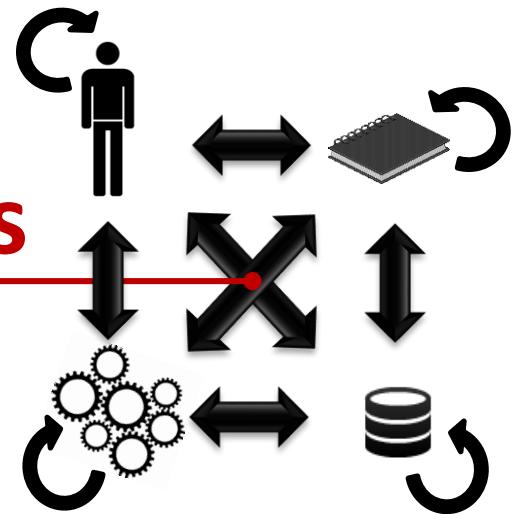


semantic and social (intra)webs

fabien gandon, @fabien_gandon, <http://fabien.info>

leader of the Wimmics research team (INRIA, CNRS, Univ. Nice)

W3C Advisory Committee Representative for INRIA

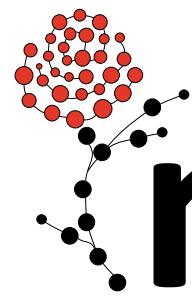




Web-Instrumented Man-Machine Interactions, Communities, and Semantics

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. Andrea G. B. Tettamanzi, Pr. (UNS)
8. Serena Villata, RP (INRIA)

Post-doc:

1. Zeina Azmeh (I3S)
2. Elena Cabrio (CORDIS)

Research engineers:

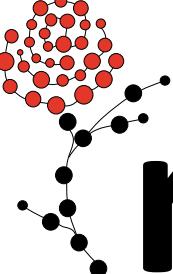
1. Julien Cojan (INRIA, Ministry of Culture)
2. Christophe Desclaux (Boost your code)
3. Amosse Edouard (I3S)

PhD students:

1. Pavel Arapov, 3rd year (EDSTIC-I3S)
2. Franck Berthelon, 4th year (UNS-EDSTIC)
3. Ahlem Bouchahda, 3rd year (UNS-SupCom Tunis)
4. Khalil Riad Bouzidi, 3rd year (UNS-CSTB)
5. Luca Costabello, 3rd year (INRIA-CORDI)
6. Papa Fary Diallo, 2nd year (AUF-UGB-INRIA)
7. Corentin Follenfant, 3rd year (SAP)
8. Zide Meng, 1st year (INRIA ANR OCTOPUS)
9. Maxime Lefrançois, 3rd year (EDSTIC-INRIA)
10. Nguyen Thi Hoa Hue, 2nd year (Vietnam-CROUS)
11. Nicolas Marie, 3rd year (Bell-ALU, INRIA)
12. Rakebul Hasan, 2nd year (INRIA ANR-Koflow)
13. Oumy Seye, 2nd year, (INRIA Rose Dieng allocation)

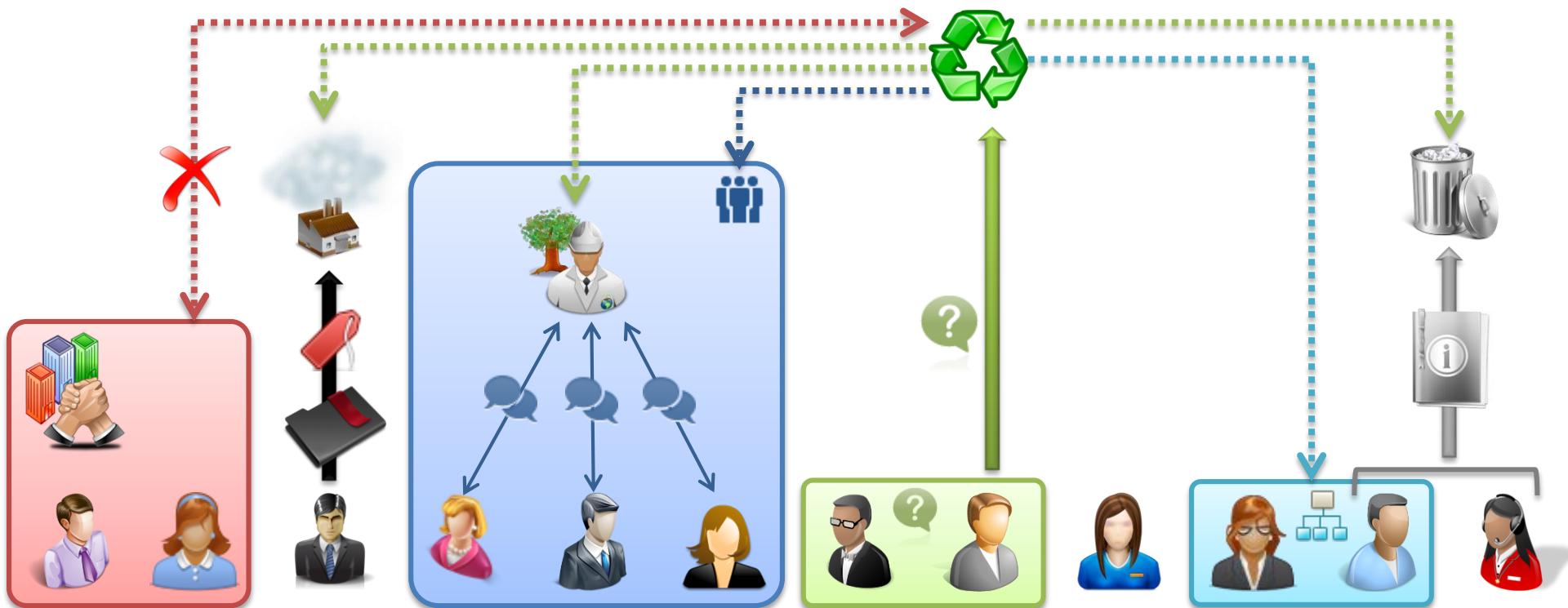
Assistants:

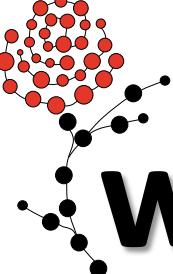
- Christine Foggia (INRIA)
- Magali Richir (I3S)



research problem

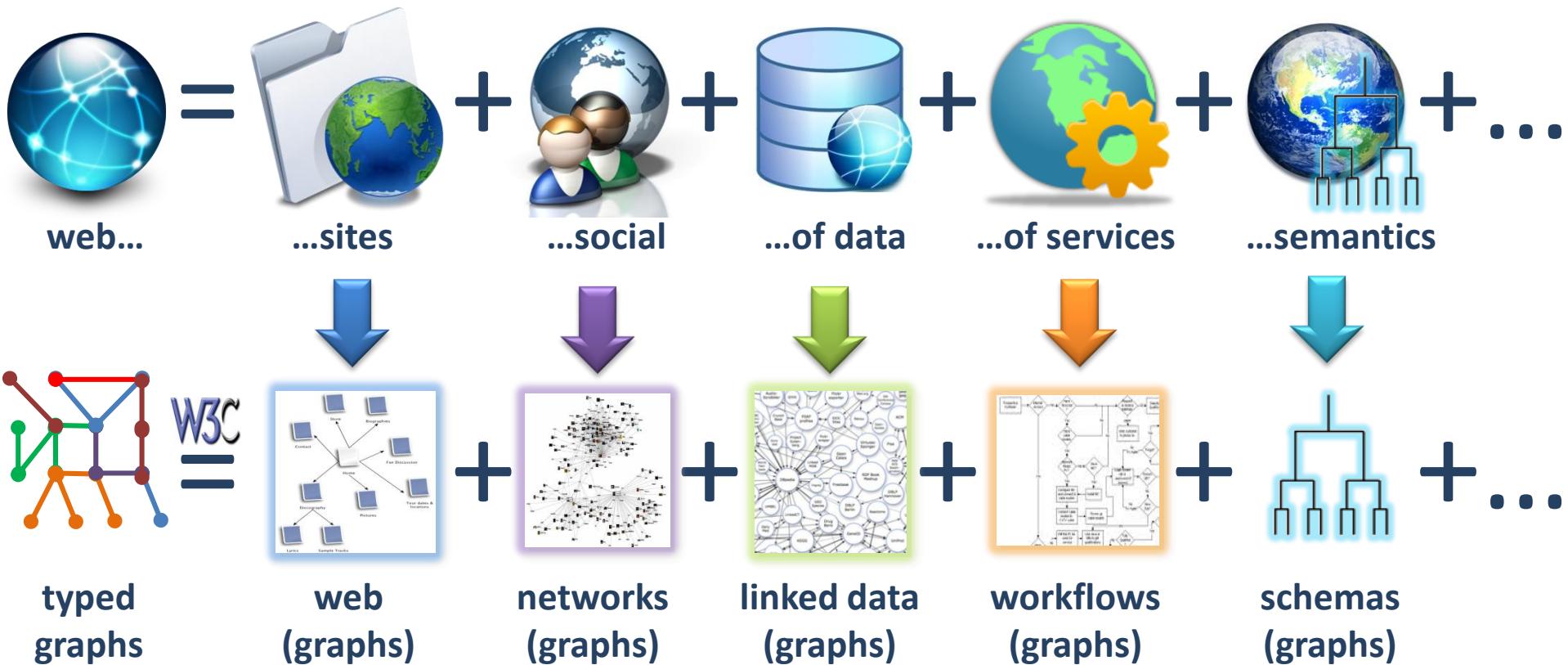
socio-semantic networks: combining formal semantics and social semantics on the web

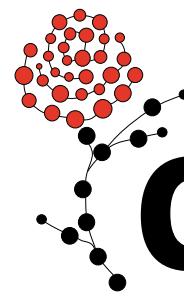




web landscape and graphs

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





challenges

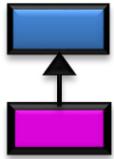
analyzing, modeling, formalizing and
implementing graph-based social semantic web
applications for communities

① multidisciplinary approach for analyzing and modeling

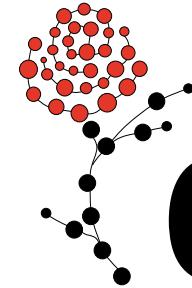


- the many aspects of intertwined information systems
- communities of users and their interactions

② formalizing and reasoning on these models



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



diffusion



Master IFI: from KIS to Web

- gradual changes to the courses
- then replace the master by a new one

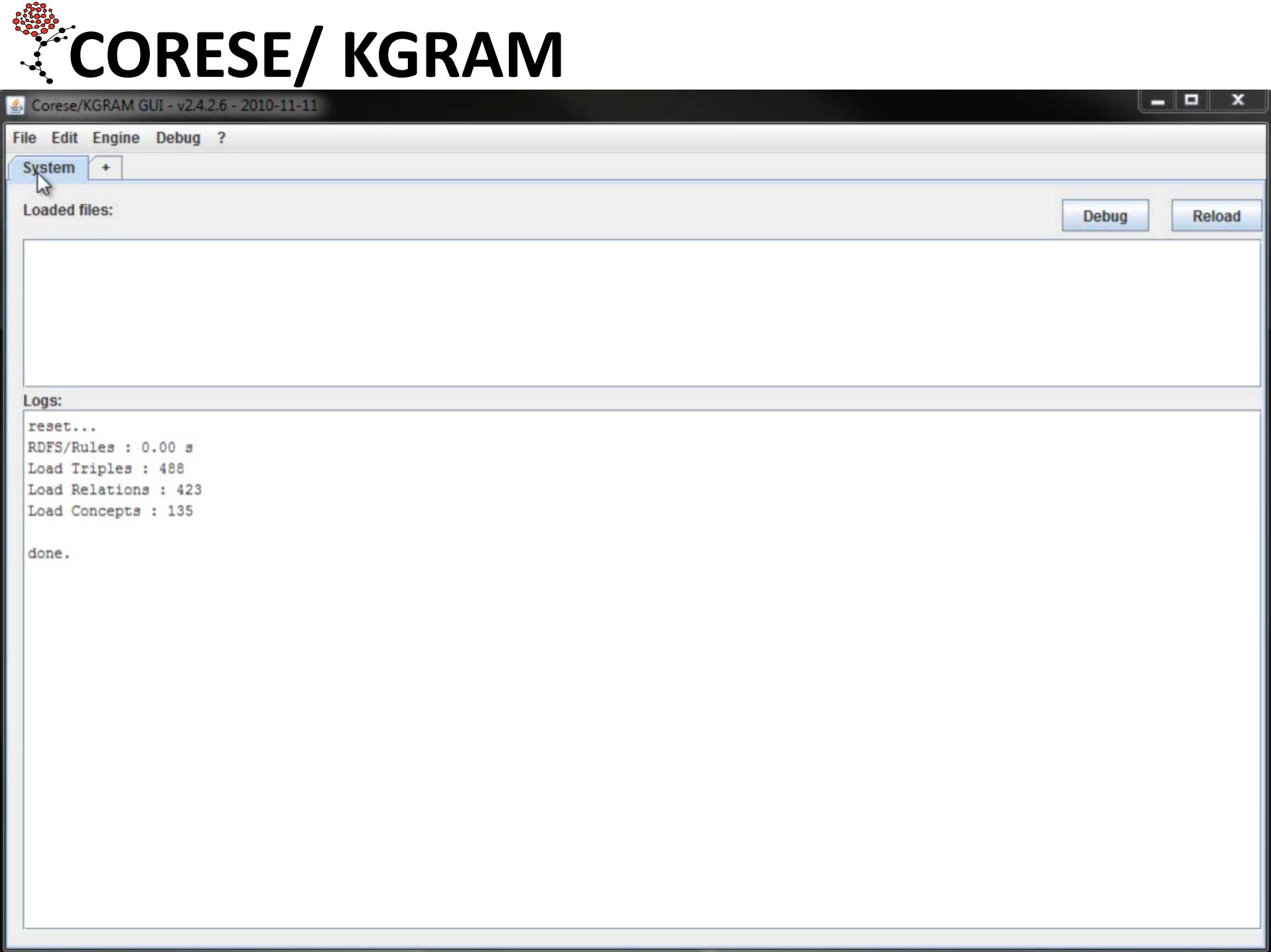


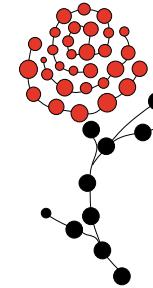
Standardization participation

- Working groups: RDF 1.1, SPARQL 1.1
- INRIA Advisory Committee Representative



Open-source and CeCILL-C free software





projects



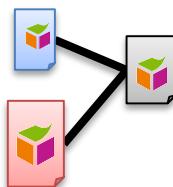
isicil.inria.fr (ANR)

- enterprise social networking
- business intelligence, watching, monitoring
- communities of interest, of practice, of experts



datalift.org (ANR)

- from raw public data to interlinked data and schemas
- a platform and documentation to assist the process
- validation on real datasets



kolflow.univ-nantes.fr (ANR)

- reduce the overhead of communities building knowledge
- federated semantic: distributed blackboard for man-machine coop.



dbpedia.fr (Ministry of Culture)

- extract and publish data and facts from French version of wikipedia

• • • ocktopus (ANR)

- dynamic typed network of user-generated web sites (e.g. forums)



