia.org/sparql>

SPARQL:

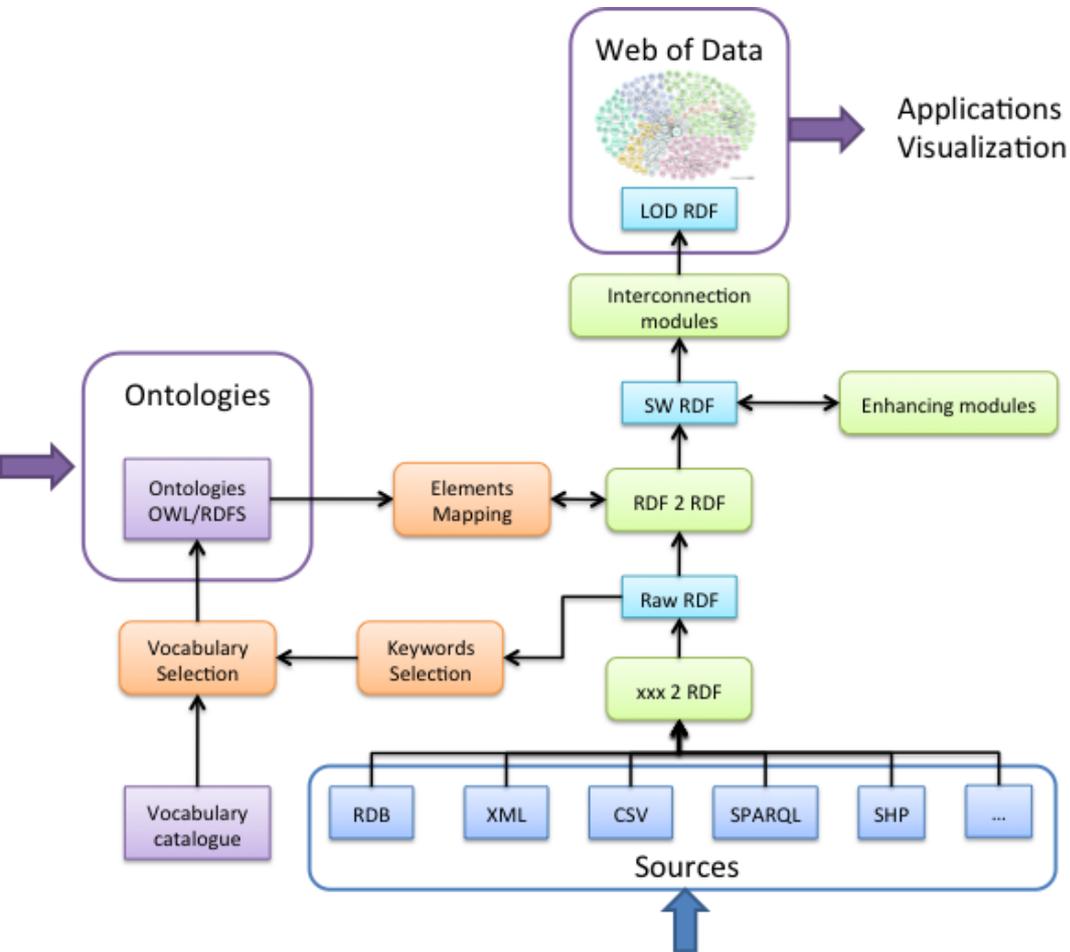
```
PREFIX owl: <http://www.w3.org/2002/07/owl#>  
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>  
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>  
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>  
PREFIX foaf: <http://xmlns.com/foaf/0.1/>  
PREFIX dc: <http://purl.org/dc/elements/1.1/>  
PREFIX : <http://dbpedia.org/resource/>  
PREFIX dbpedia2: <http://dbpedia.org/property/>  
PREFIX dbpedia: <http://dbpedia.org/>  
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
```

Results:

Powered by [OpenLink Virtuoso](#) and [d2pedia](#)

# publication

## Datalift process



## demo

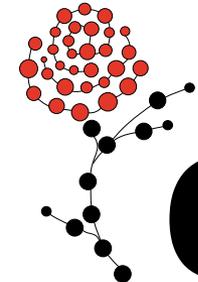
- on click setup
- raw data import
- RDF transformation
- Web publication
- online querying



DataLift-win.zip

HAL 9000





# corese/kgram

- Semantic Web Factory: RDF/S, SPARQL 1.1 Query & Update, Inference Rules
- Open Source CeCILL-C
- Knowledge Graph Abstract Machine with 3 Proxies (Producer, Matcher, Evaluator)



3 ANR, 2 RNRT, 1 region project, 4 european project,  
4 industry grants, 10 academic grants,  
>30 applications, 23 PhD, 9 edu. Institutions, etc.

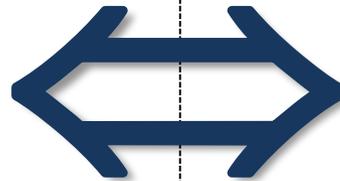
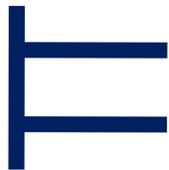
left( $x, y$ )

left( $y, z$ )

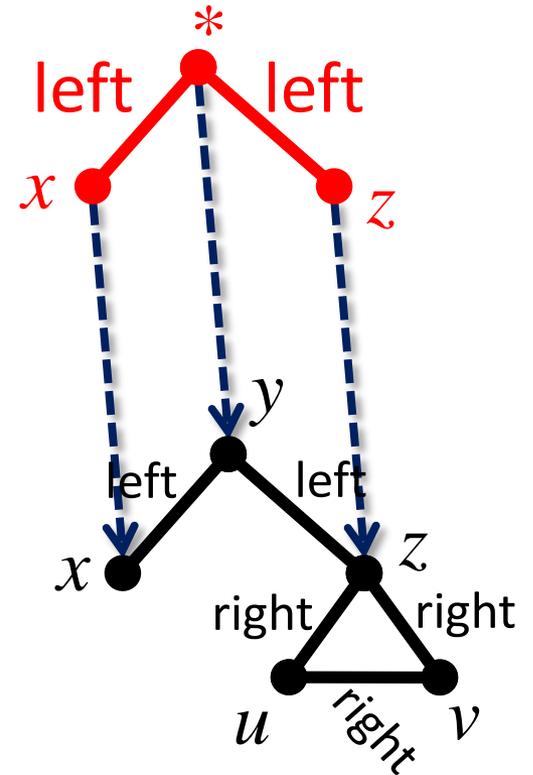
right( $z, v$ )

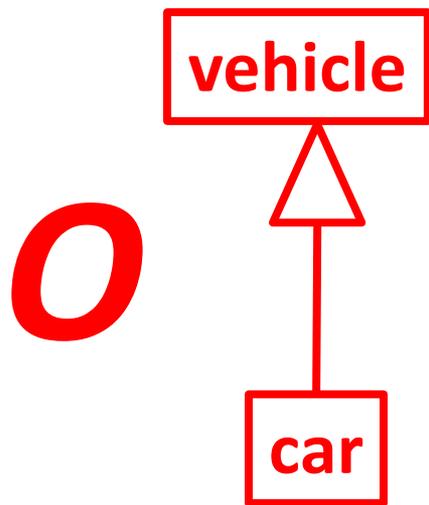
right( $z, u$ )

right( $u, v$ )

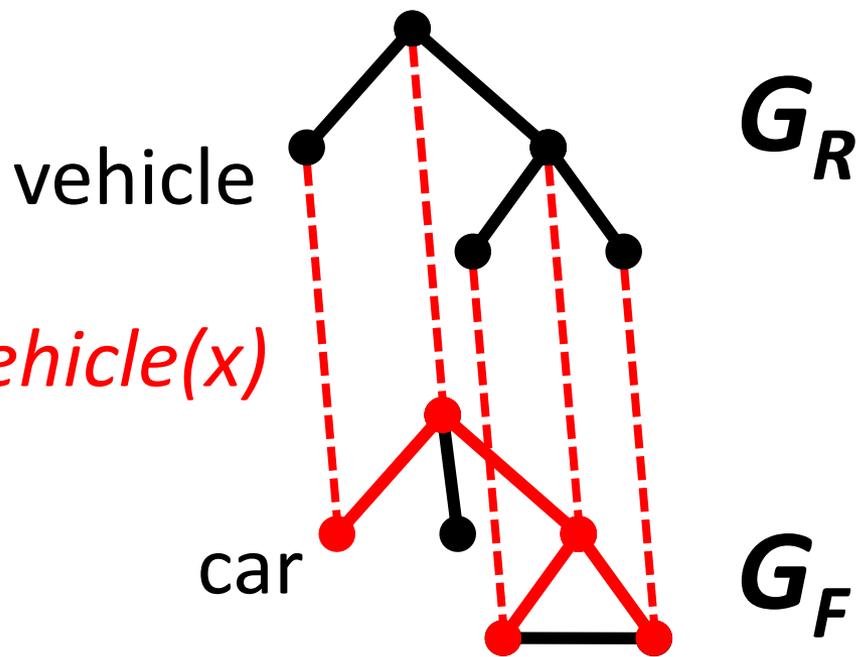


**left( $x, ?p$ )**    **left( $?p, z$ )**





$car(x) \Rightarrow vehicle(x)$



$$F \wedge O \rightarrow R \Leftrightarrow G_F \leq G_R$$

mapping modulo an ontology

Loaded files:

Debug Reload

Logs:

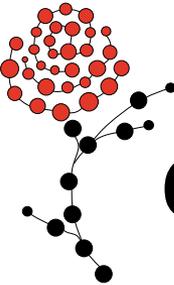
```
reset...
RDFS/Rules : 0.00 s
Load Triples : 488
Load Relations : 423
Load Concepts : 135

done.
```

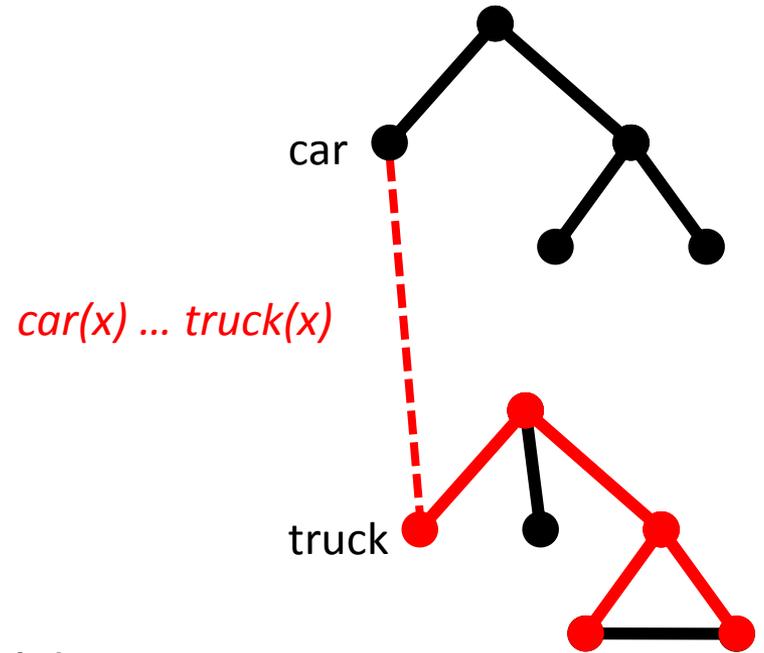
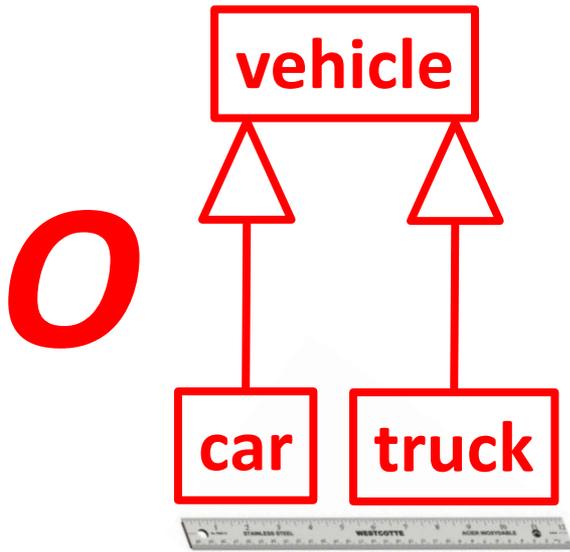


my watch has only one hand,  
it is not broken, it is a feature.