ANR

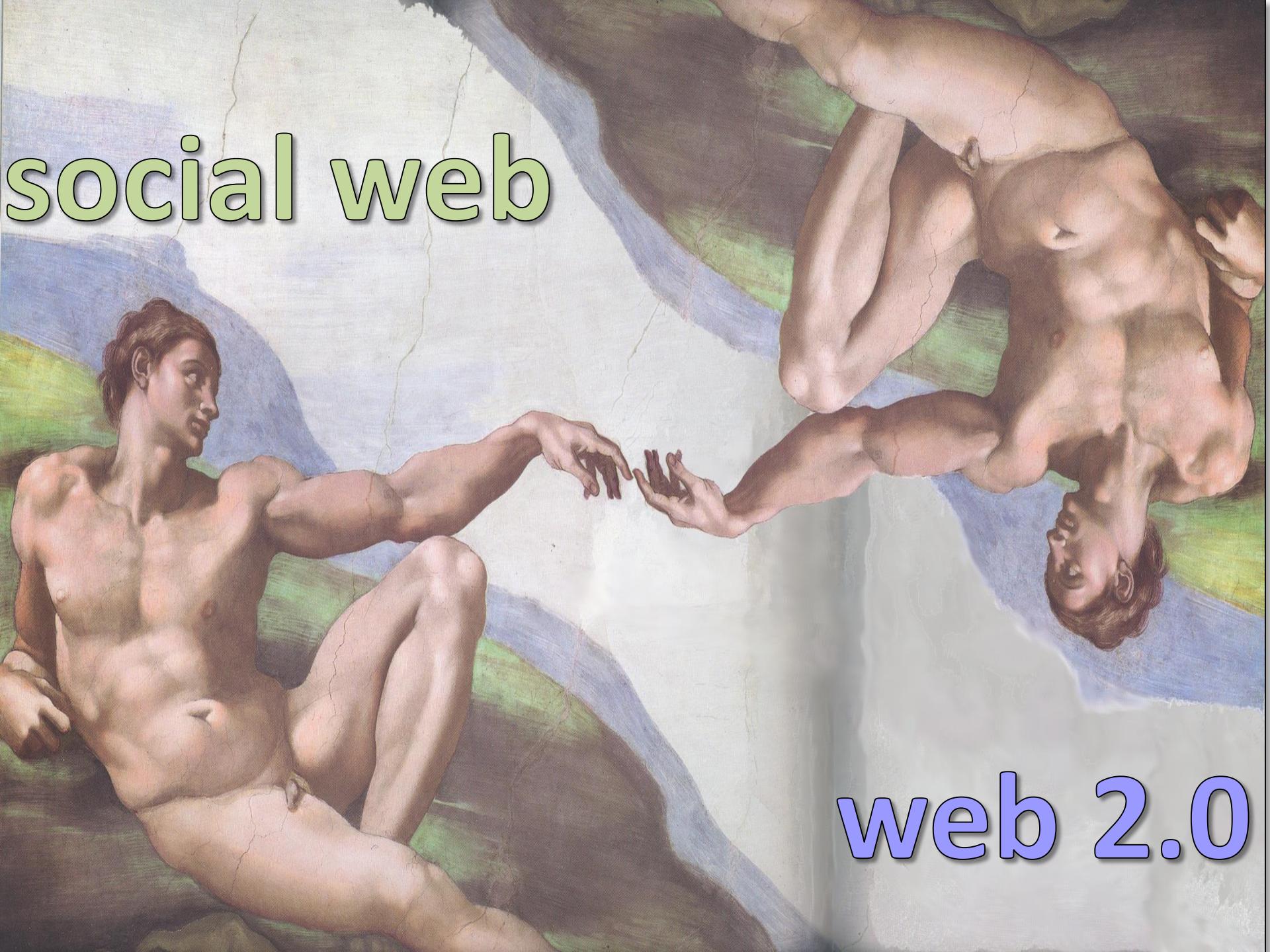
ISICIL

semantic and social intraweb for
corporate intelligence and watch

ANR project CONTINT 2009-2011



<background_knowledge>



social web

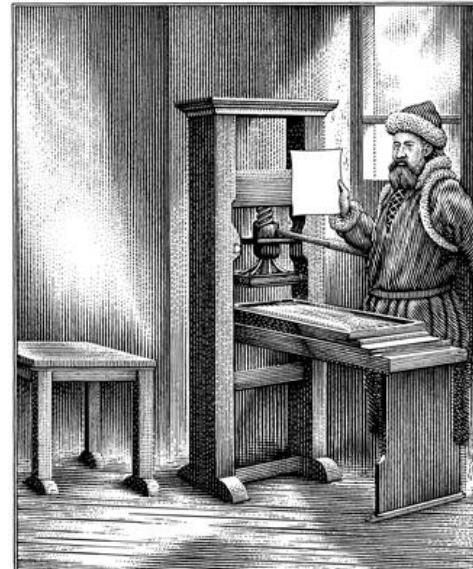
web 2.0



$1 \rightarrow n$



$1 \rightarrow n$

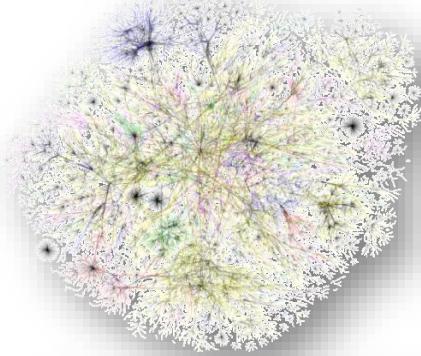


$1 \rightarrow n$



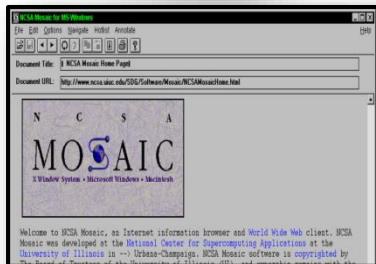
$1 \leftrightarrow 1$

based on Clay Shirky, TED 2009



internet

n↔n



classical web

1↔n



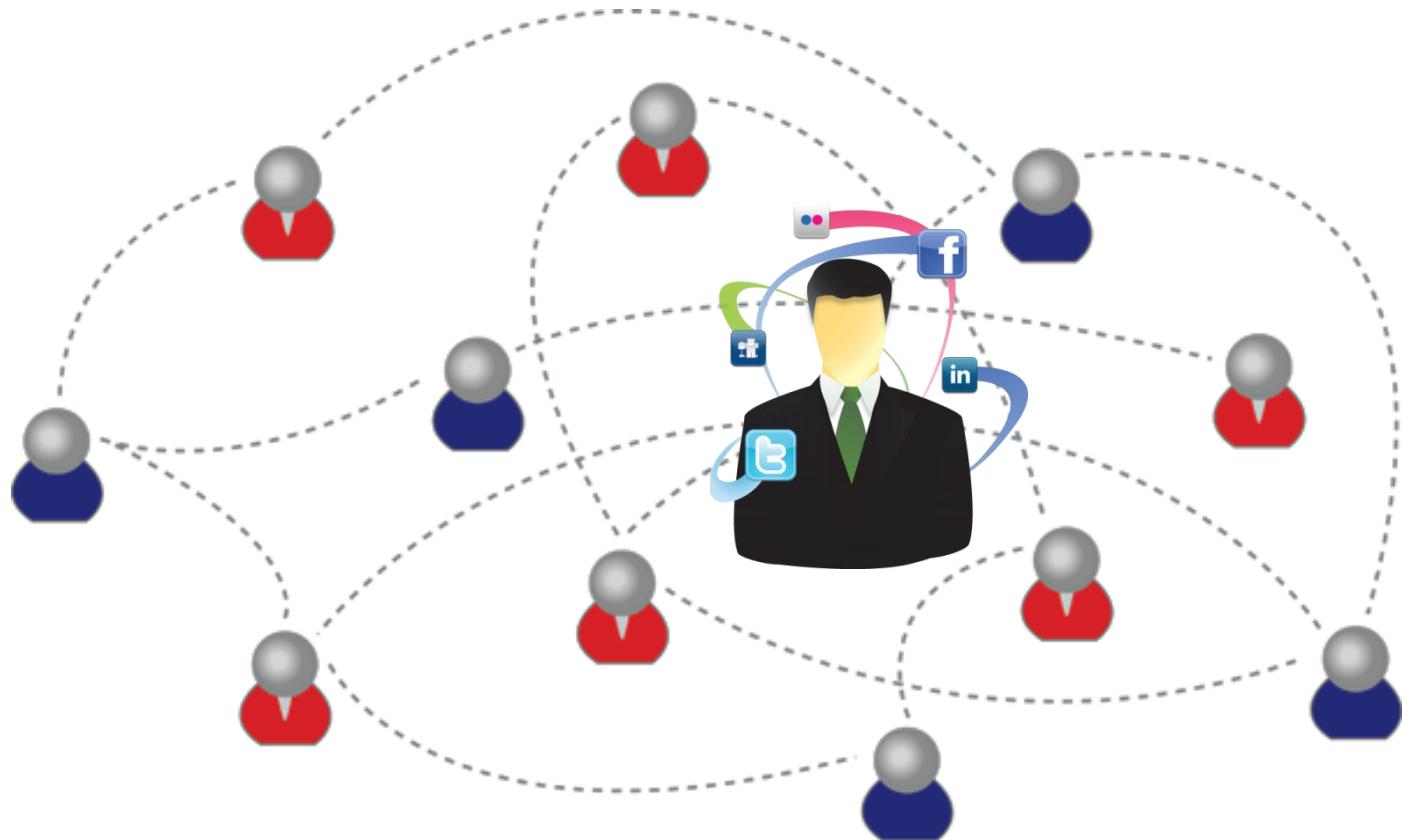
wiki, (μ)blog, forum, etc.
Ward Cunningham, 94

n↔n



read-write web

social web networks





social networks

networking is not that new e.g. commerce

social network analysis

beginning of the 20th century



last.fm



LinkedIn



skype

facebook

flickr

YouTube
Broadcast Yourself

twitter

orkut

friendfeed

identi.ca
idbiji.co

slideshare
Present Yourself

myspace.com
a place for friends



e Blogger



ipernity

del.icio.us

digg

DEEZER



hypios



SOCIAL

TAGGING

collaboratively create
and manage tags to
annotate and
categorize content

Encore une cuillère d' ta purée ?

Classé dans : [Politique](#), [Science](#), [Société](#)
10:22

Comment, dans que
leur dire ?



Tags

- cutout
- purple
- viola
- viUUUUola
- limone
- lime
- ogm
- organismi geneticamente modificati
- b/n+color
- macro
- centro
- semino
- fingers
- dita
- pollice
- alluce
- mano
- photo+song
- Ysplix
- SuperShot
- DiamondClassPhotographer
- SpecialEffects

Au Commencement

del.icio.us / tag / ogm
[your bookmarks](#) | [your network](#) | [subscriptions](#) | [links for you](#) | [post](#)

All items tagged **ogm** → view [yours](#), [search](#)

Dailymotion Envoyer une Vidéo

Vidéos Chaines Membres Groupes Ma chaîne

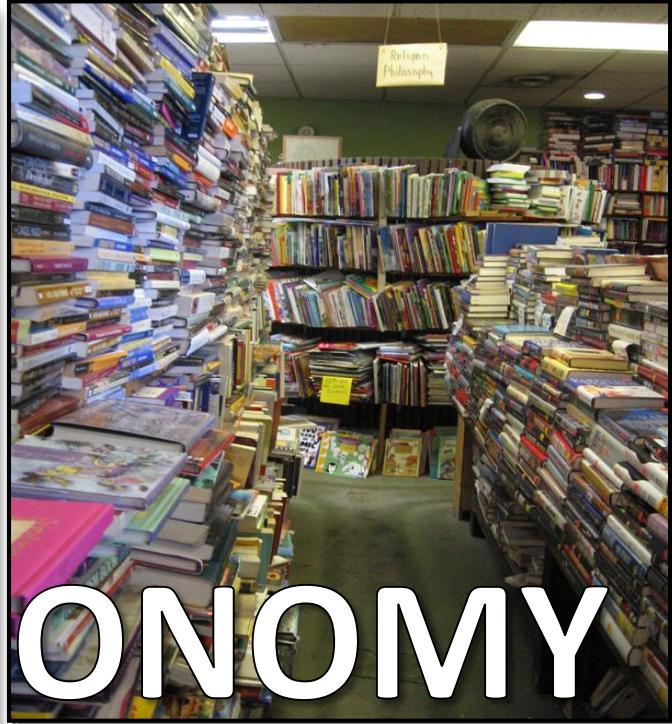
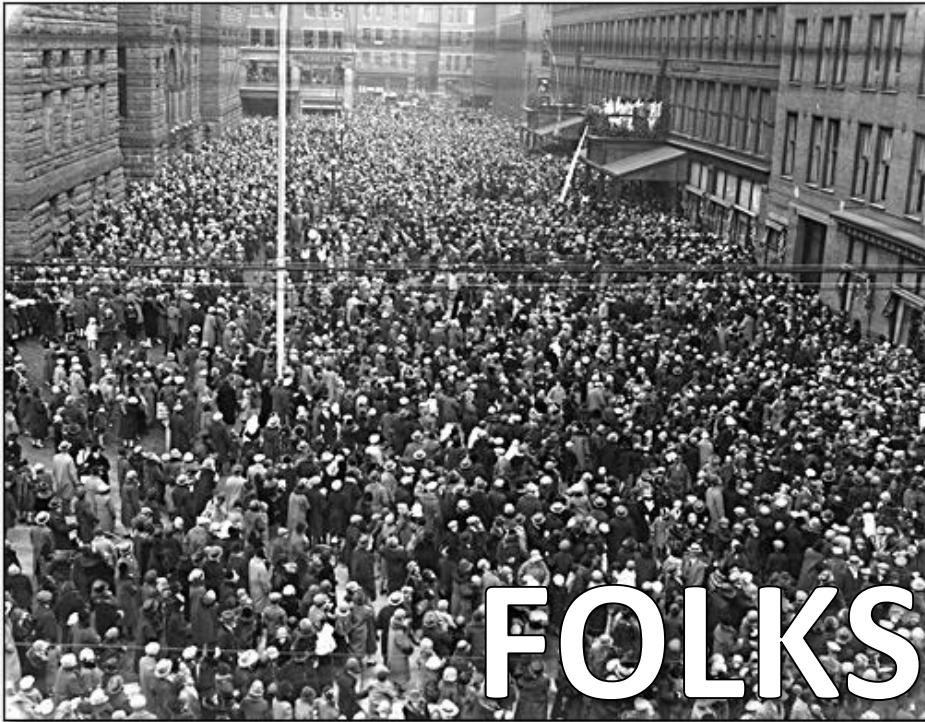


EZ VOUS A 4 votes 

tags: ogm lobbys scandale santé argent exploitation mensonge monsanto chimique

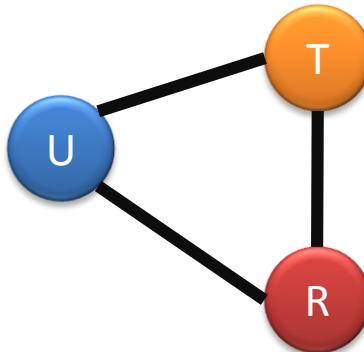
related tags

- [politique](#)
- [france](#)
- [environnement](#)
- [loi](#)
- [200805](#)
- [une](#)
- [manifestation](#)
- [parlement](#)
- [vert](#)
- [rejet](#)