**why approximation is interesting**



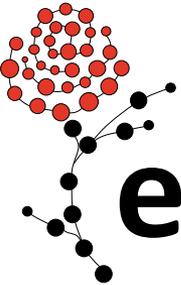
# e.g. controlled approximation



$$t_1(x) \Rightarrow t_2(x) \rightarrow d(t_1, t_2) < \text{threshold}$$

$$\forall (t_1, t_2) \in H_c^2 \text{ let } \text{dist}(t_1, t_2) = \min_{\{t \geq t_1, t \geq t_2\}} \left( l_{H_c}(t_1, t) + l_{H_c}(t_2, t) \right)$$

$$\forall (t_1, t_2) \in H_c^2; t_1 \leq t_2 \text{ let } l_{H_c}(t_1, t_2) = \sum_{\{t \in \langle t_1, t_2 \rangle, t \neq t_1\}} \left[ \frac{1}{2^{\text{depth}(t)}} \right]$$



# e.g. approximated search

KMP >> Scénarios 2 et 3: Rechercher un partenaire

Entreprise [Philips Semiconductors](#)  
Distance sémantique  [d=42]

- [Concevoir... Design de test... 3G](#)

Entreprise [Philips Semiconductors](#)  
Distance sémantique  [d=42]

- [Concevoir... Design de test... 2G](#)

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- [Concevoir... Design de test... Bluetooth](#)

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Equipe [Antennes actives intégrées et mic](#)  
Distance sémantique  [d=50]

- [Concevoir... Composants et systèmes](#)

Equipe [Nouvelles antennes pour télécomm](#)  
Distance sémantique  [d=50]

- [Concevoir... Antenne miniature... Env](#)

### Results of search for teams/skills

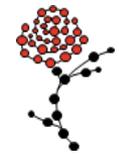
Results summary: Number of teams: 2 (total with approx. = 3)  
Number of skills: 5 (+5 approx.)

Request summary: I'm looking for teams that have skill(s) characterized by Design.

Team	Action	Deliverable	Environment	Resources
MST Baseband Development	Design	Component Design	3G Handset	Digital Des Eng
Nexperia Mobile Multimedia	Design	System Design	CellularTerminals [Mobile Multimedia]	Digital Des Eng
Nexperia Mobile Multimedia	Design	component Architecture	CellularTerminals [Mobile multimedia]	Computing Architecture
Nexperia Mobile Multimedia	Design	Component Design	CellularTerminals [Mobile multimedia]	Digital Des Eng
Nexperia Mobile Multimedia	Design	Software	CellularTerminals [Mobile multimedia]	SW eng
MST Baseband Development	Design [Architecture]	component Architecture	3G Handset	Computing Architecture [Baseband architecture]
Nexperia Mobile Multimedia	Introduce	Deliverable	CellularTerminals [Mobile multimedia]	Computing Architecture
MST Baseband Development	Develop	Algorithm [HW boards/platforms]	CellularTerminals	SW eng [HW/Board eng]

Skills of the team:  
• Design component Architecture CellularTerminals [Mobile multimedia] (3)  
• Design System Design CellularTerminals [Mobile Multimedia] (2)  
• Design Component Design CellularTerminals [Mobile multimedia] (2)  
• Design Software CellularTerminals [Mobile multimedia] (2)  
• Introduce Deliverable CellularTerminals [Mobile multimedia] (2)

Modify search criterions | New search



# Plugin Gephi

[Demairy, et al.]

Semantic Web Import - Éditeur

Semantic Web Import x

Graphs

rdfs

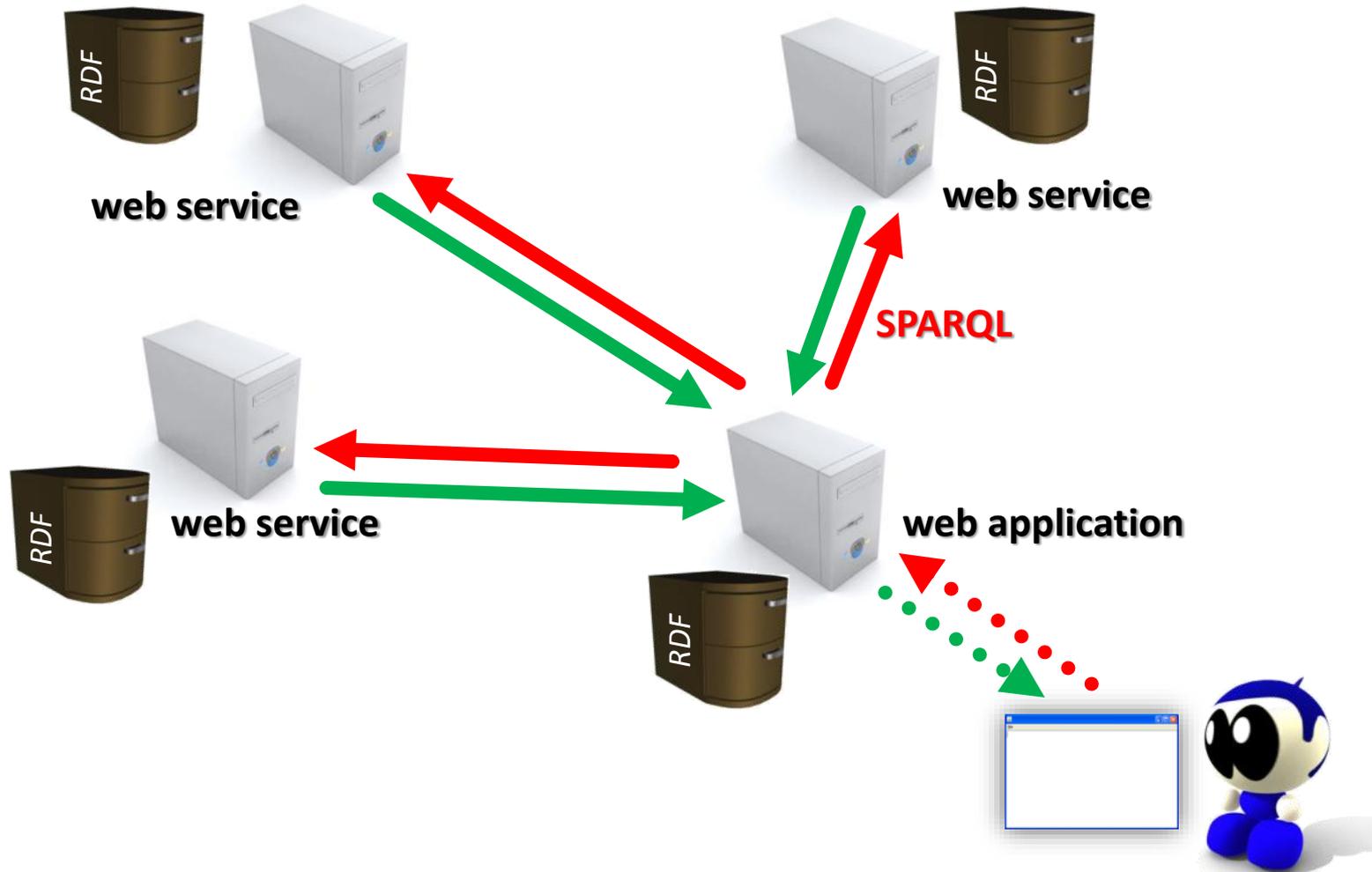
console

RDF resources list

RDF Request

```
prefix gephi: <http://gephi.org/>
CONSTRUCT{
  ?film gephi:label ?title .
  ?film gephi:category "film" .
  ?director gephi:category "director" .
  ?actor gephi:category "actor" .
  ?film <http://dbpedia.org/ontology/director> ?director .
  ?film <http://dbpedia.org/ontology/starring> ?actor
} WHERE {
  ?film rdfs:label ?title .
  ?film <http://dbpedia.org/ontology/director> ?director .
  ?film <http://dbpedia.org/ontology/starring> ?actor
  FILTER(lang(?title)="en")
} LIMIT 10000
```

# peer servers

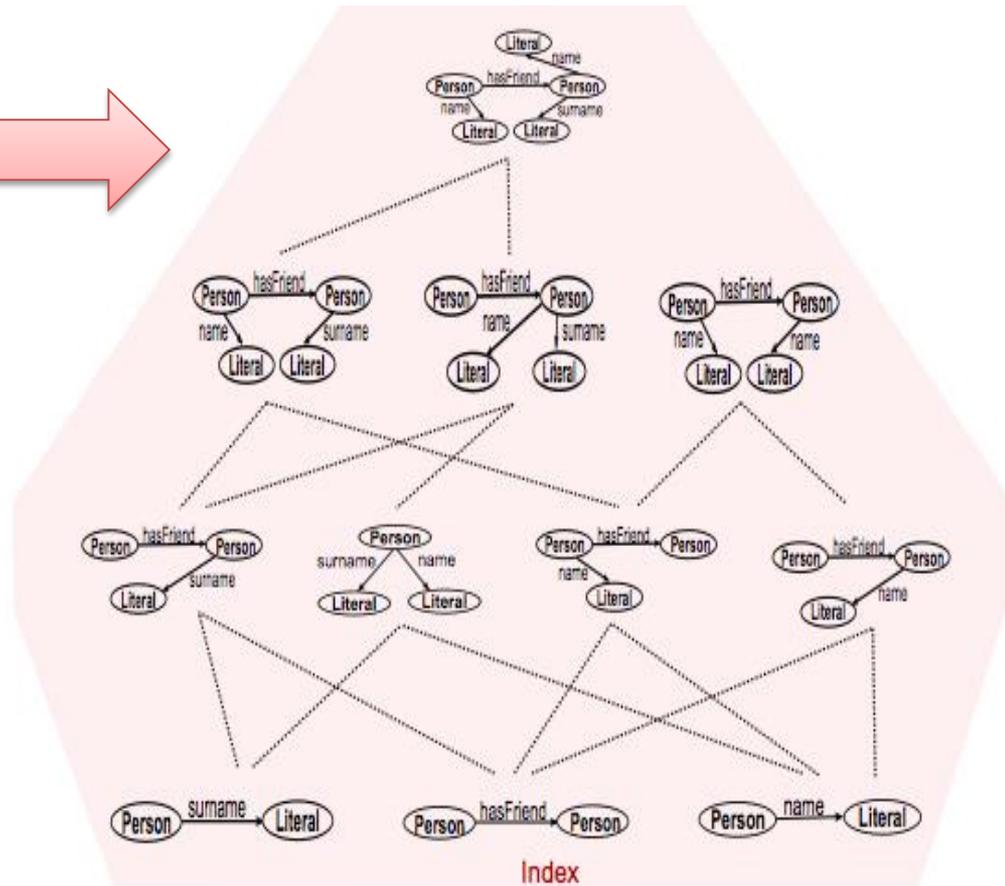
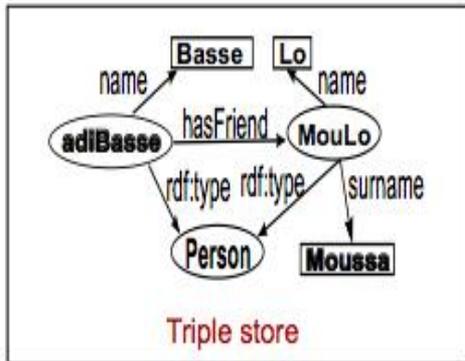
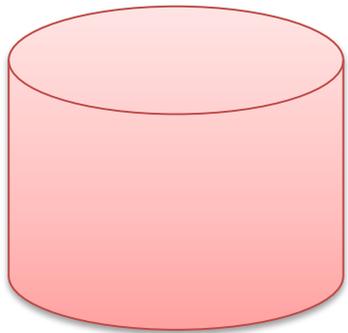




# inductive index creation for a triple store

[Basse, et al.]

- characterize distributed RDF sources
- incremental index generation and maintenance



## Data sources configuration

## Federated SPARQL querying

Predefined SPARQL queries for data sources federation.

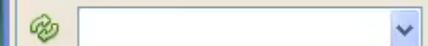
```
PREFIX idemo:<http://rdf.insee.fr/def/demo#>
PREFIX igeo:<http://rdf.insee.fr/def/geo#>
SELECT ?departement ?nom ?popTotale WHERE {
  ?region igeo:codeRegion "24" .
  ?region igeo:subdivisionDirecte ?departement .
  ?departement igeo:nom ?nom .
  ?departement idemo:population ?popLeg .
  ?popLeg idemo:populationTotale ?popTotale .
} ORDER BY ?popTotale
```

Query

Federated SPARQL querying on both DS#1 and DS#2


**Partition** x **Ranking**

Nodes Edges


 Group
  Show Pie
 Apply
**Layout** x

---Choose a layout

&lt;No Properties&gt;

Presets... Reset

 Semantic Web Import x **Graph** x

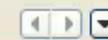
Driver Request Log Configurations

SPARQL Request

```

1 prefix dbpedia-owl: <http://dbpedia.org/ontology/>
2 prefix dbpedia-pro: <http://dbpedia.org/property/>
3 prefix geo: <http://www.w3.org/2003/01/geo/wgs84_pos#>
4 prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
5 prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>
6 prefix geonames: <http://sws.geonames.org/>
7 prefix wgs84_pos: <http://www.w3.org/2003/01/geo/wgs84_pos#>
8 prefix gephi: <http://gephi.org/>
9 prefix owl: <http://www.w3.org/2002/07/owl#>
10
11 construct {
12     ?city1 owl:sameLanguage ?city2 .
13     ?city1 gephi:label ?city_name1 ;
14         gephi:longitude ?long1 ;
15         gephi:latitude ?lat1 ;
16         gephi:image ?im1 ;
17         gephi:language ?language ;
18         gephi:populationTotal ?population1 .
19
20     ?city2 gephi:label ?city_name2 ;
21         gephi:longitude ?long2 ;
22         gephi:latitude ?lat2 ;
23         gephi:image ?im2 ;
24         gephi:language ?language ;
25         gephi:populationTotal ?population2 .
26 }
27 where {
28     {
29         service <http://live.dbpedia.org/sparql/> {