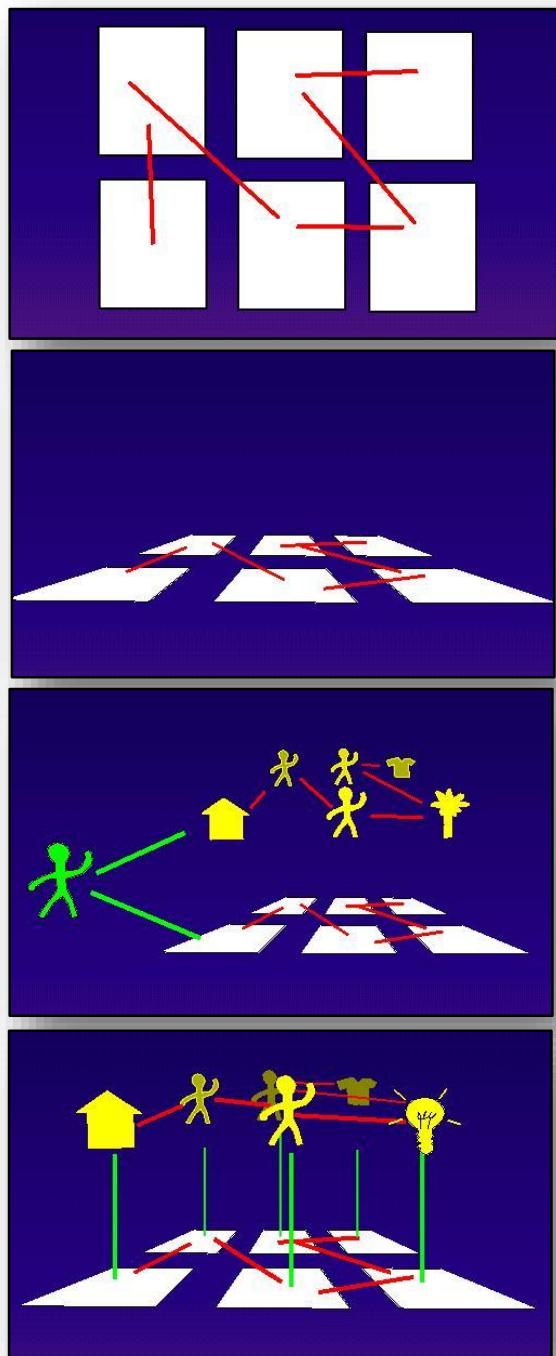
FOLKSONOMY

a crowd of users creating massive categorizations



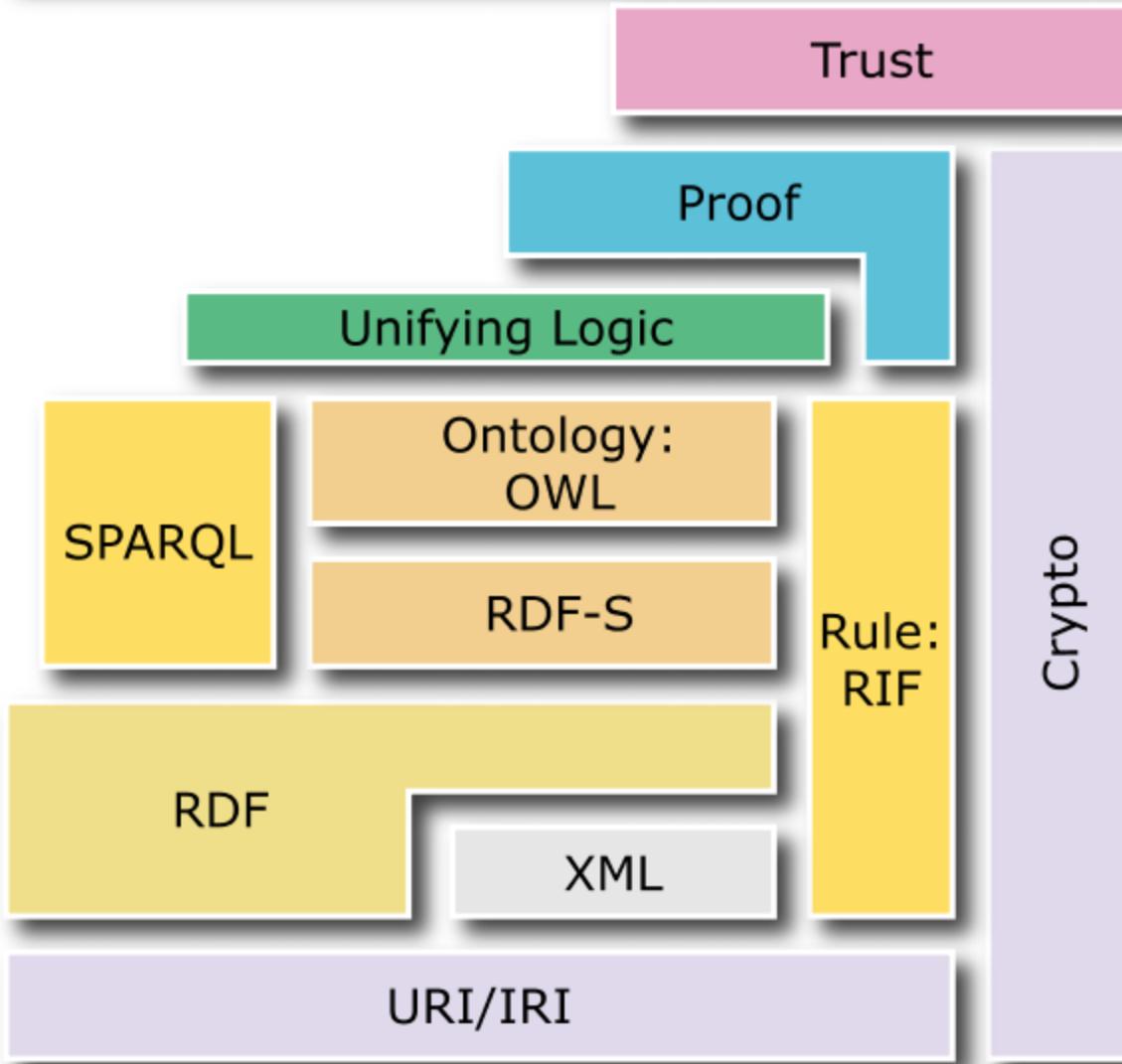
semantic web

mentioned by Tim BL
in **1994** at WWW



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

User Interface & Applications



SEMANTIC WEB STACK

W3C®

User Interface & Applications

Trust

Proof

Unifying Logic

Ontology:
OWL

RDF-S

Rule:
RIF

Crypto

SPARQL

RDF

XML

URI/IRI

A WEB OF
LINKED DATA

W3C®

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*

RDF is a triple model *i.e.* every piece of knowledge is broken down into
(subject , predicate , object)



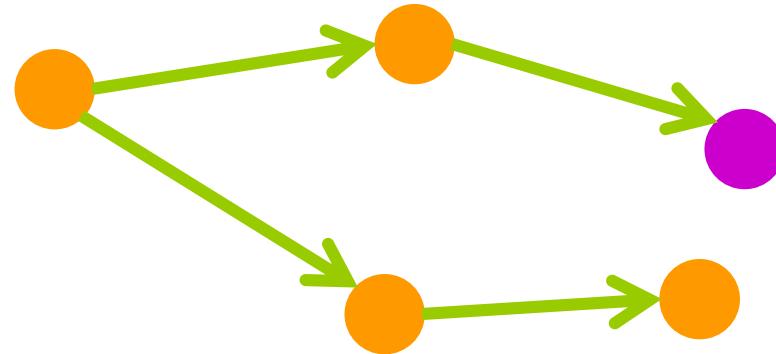
*doc.html has for author Fabien
and has for theme Music*

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**)

Fabien

author

doc.html

theme

Music





a URL on everything

<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

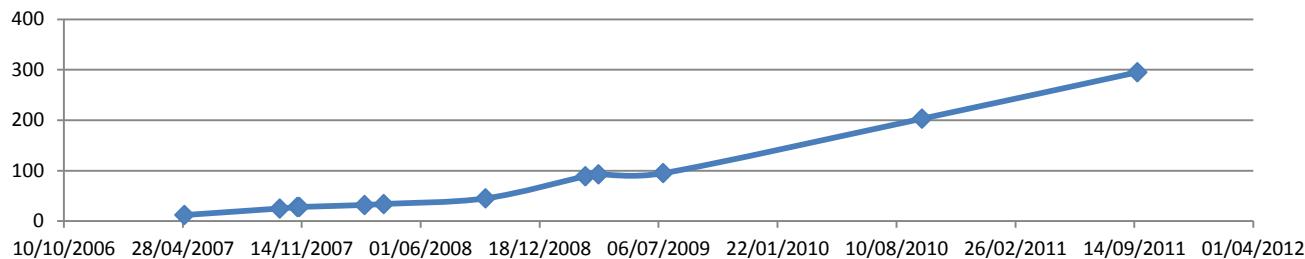


May 2007

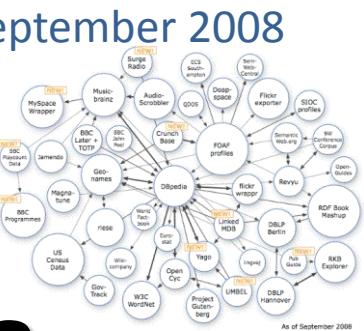
April 2008

September 2008

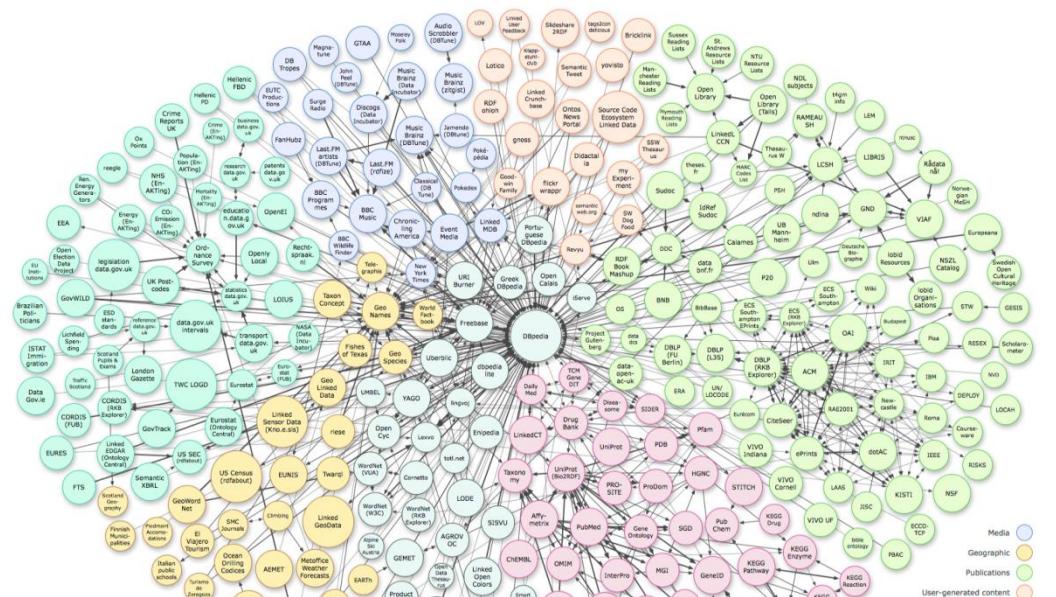
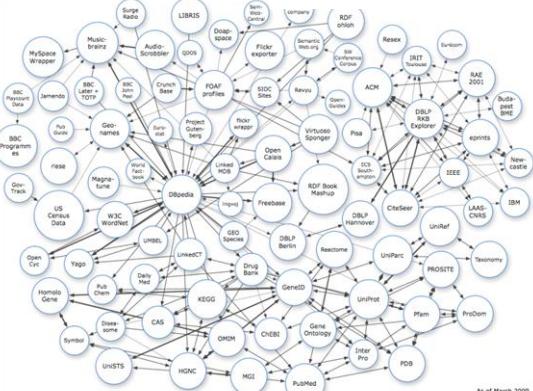
Linking Open Data



September 2008



March 2009



September 2011

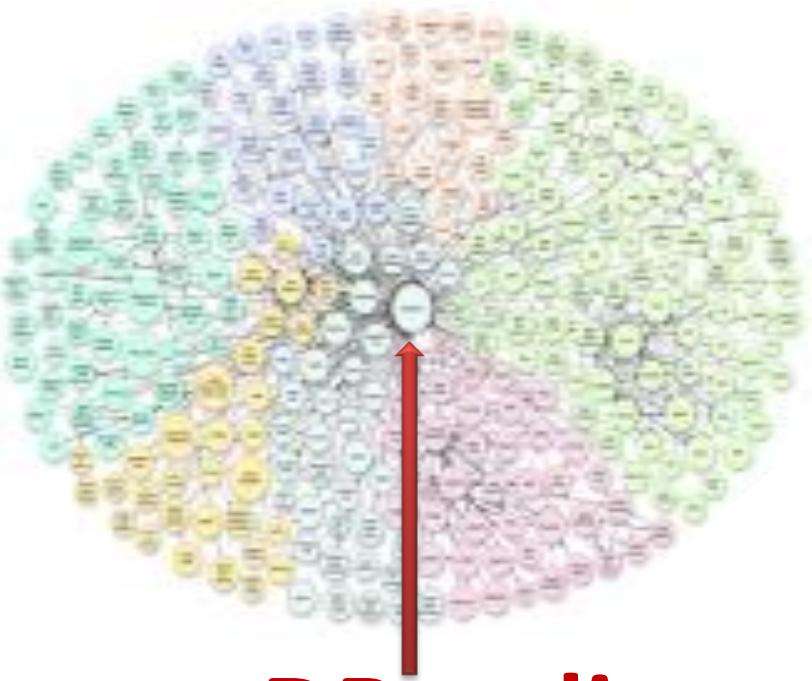
September 2010



query with SPARQL

SPARQL Protocol and RDF

Query Language



e.g. DBpedia

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

SPARQL:

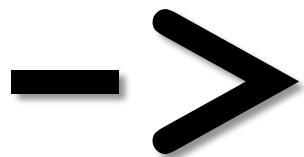
```
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX : <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](#)



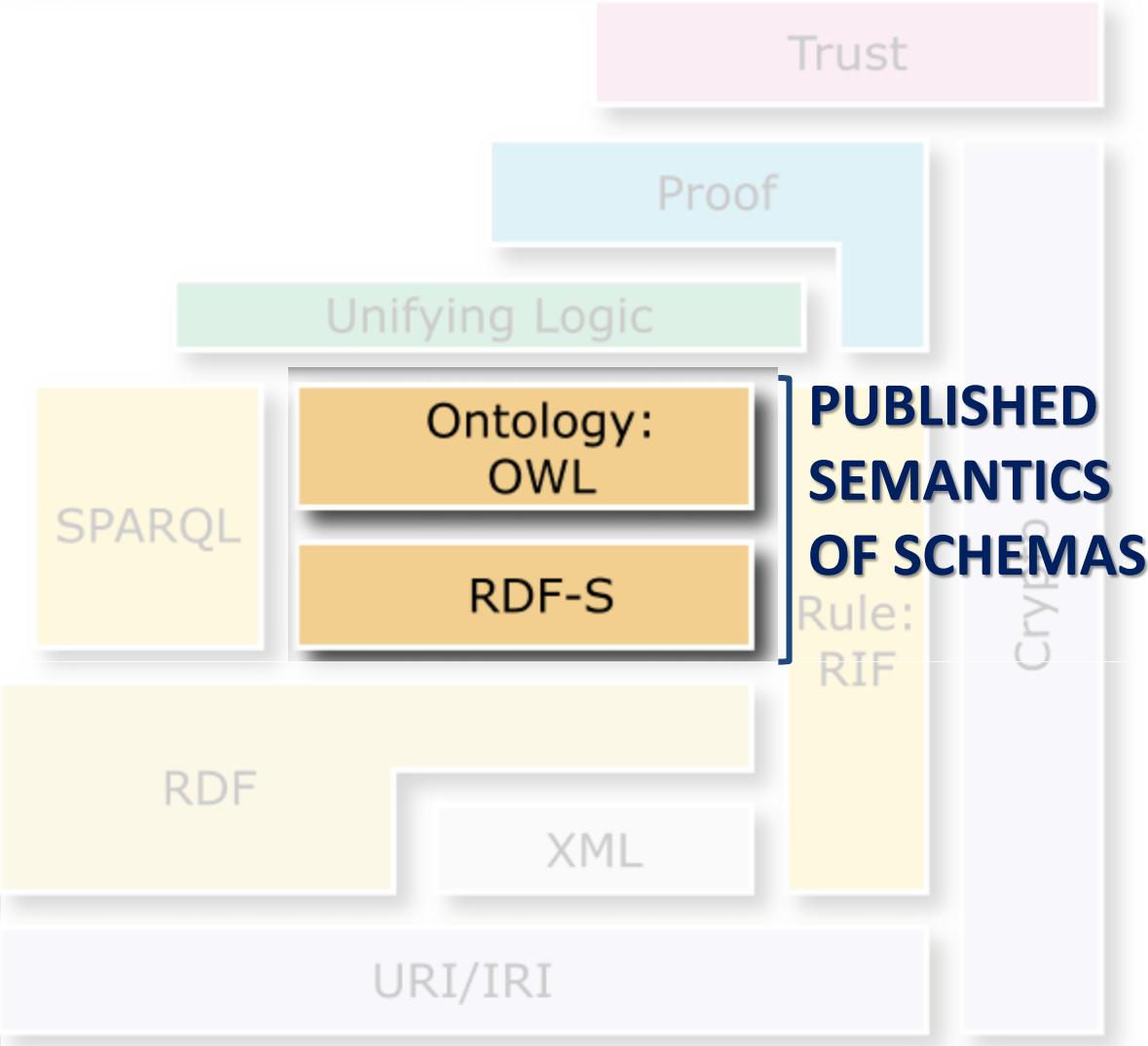
Ontology



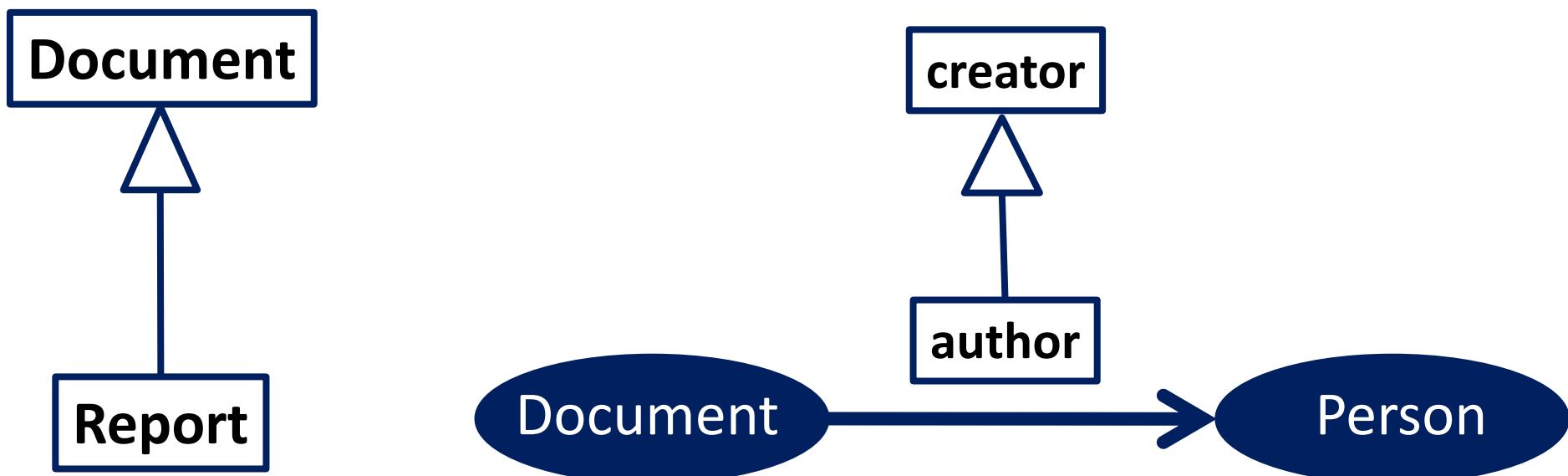
ontologies



User Interface & Applications

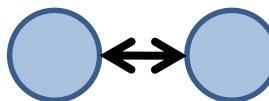


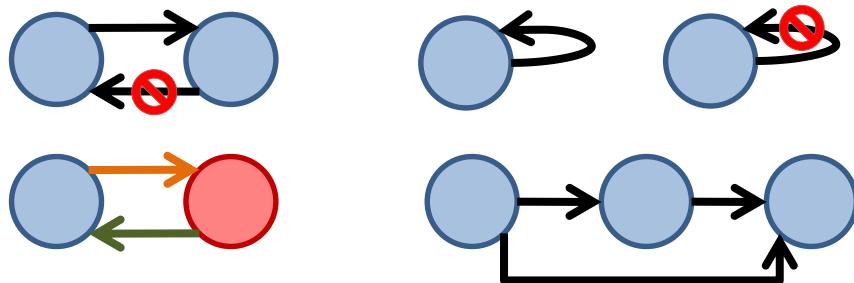
RDFS to declare classes of resources, properties, and organize their hierarchy



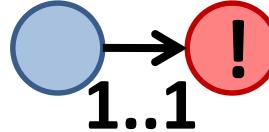


OWL in one...

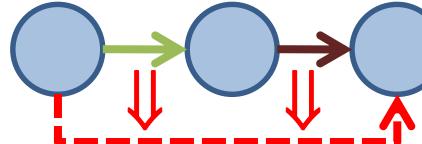
 algebraic properties



 disjoint properties

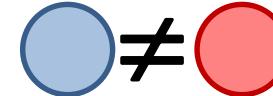
 qualified cardinality
1..1

 individual prop. neg

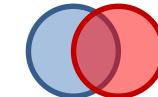
 chained prop.



union



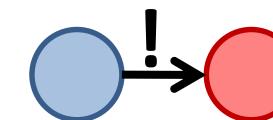
disjunction



intersection



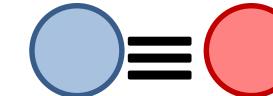
complement



restriction



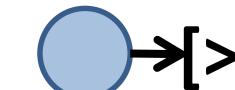
cardinality



equivalence



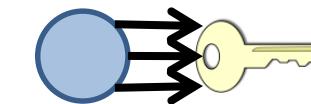
enumeration



value restrict.



disjoint union



keys

...

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>



Social web



Semantic web



Linked data



Social semantic web



ISICIL: semantic social intraweb



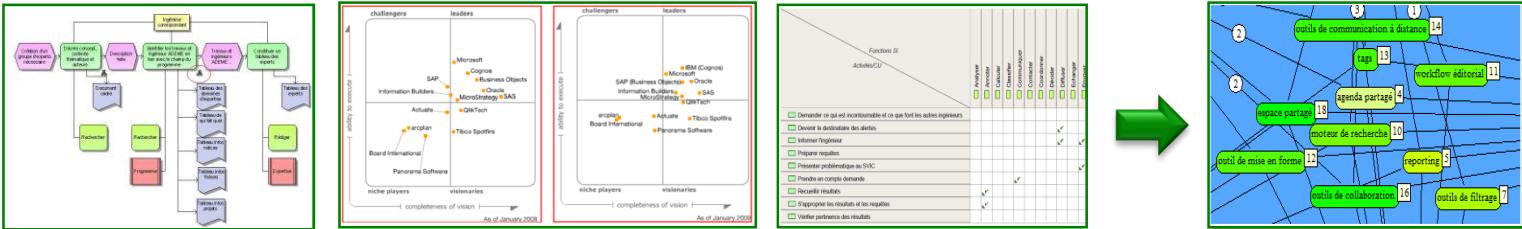
- enterprise social networking
- business intelligence, watching, monitoring
- communities of interest, of practice, of experts

isicil.inria.fr

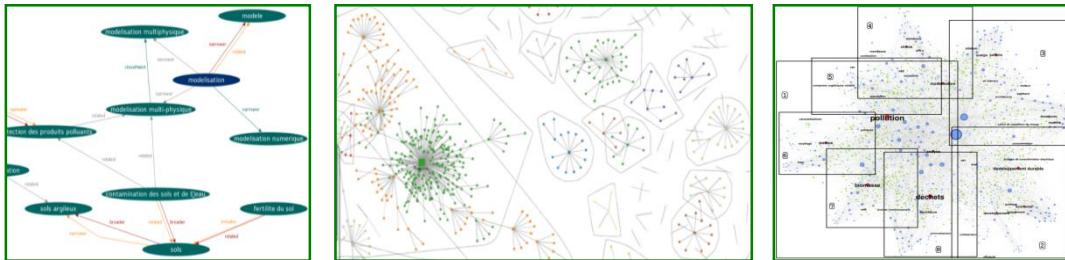


proposed overview...

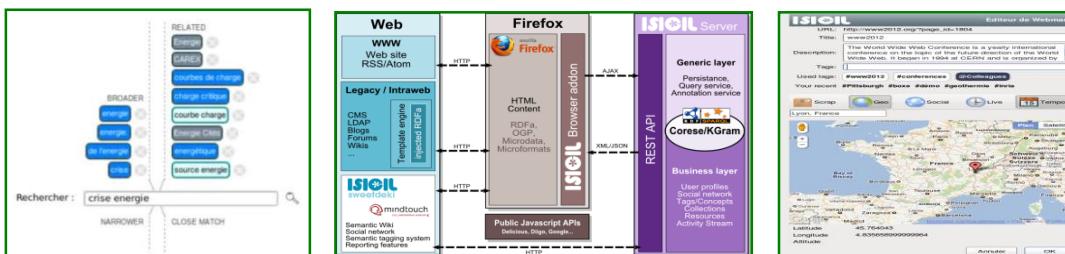
① integrating requirement analysis methods



② examples of challenges and derived functionalities



③ overview of this open-source platform



→ <http://isicil.inria.fr>



extracts of the requirement analysis and specifications

MERGING METHODOLOGIES

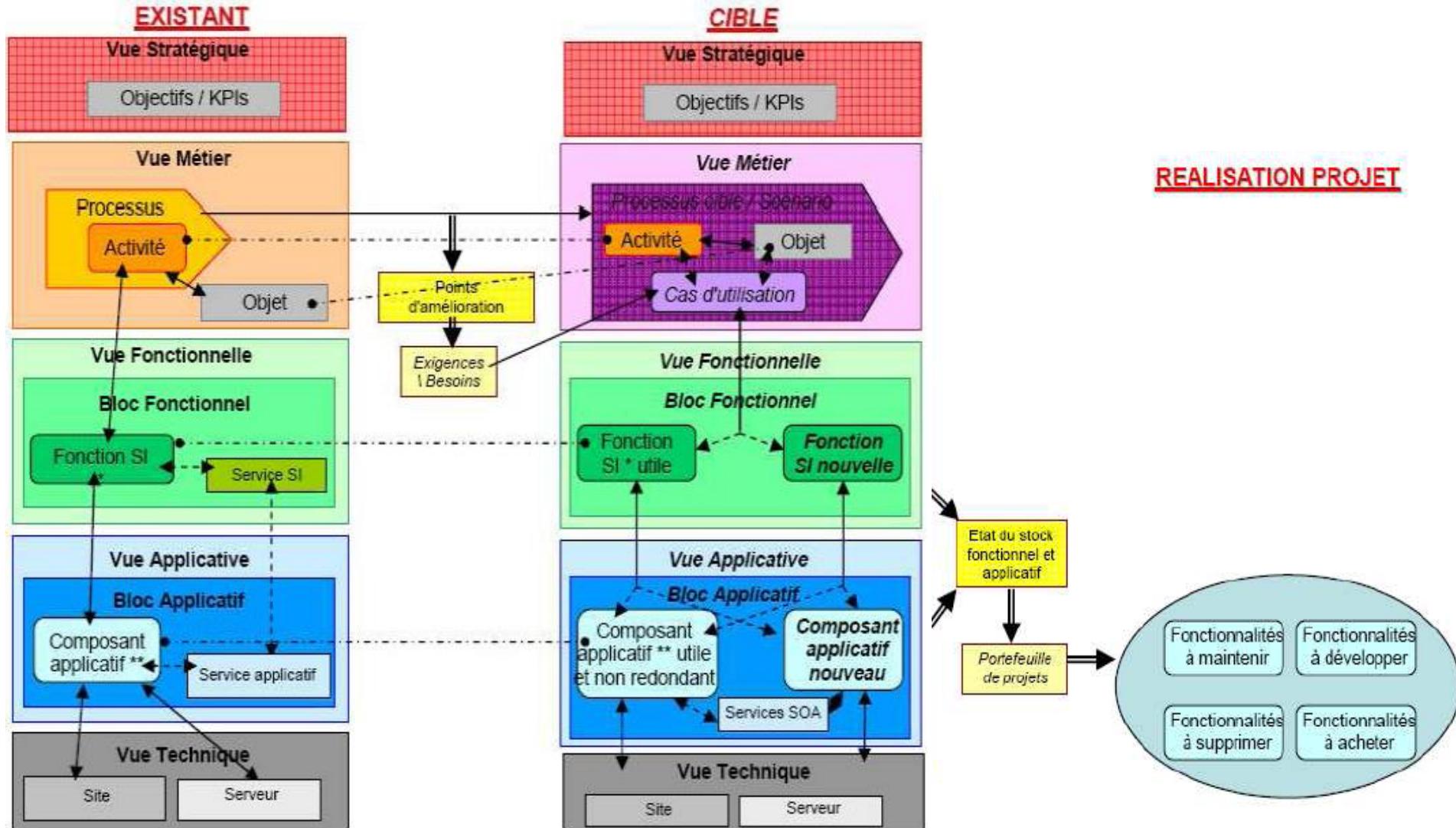


usage analysis an specification

- analyze and model key business processes
- Analyze interactions between members of the group
ADEME « roadmap for urban mobility »
- campaigns of questionnaires at Orange Labs
- trend analysis of intelligence market and watch
- comparison of the APIs, widgets and other applications



ex. study of transformations: existing → target

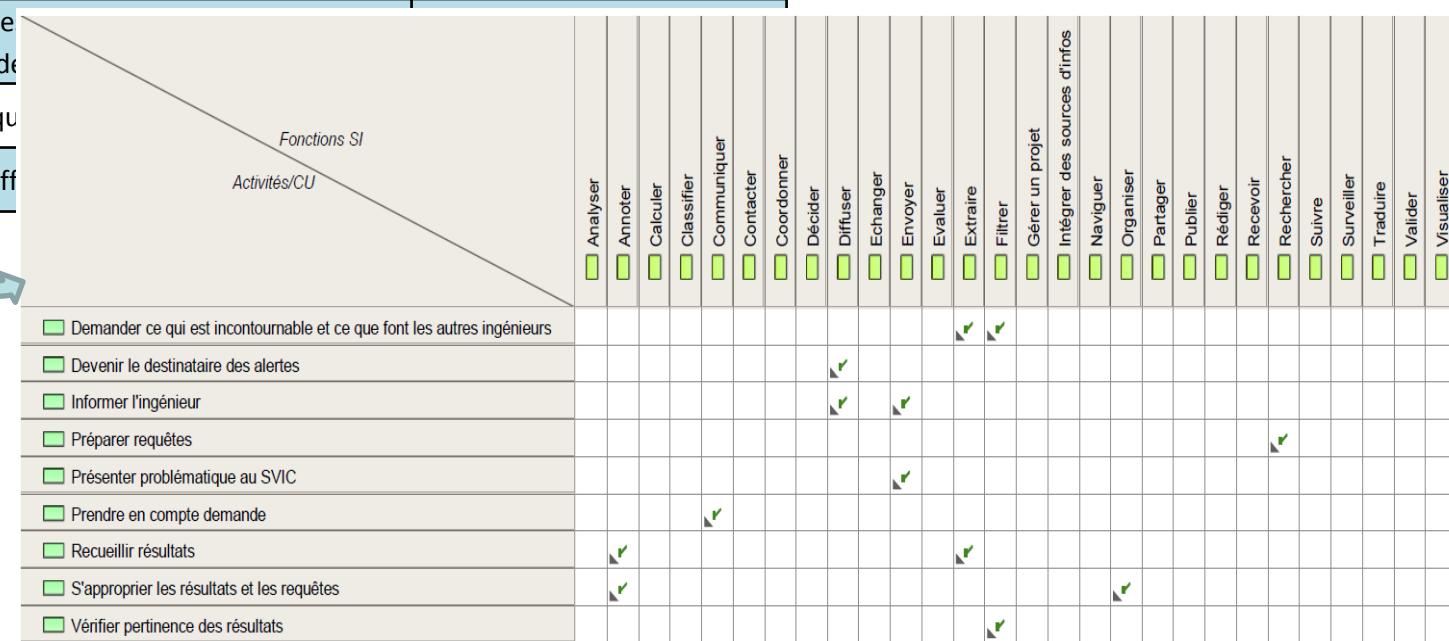




convergence matrix

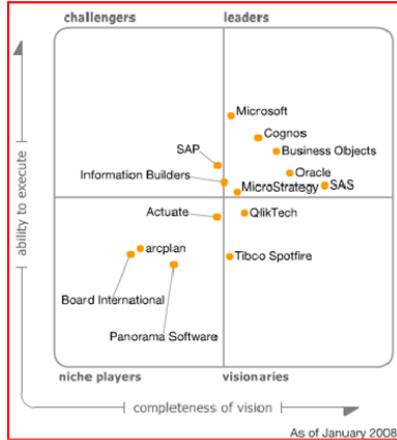
detections of needs or redundancies in key scenarios

Etapes des scénarios	Fonctionnalités identifiées	Fonctions SI
Présenter problématique au SVIC	Mailing, Q&A	Envoyer
Demander ce qui est incontournable et ce que font les autres ingénieurs	Consultation d'experts	Extraire, filtrer
Prendre en compte demande	Workflow, Outils de collaboration	communiquer
Préparer requêtes	Moteur de recherche, équation de recherche	rechercher
Recueillir résultats	Abonnement, push...	Extraire, annoter
Vérifier pertinence des résultats	Analyses, outils de filtrage	filtrer