```

**Context** x

Nodes: 765

Edges: 2184

Directed Graph




Settings

 **Network Overview**

Average Degree

Avg. Weighted Degree

Network Diameter

Graph Density

HITS

Modularity

PageRank

Erdős Number

Connected Components

 **Node Overview**

Avg. Clustering Coefficient

SW Type Statistics

Clustering Coefficient

Eigenvector Centrality

 **Edge Overview**

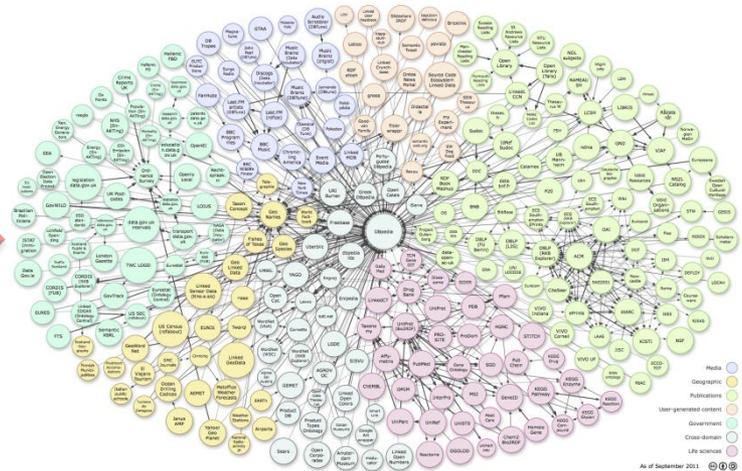
Avg. Path Length

Neighborhood Overlap, Embeddedness

 RDF Request Graph

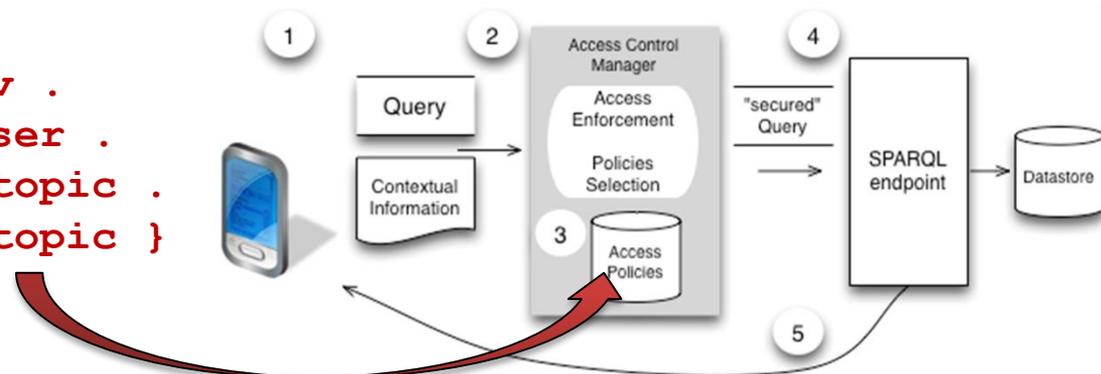


# socio-semantic access control



e.g. only my colleagues  
working on the same subject

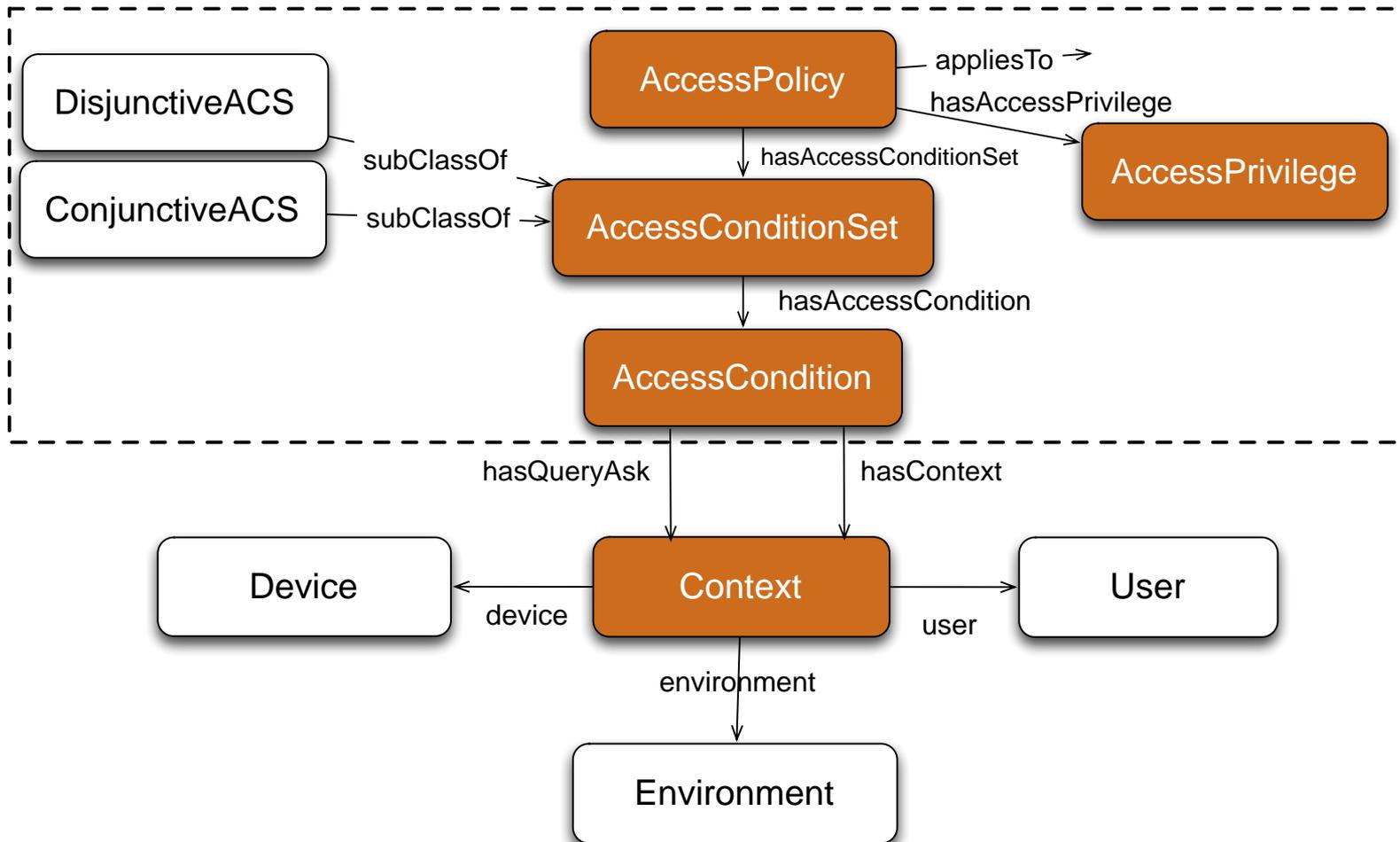
```
ASK{ ?res dcterms:creator ?prov .
      ?prov rel:hasColleague ?user .
      ?prov foaf:interestedBy ?topic .
      ?user foaf:interestedBy ?topic }
```