business intelligence market analysis



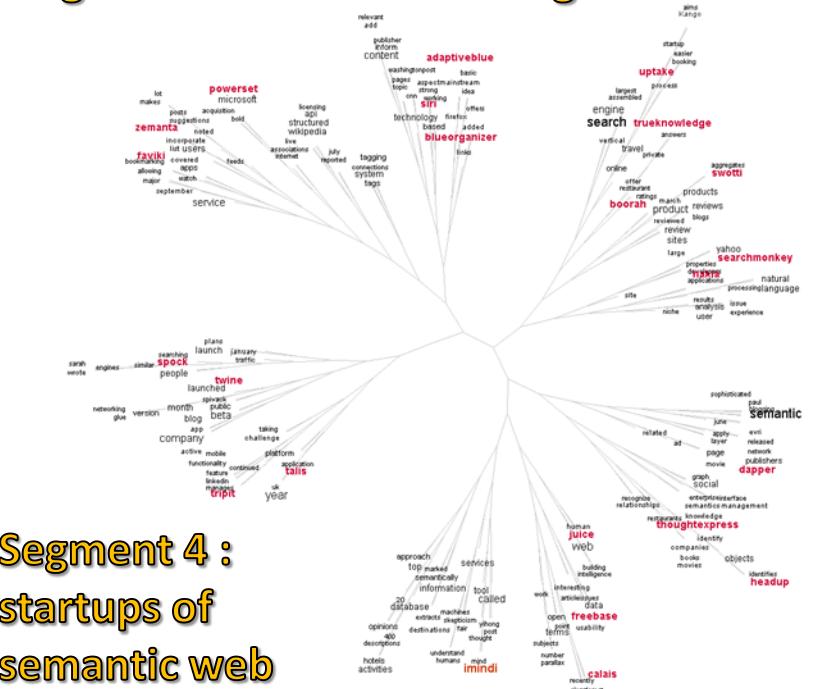
Segment 1 : Business Intelligence

Liste des entreprises	Commentaires	GARTNER	FORRESTER
		2007	2008
Atlassian	provides enterprise software solutions (cf. Bug tracker JIRA et Confluence enterprise Wiki)	X	
Awareness	Social media marketing and community features	X	
Blogtronix	Enterprise Social Media Platform social networking, blogs, wikis, RSS and more		X
blueKiwi Software	enterprise social software for people-centric organizations to create powerful and secure social networks integrating familiar features of Web 2.0 such as wikis, blogs, forums, RSS and tagging	X	
BrainKeeper	Web Based Enterprise Collaboration Software wiki software to create and manage a corporate knowledgebase		X
Cisco EOS	a hosted, white-label software as a service that enables Media & Entertainment companies to deploy, manage, and monetize online communities around their branded content		X
CollectiveX	online collaboration platform as use a Groupsite for Intranet Software, Calendar Sharing, and as Social networking software		X
CrowdFactory	powerful online platform that allows to create a social network site, includes features a community needs, including user profiles, galleries, blogs		X
KickApps	Online Platform for creating personal online community. Include custom social networking, message boards, video sharing, viral widgets, and other user generated content		X
Pluck	Providing syndication, blogging, user interaction and news aggregation software and services		X
SelectMinds	Corporate Social Networking Software		X

Segment 3 : entreprise 2.0

Liste des entreprises	Commentaires	V.I.	R.I.	TM - S	DM - C	T- RA	V-C	F-D	P. GC	P. CM
ACETIC	Point fort : analyse sémantique (plateforme Tropeo)		X	XX			X			
Advestigo	créneau: Protection d'Actifs Numériques		X	X	X			X		
ALOGIC		X	X	XX						X
AMI (ex Albert Inc)	Suite de solutions basées sur l'analyse sémantique	X	X	XX			X		X	X
Ardans	Réalisation de serveur de connaissances		X	X	X		X			X
ARISEM - Thales W	Exleader de la veille sémantique	X	XX	XX	X		X	X		X
ATTIVIO *	Solution soit en plateforme soit en OEM, avec son Active Intelligence Engine™(AIE)		XX	XX	X			X		XX
Autonomy *	Rachat de Verity	X	X	XX	XX	X	X	X		XX
Convera	Positionné sur la sémantique	X		XX						X
Coveo *	Concurrent d'Exalead, travaille en OEM		XX		X			X		
Diatopie				XX						X
Digimind	Fait partie des leaders français sur le marché de la veille	XX	X	X		X	X	X		X
Documentum	Une des meilleures offres du marché outre-Atlantique	X	X	X	XX			X	XX	
Endeca *	Avec sa « Information Access Platform »		X	X				X		XX
Exalead *	Evolution de sa suite vers le 2.0	XX	X					X		
Factiva (Dow Jones)		X	X	XX			X		X	X
GammaSite	positionné sur la sémantique	X		X	XX				XX	X
Google				XX					XX	
Grimmersoft	Solution monoposte pour les enquêtes WordMapper			X	X		X			