# Context-Aware Access Control Model

[Villata, Costabello, et al.]

s4ac:



# Context-aware Access Control for Linked Data

## Shi3Id Access Control Manager



```
SELECT ...  
WHERE {...}
```

---

```
GET /data/resource HTTP/1.1  
Host: example.org  
Authorization: ...
```



**Sample Policy**

Targets & privileges / User / Environment #time / Environment #location / Device

Data accessible within the area:

Address or latitude, longitude pair  
Cour Carrée et Pyramide du Louvre

Radius [meters]  
119

**Example**  
2004 Route des Lucioles,  
06560 Sophia Antipolis,  
France  
43.6162401, 7.06794420

**Sample Policy**

Targets & privileges / User / Environment #time

Access will be granted to users with the following

- knows
- Knows By Reputation
- Knows In Passing
- Knows Of
- knows

Friend Of: http://example.org/Bob  
age: "24"

**Sample Policy**

Targets & privileges / User / Environment #time / Environment #location / Device

Data accessible for the following time period:

From: 16/07/2013 10:00 to: 23/07/2013 18:00

Set Current

Cancel Finish



Oh?  
yeah



## Oh, yeah?

Lost that feeling of trust?

Here's some information about this document.

Request date: Fri, 08 Feb 2013 14:07:44 GMT

Last modified on: Wed, 06 Feb 2013 10:49:01 GMT

## Linked provenance resources

[-] example ✓

Valid: [This is valid provenance](#) ✓

URI: <http://users.ugent.be/~tdenies/provenance/example.provn>

Target: <http://ruben.verborgh.org:1234/>

Serialization: PROV-N

[+] example2 ⚠

[+] example ✓

Oh?  
yeah

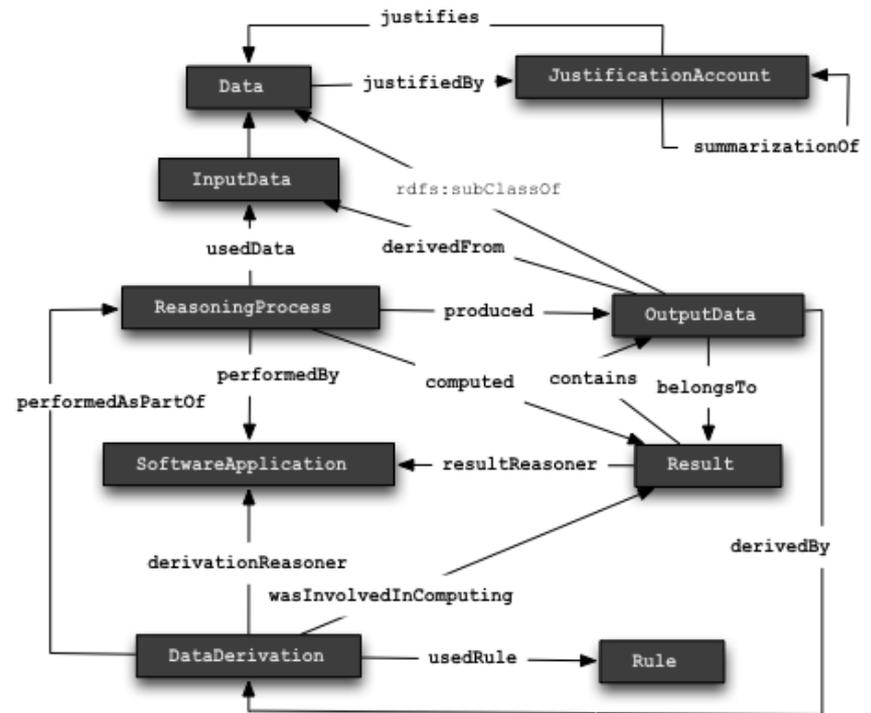
toward the « oh yeah? » button

# representing query and reasoning workflows

[Hasan et al.]