Hyperwave	Solution orientée e-learning	X	X		X			X	XX	X

Segment 2 : business intelligence market

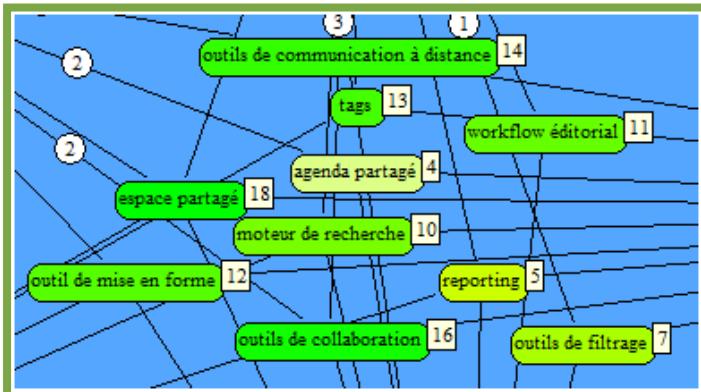


Segment 4 : startups of semantic web



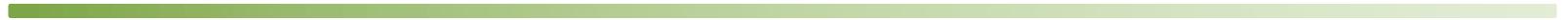
proposing functionalities & prototypes

Frequent functionalities and dependencies



Prioritization of functionalities

Exigences / problèmes récurrents	Sous-tâches envisagées (reliées aux travaux Inria/Kewi)	Fonctionnalités candidates rattachées	Fréquence
Construction collaborative de documents (Workflow rédactionnel partagé)	<ul style="list-style-type: none"> - Espace partagé de co-construction de documents (synthèses, rapports, feuilles de route, bulletins de veille...) - Mécanisme de valorisation / reconnaissance du travail accompli 	<ul style="list-style-type: none"> - Espace partagé - Outils de collaboration - Workflow éditorial - Outils de mise en forme - Mesure de la confiance/notoriété (e-réputation) - Évaluation de contenu 	18 16 13 12 1 1
Repérer et représenter les expertises (interne & externe car lien avec les industriels fort!)	<ul style="list-style-type: none"> - Profil qui fait quoi auto-taggué - Stockage et qualification des contacts - Suivre l'évolution dans le temps des expertises - Se représenter le réseau d'experts/de contacts (proximité thématique) - Métriques sur la capacité à partager/créer du lien social (personnes frontières) 	<ul style="list-style-type: none"> - Mise en forme : visualisations avancées, graphiques et cartographie - Localisation de personnes / d'experts - Filtrage - Gestion profils utilisateurs - Questions/réponses 	12 8 7 4 2
Créer ses propres services et indicateurs (pour le « métier d'ingénieur de services »)	<ul style="list-style-type: none"> - Créer ses propres services - Créer ses propres indicateurs (traçage et suivi des infos & des événements) <ul style="list-style-type: none"> - Relier les documents à leurs auteurs - Alertes sur les activités des autres - Optimiser la transversalité (liens tout azimut) 	<ul style="list-style-type: none"> - Création de tableaux de bord - Web services / Mashups - Tags/bookmarks - Alertes - Abonnements/RSS - Analyse et visualisation des réseaux sociaux 	3 1 13 2 2 2



examples of challenges and implementations (web 3.0 & enterprise 3.0)

EXAMPLES OF FONCTIONNALITIES

flat folksonomies



assisted structuring of folksonomies

[Limpens et al.]

web 2.0

Fabien Gandon's Bookmarks

Bookmarks | Network | Tags | Subscriptions | Inbox

Site: <http://www-sop.inria.fr/acacia/personne/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 entreprises utilisatrices 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

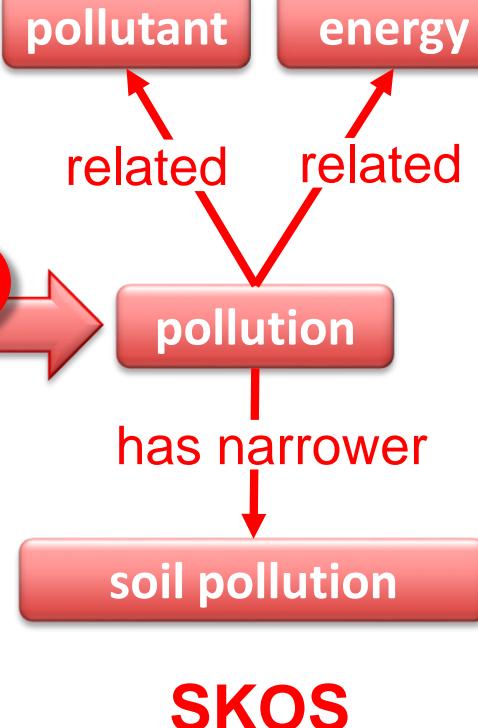
Pour cette première édition, la conférence française a réuni la communauté et présenté des cas d'utilisation concrets.

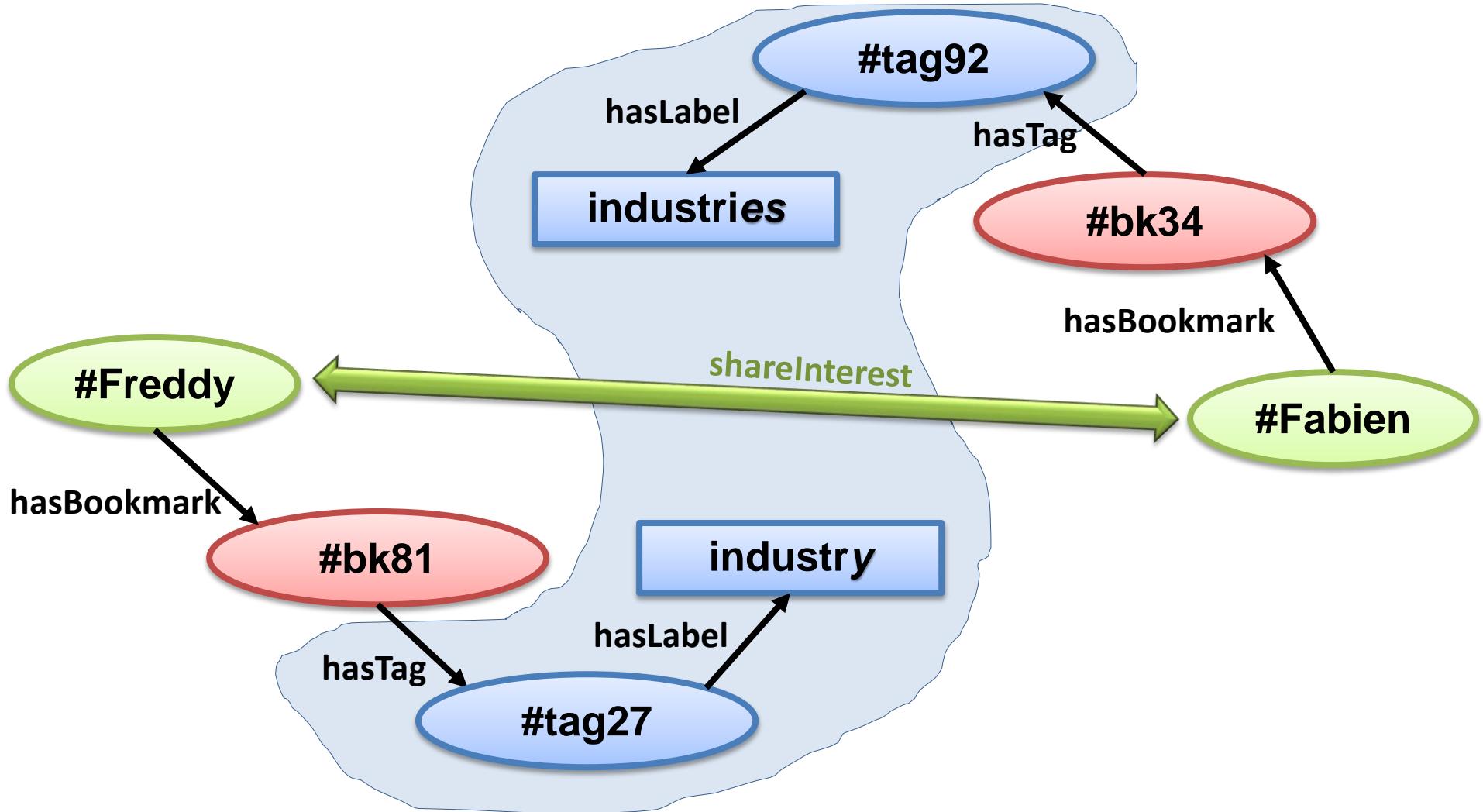