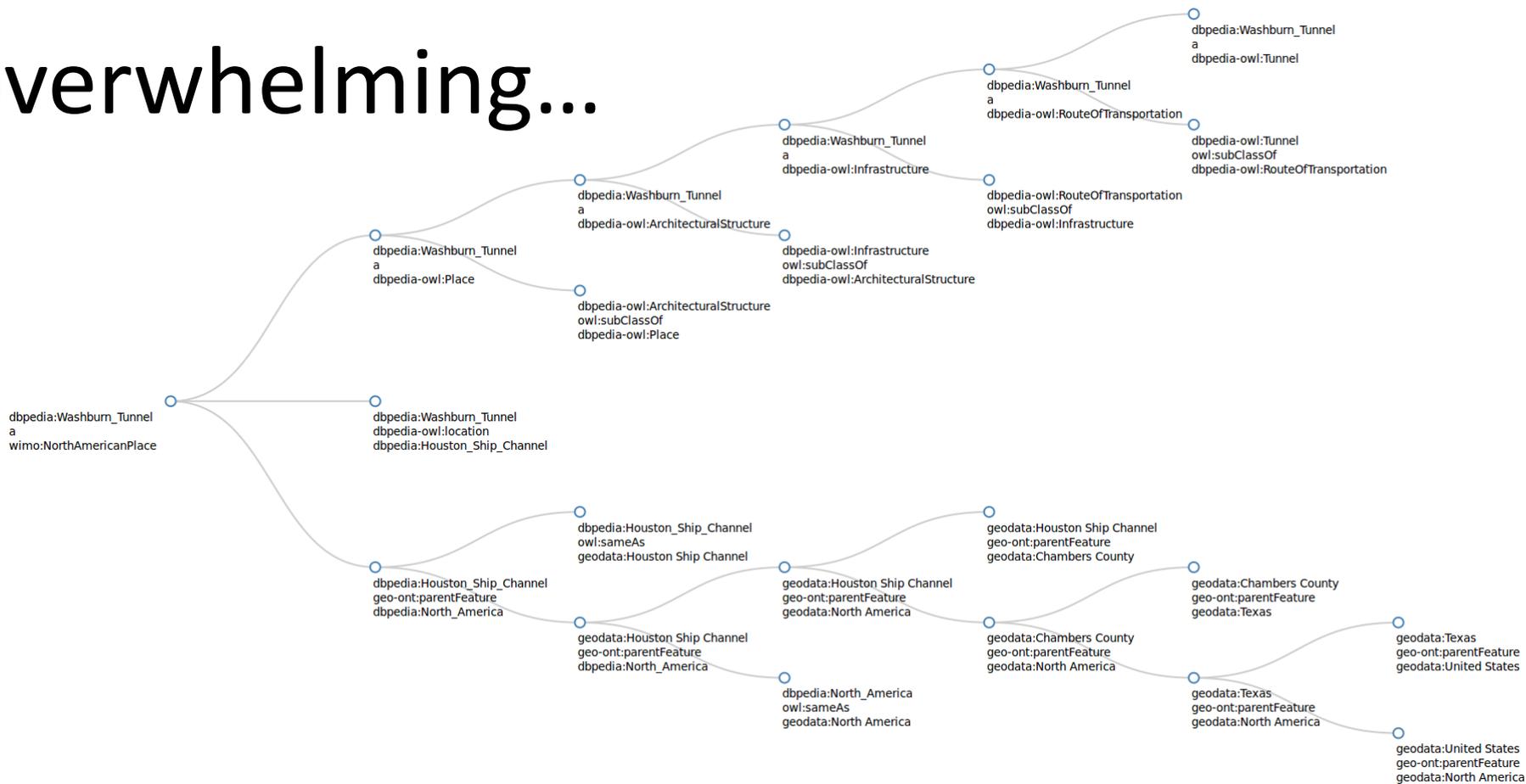


- Ratio4TA<sup>\*</sup>, a lightweight vocabulary for encoding justifications.
- A specialization of the W3C PROV ontology

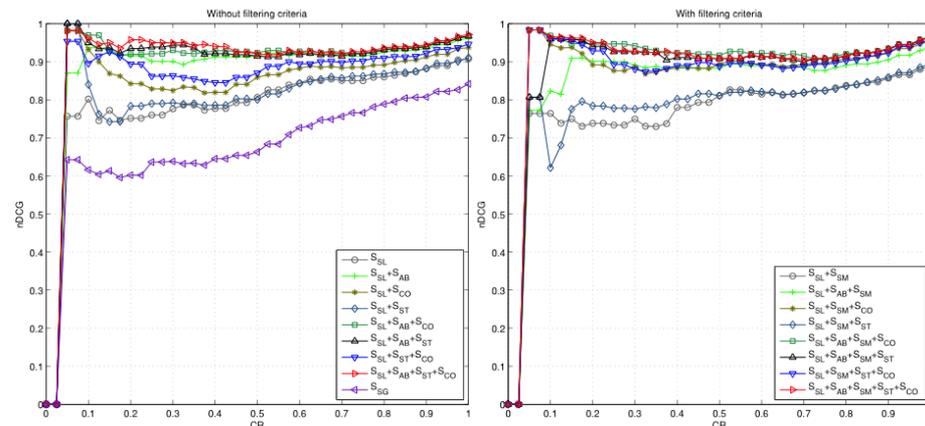


\* <http://ns.inria.fr/ratio4ta/>

# overwhelming...



# evaluating quality of summaries





***doggy-bag***  
*of the talk*

Click to **LOOK INSIDE!**

# The Quark and the Jaguar: Adventures in the Simple and the Complex [Paperback]

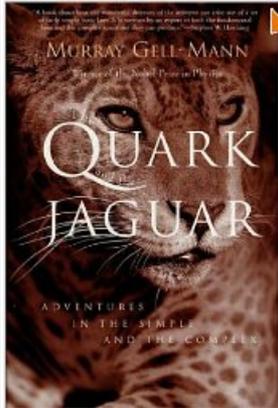
[Murray Gell-Mann](#)  (Author)

★★★★☆  (30 customer reviews)

Price: **\$13.59**

**In Stock.**

Ships from and sold by **Amazon.com**.



### Formats

	Amazon Price	New from	Used from
<input type="checkbox"/> Hardcover	--	\$13.67	\$0.55
<input checked="" type="checkbox"/> Paperback	<b>\$13.59</b>	\$10.01	\$7.84

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### Product Details

**Paperback:** 392 pages

**Publisher:** St. Martin's Griffin (September 15, 1995)

**Language:** English

**ISBN-10:** 0805072535

**ISBN-13:** 978-0805072532

**Product Dimensions:** 9.1 x 6.1 x 1.2 inches

**Shipping Weight:** 1.2 pounds ([View shipping rates and policies](#))

# web 1, 2

Click to **LOOK INSIDE!**

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**Average Customer Review:** ★★★★★  (30 customer reviews)

**Amazon Bestsellers Rank:** #373,365 in Books

### Customer Reviews

30 Reviews

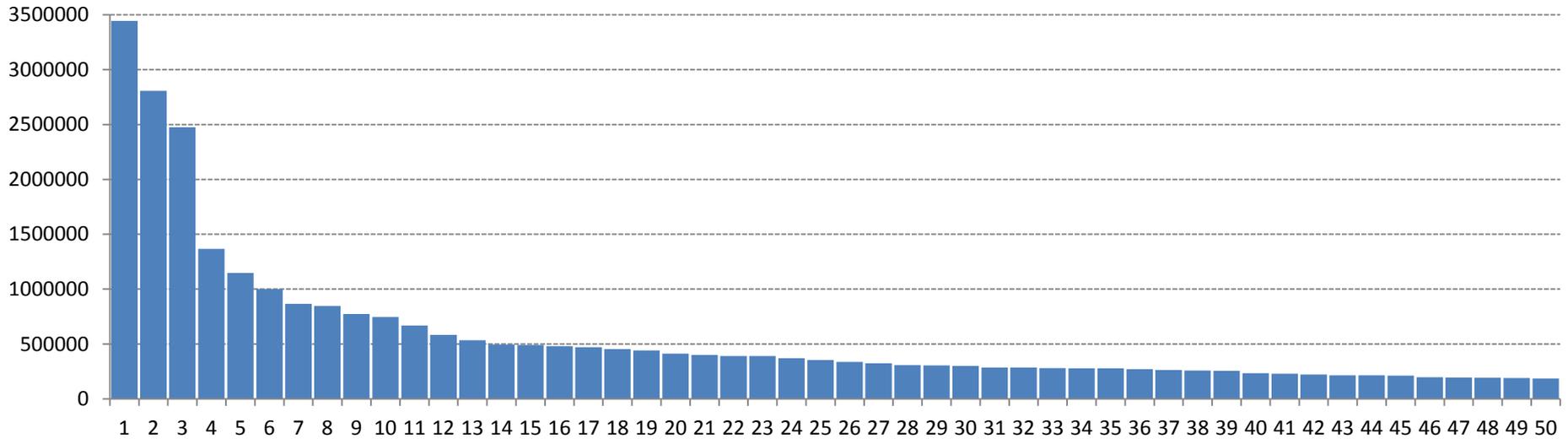
5 star:  (9)  
 4 star:  (8)  
 3 star:  (7)  
 2 star:  (4)  
 1 star:  (2)

**Average Customer Review**

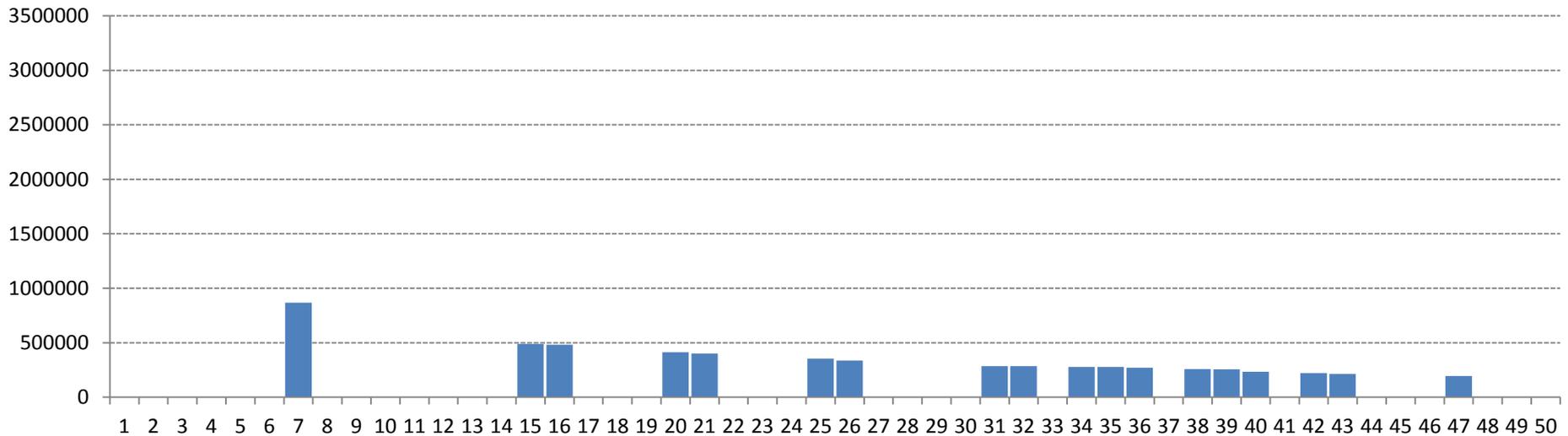
★★★★☆ (30 customer reviews)

# web 1, 2, 3

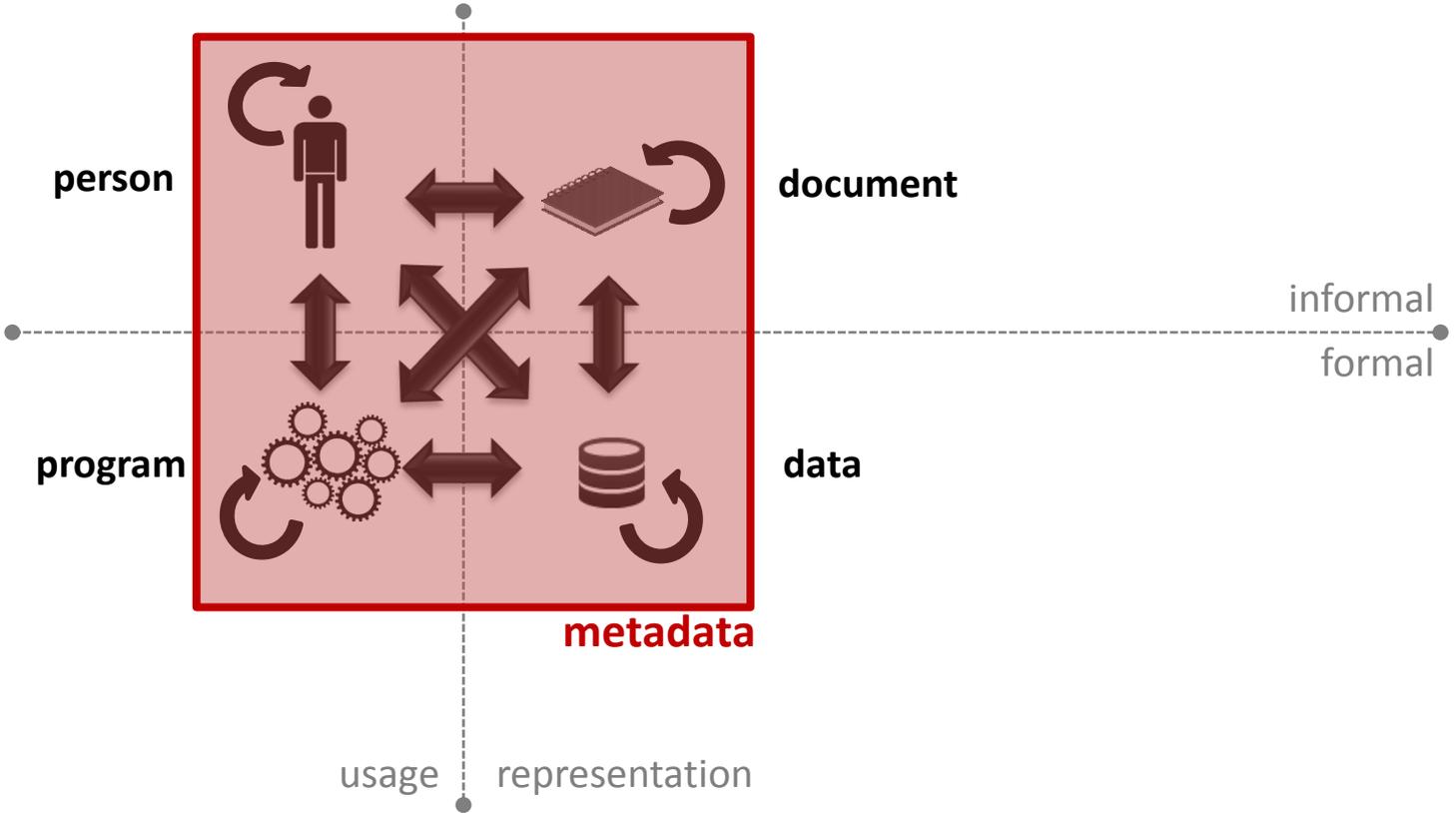
# wikipedia editions by users...



# without bots...



# one web...



**he who controls metadata, controls the web**  
and through the *world-wide* web many things in our world.



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