EDIT | SHARE | DELETE semantic_web semanticweb semweb France conference semwebpro media presse

flat folksonomies

communiaction 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 ecommerce economie
elevage emballage emission empreinte energie
encycpedie energie enquete environnement eolien
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

thesaurus





global giant graph
link users, actions, knowledge, resources, groups, etc.

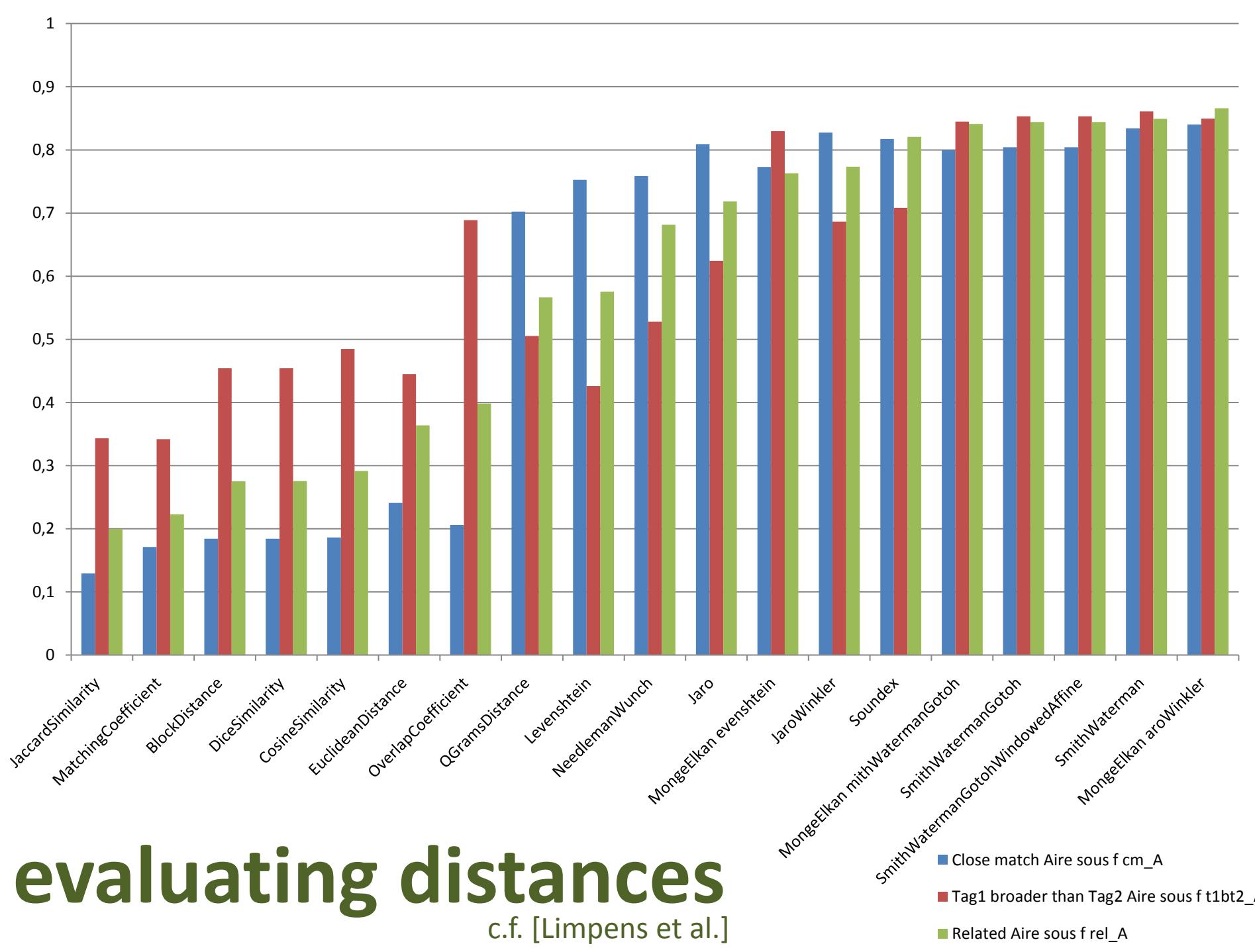
edition distances

pollution

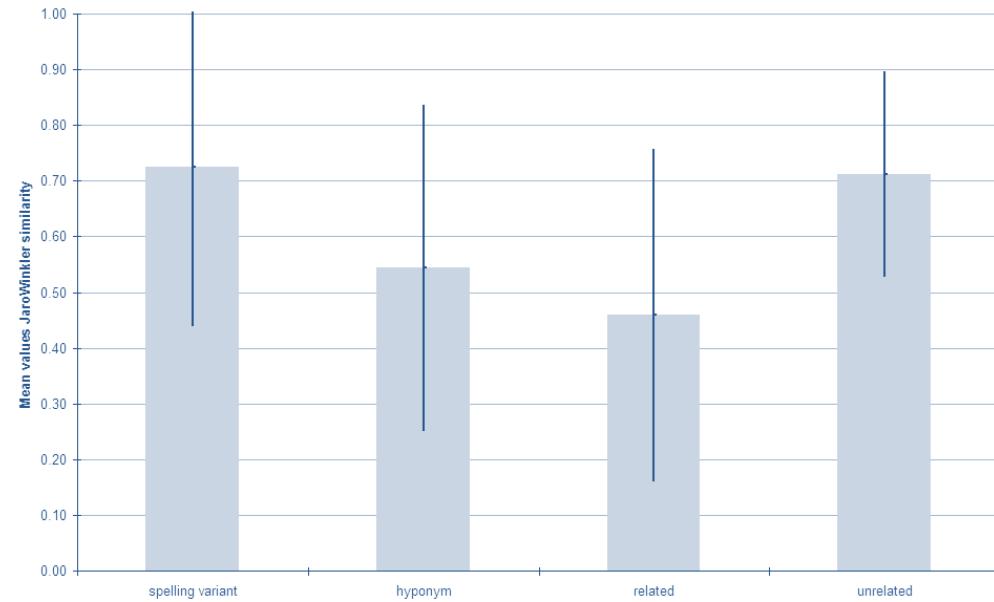
Soil pollutions

pollution

pollutant

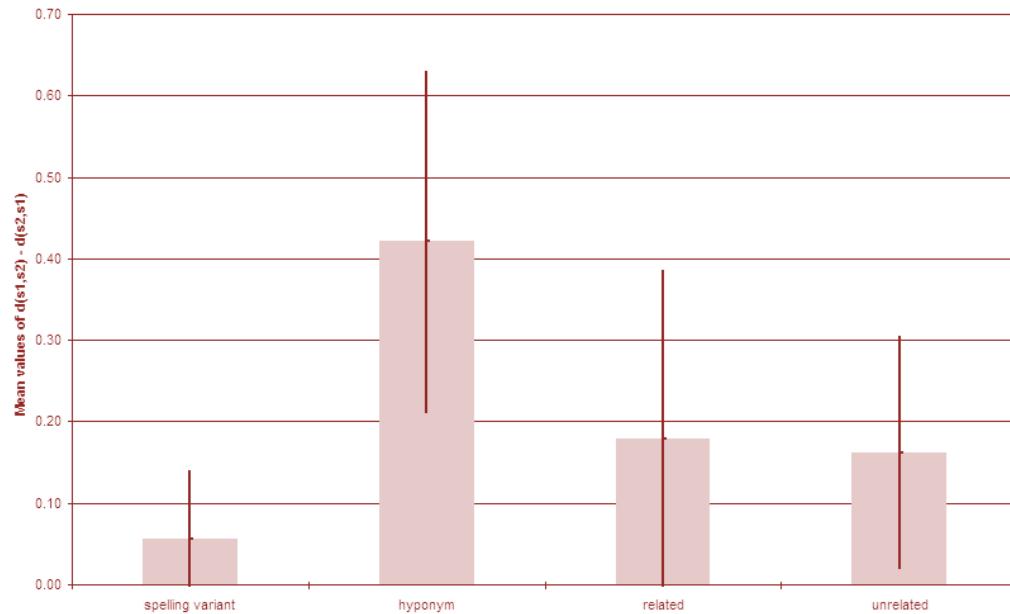


Comparison of the mean value of the JaroWinkler metric for each type of semantic relation

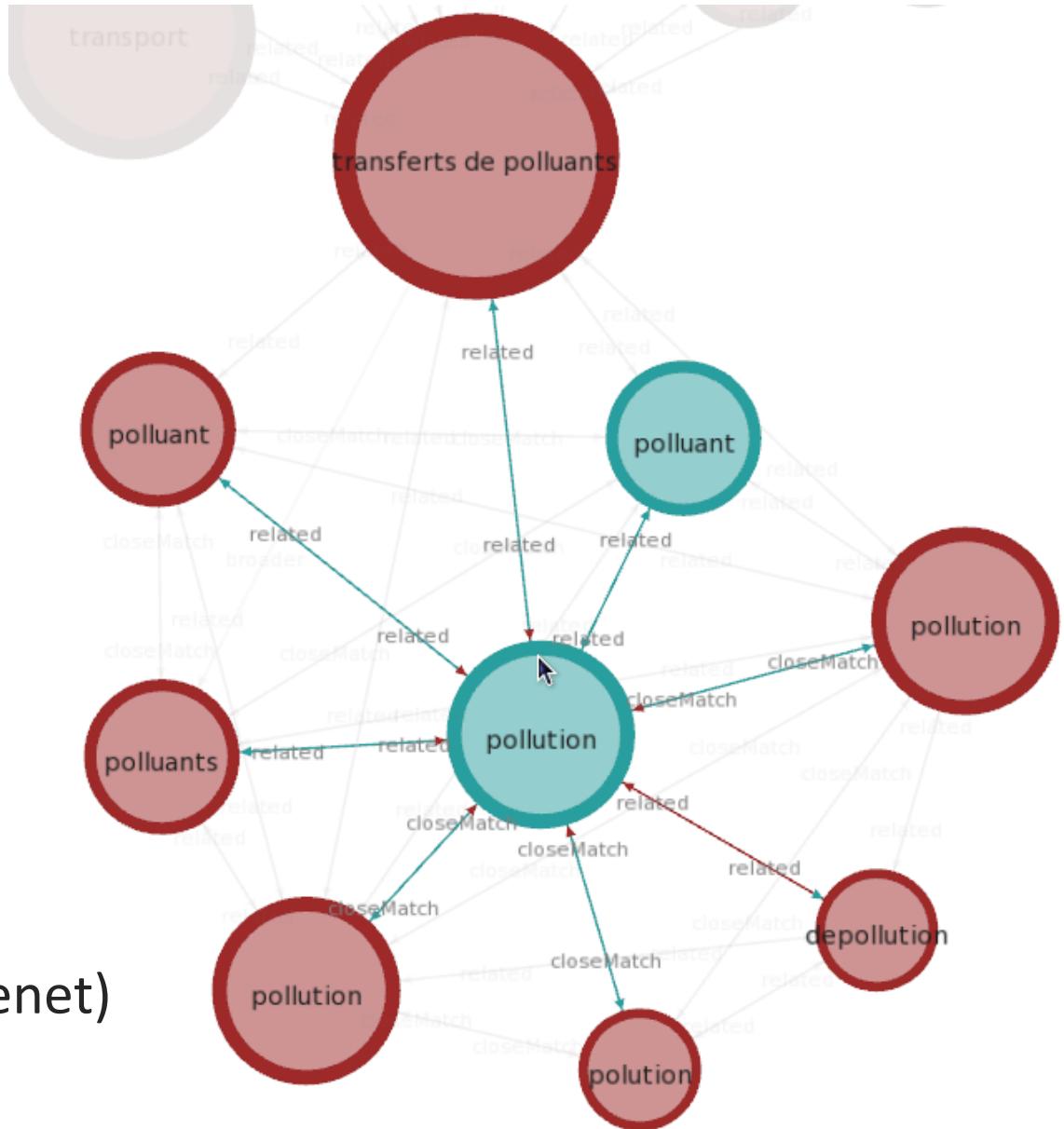


Mean value of the difference $s(t_1, t_2) - s(t_2, t_1)$ with s being the Monge-Elkan QGram metric for each set of tag pairs.

determine thesaurus relations



examples of results



Node size \leftrightarrow InDegree

- tags (delicious + thesenet)
- svic keywords

contextual distance: co-occurrence vector cosine distance to detect related tags

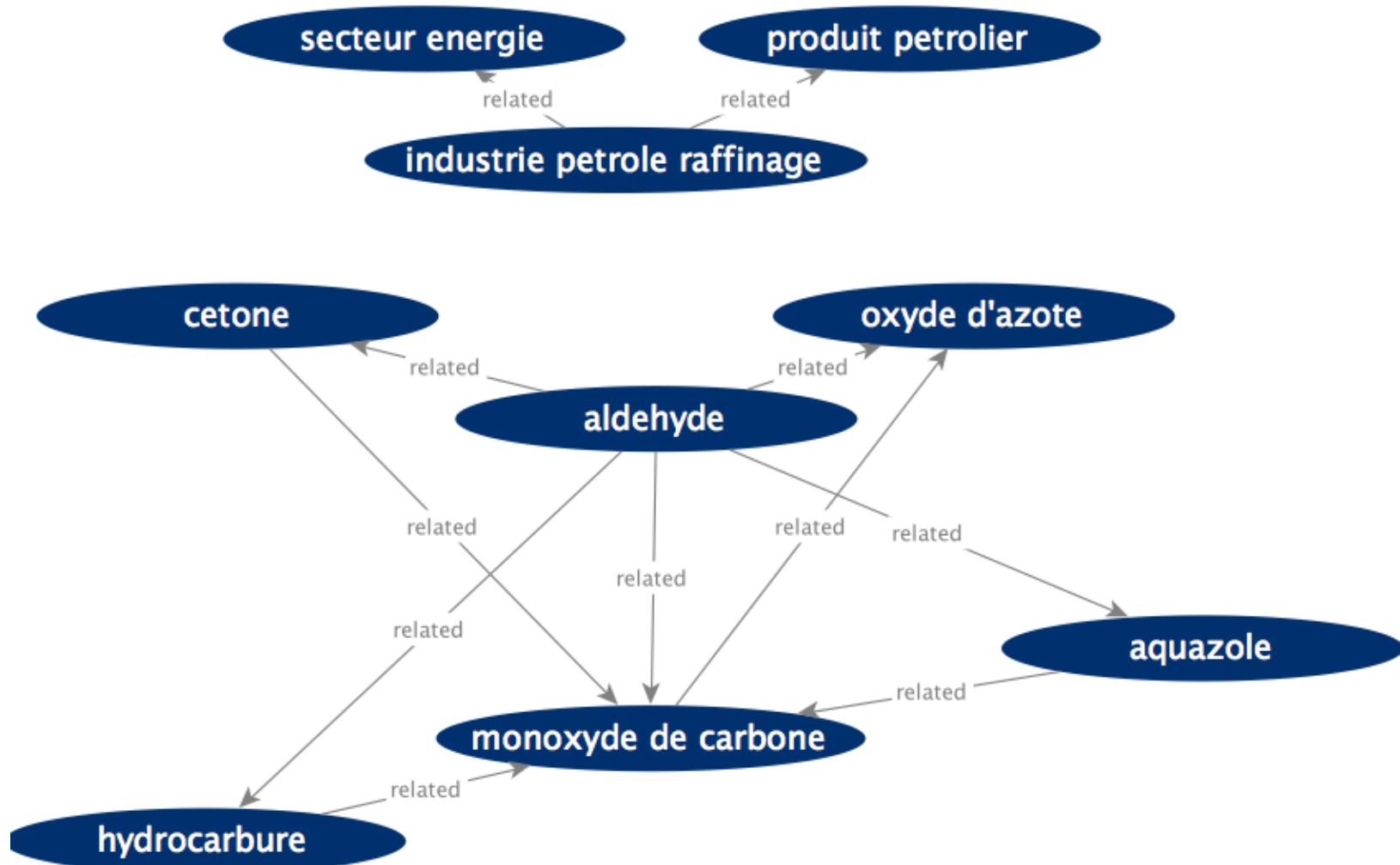
	tag1	tag2	tag3
tag1	freq (tag1)	cooc (tag1, tag2)	cooc (tag1, tag3)
tag2	cooc (tag2, tag1)	freq (tag2)	cooc (tag2, tag3)
tag3	cooc (tag3, tag1)	cooc (tag3, tag2)	freq (tag3)

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

[Cattuto et al. 2008]

example of results

CADIC, ADEME



interest community inclusion

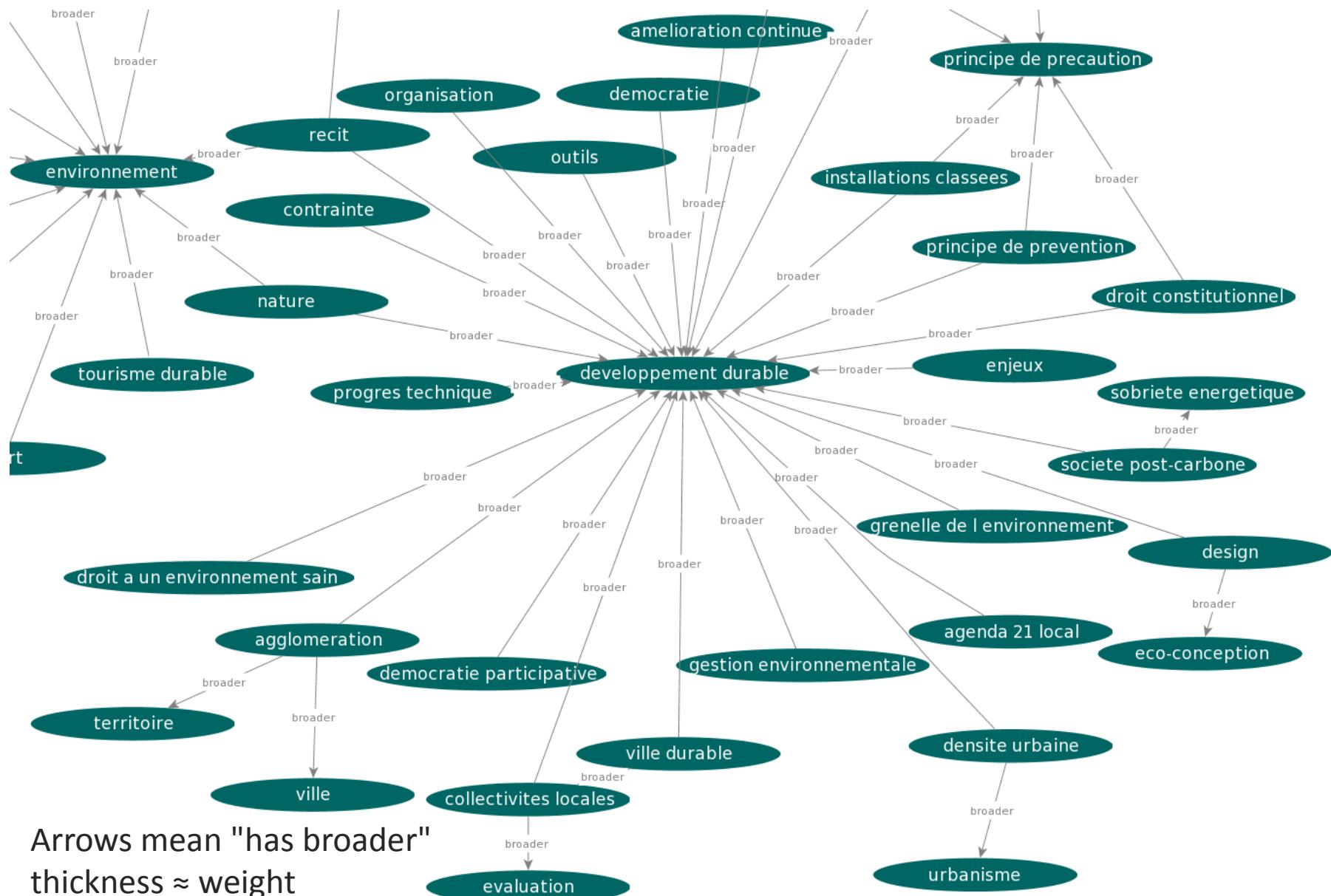
detecting narrower tags [Mika et al.]

$$\{user_{tag_1}\} \subset \{user_{tag_2}\} \Rightarrow (tag_2, hasnarrower, tag_1)$$



examples of results

del.icio.us



combining metrics

edition distances

Monge-Elkan Soundex, JaroWinkler,

asymmetry Monge-Elkan Qgram



contextual metric

cosinus vector co-occurring tags

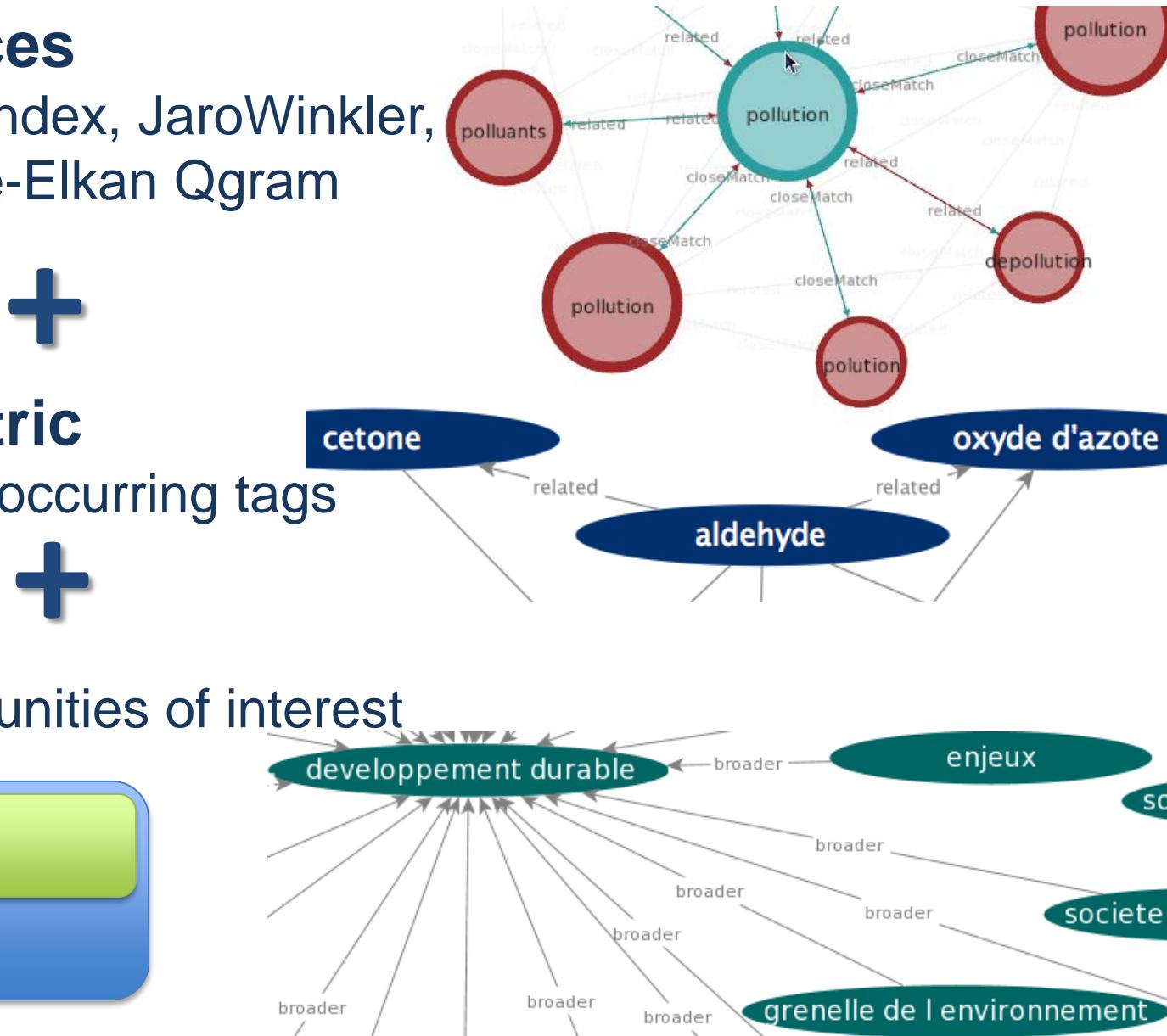


social metrics

inclusion of communities of interest

football

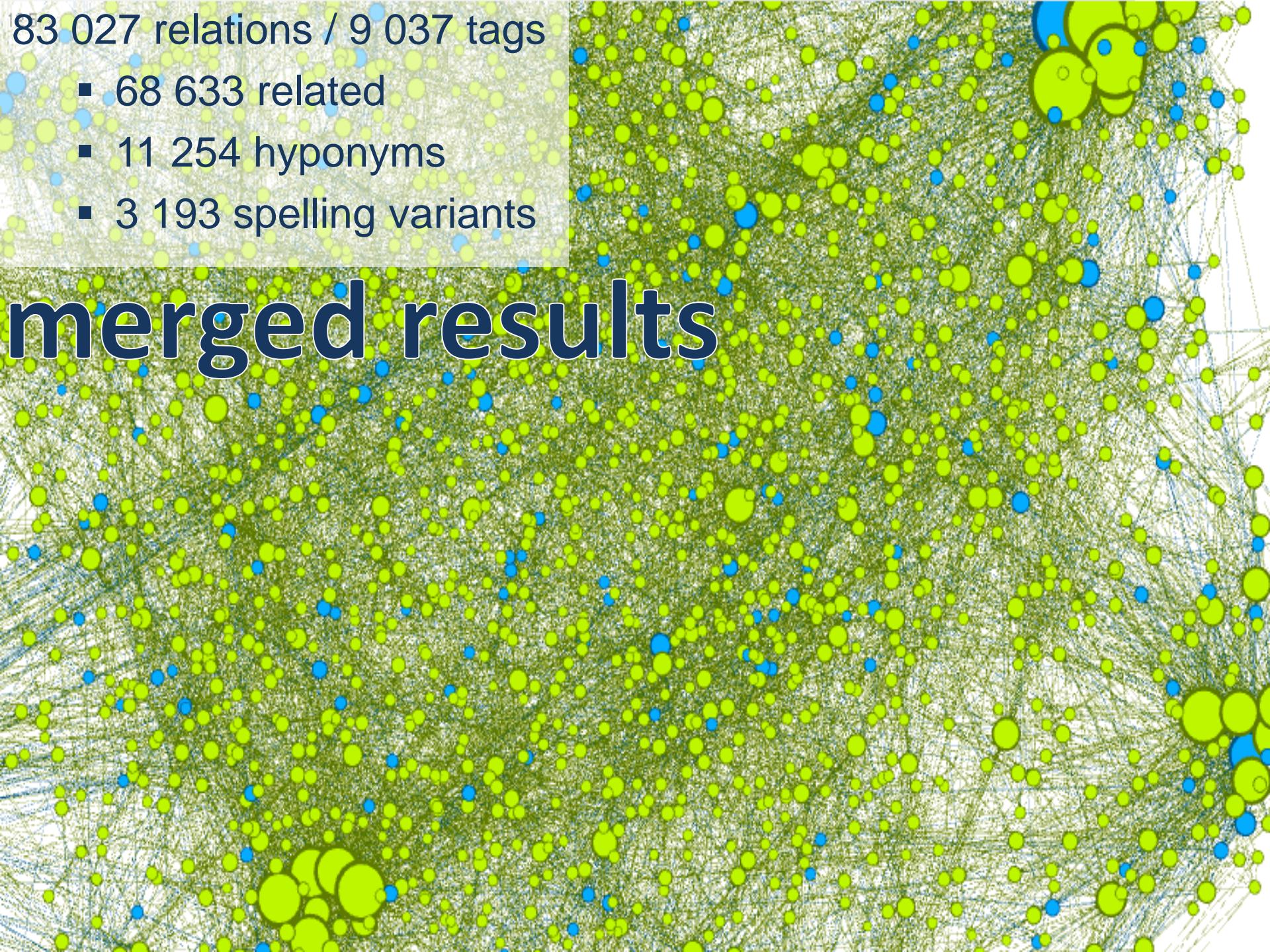
sport



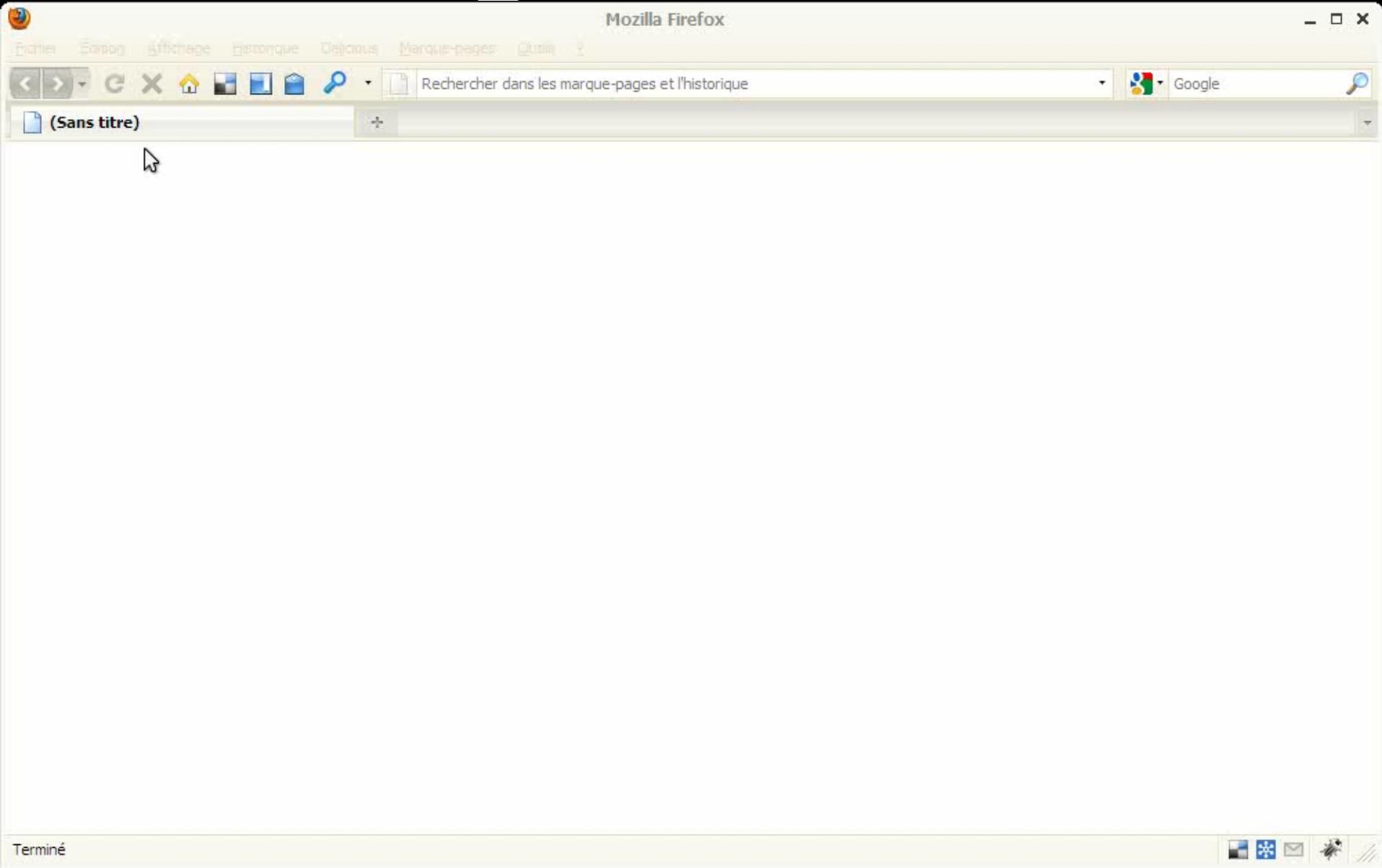
83 027 relations / 9 037 tags

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

merged results



structuring as a side effect





handling conflicts

arbitration rules

IF $\text{num}(\text{narrower}) / \text{num}(\text{broader}) \geq c$
THEN narrower/broader
ELSE related

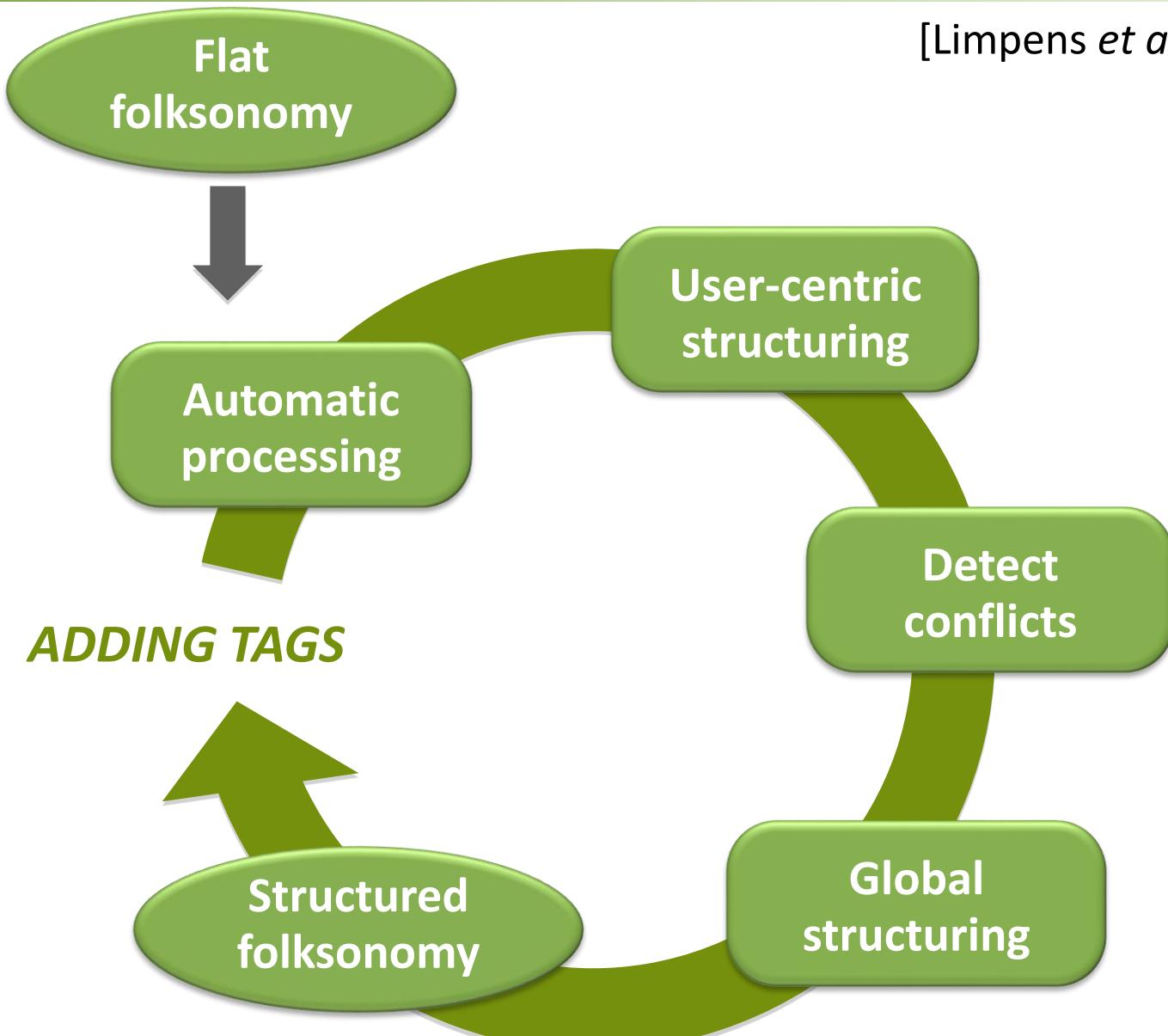


purely automatic
conflicting
arbitrated conflict
debated
consensual



folksonomy enrichment lifecycle

[Limpens *et al.*]

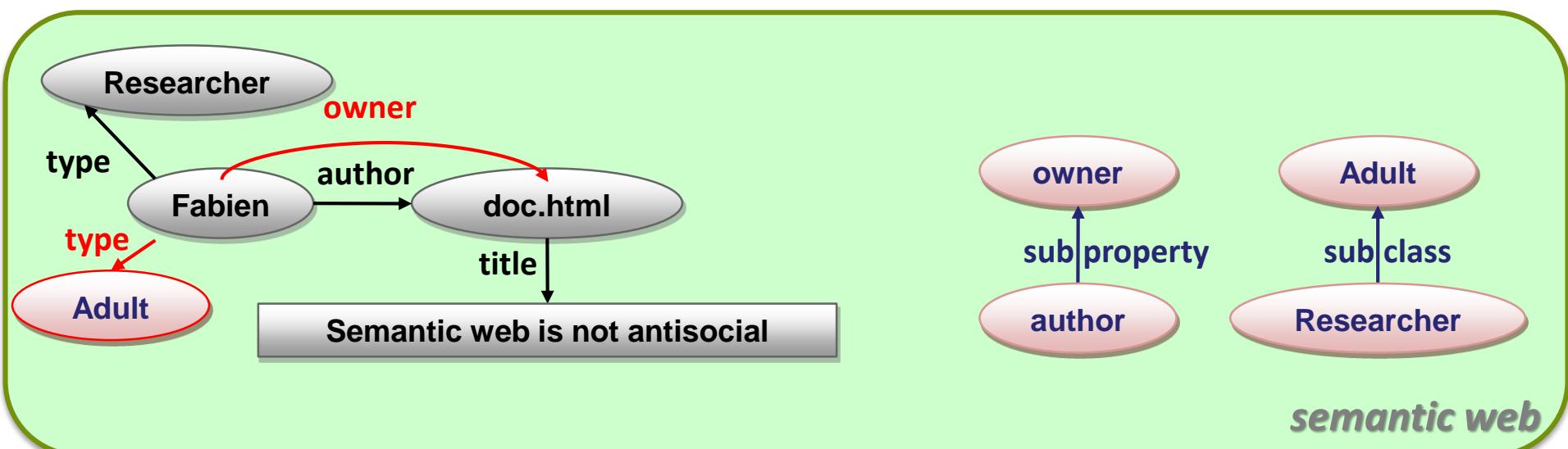
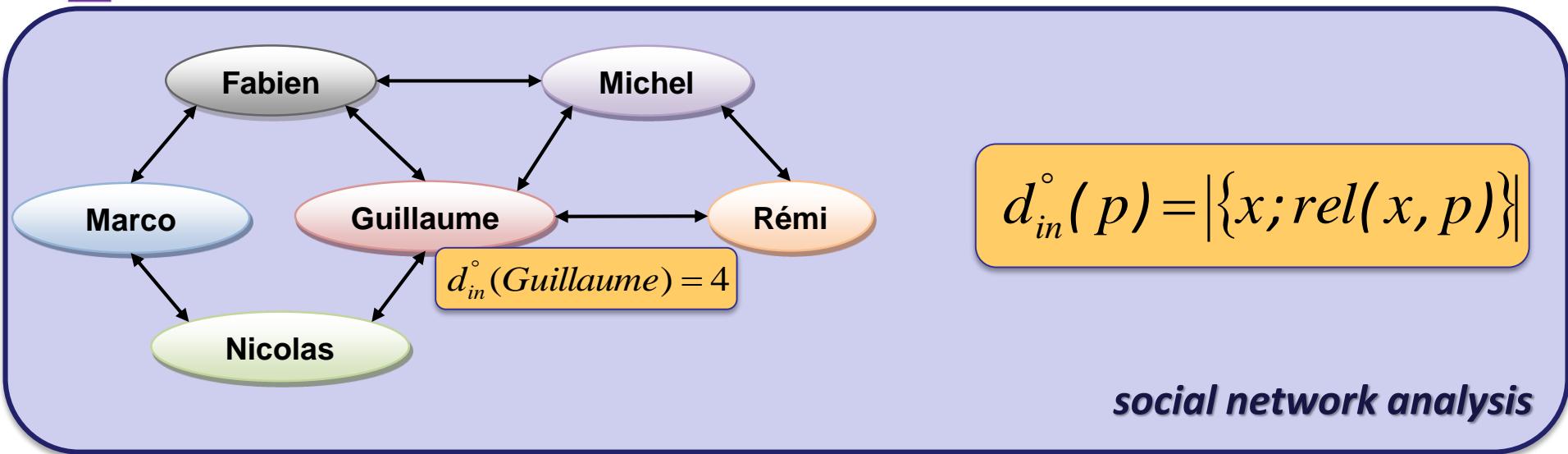


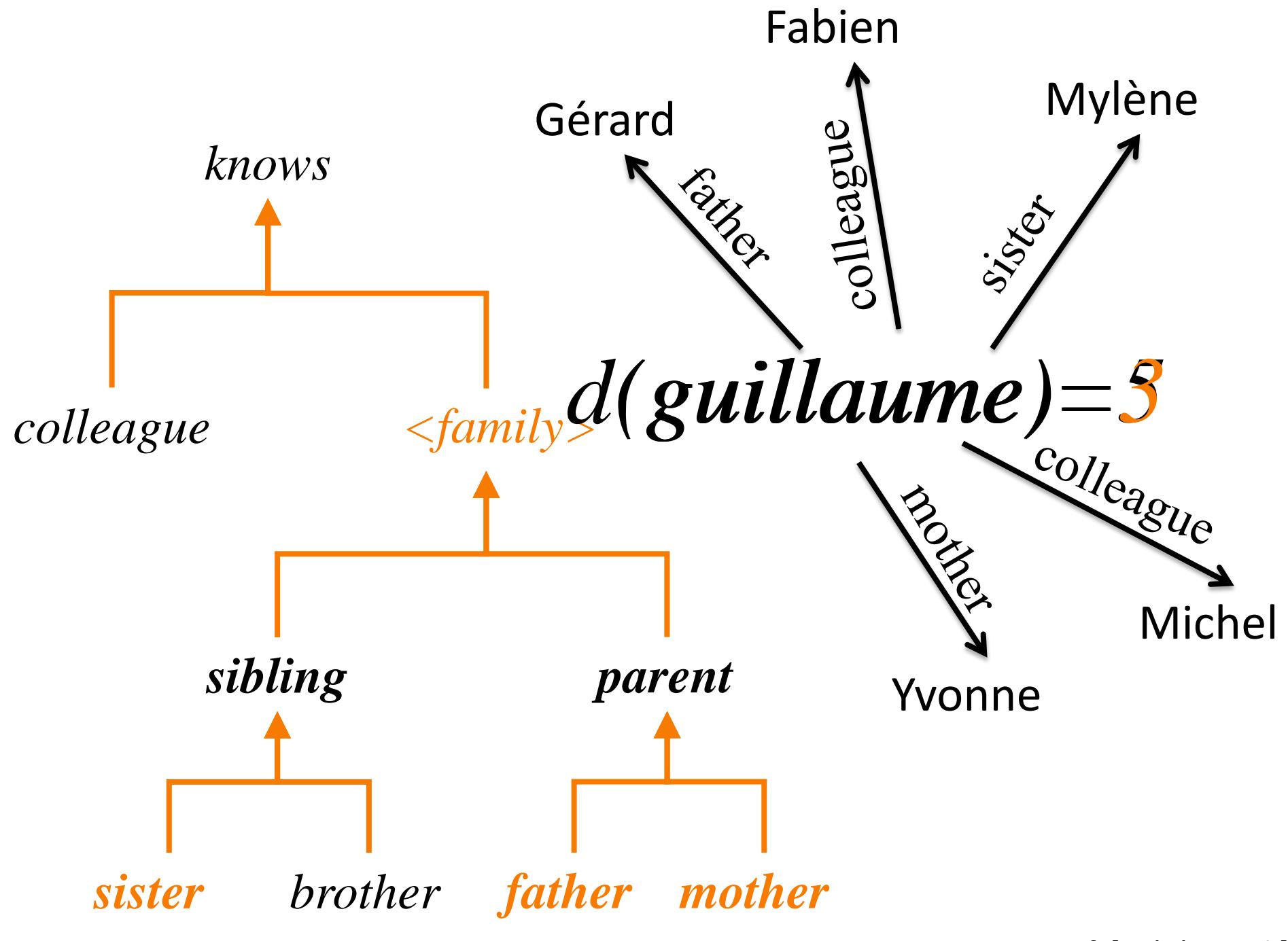


sociograms 3.0



Graphs, graphs, graphs



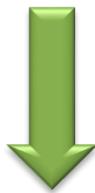


c.f. [Erétéo et al.]



eg. typed proximity centrality

$$C_{<knows^*/\text{worksWith}^{\triangleright}}(k) = \left[\sum_{x \in E_G} \text{length}(g_{<knows^*/\text{worksWith}^{\triangleright}}(k, x)) \right]^{-1}$$



```
select distinct ?y ?to  
    pathLength($path) as ?length  
    (1/sum(?length)) as ?centrality  
where {  
    ?y s (foaf:knows*/rel:worksWith):::$path ?to  
} group by ?y
```

e.g.

SNA indices	SPARQL formal definition
$Comp_{\langle rel \rangle}(G)$	select ?x ?y from <G> where { ?x param[rel] ?y }group by any ⁷
$D_{\langle rel,dist \rangle}(y)$	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
$D_{\langle rel,dist \rangle}^{in}(y)$	select ?y count(?x) as ?indegree where{ ?x (param[rel])*:::\$path ?y filter(pathLength(\$path) ⁸ <= param[dist]) }group by ?y
$Diam_{\langle rel \rangle}(G)$	select pathLength(\$path) as ?length from <G> where { ?y s (param[rel])*:::\$path ?to }order by desc(?length) limit 1
$nb_{\langle rel \rangle}^g(from,to)$	select ?from ?to count(\$path) as ?count where{ ?from sa (param[rel])*:::\$path ?to }group by ?from ?to
$nb_{\langle rel \rangle}^g(b,from,to)$	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
$C_{\langle rel \rangle}^c(y)$	select distinct ?y ?to pathLength(\$path) as ?length (1/sum(?length)) as ?centrality where{ ?y s (param[rel])*:::\$path ?to }group by ?y
$C_{\langle rel \rangle}^b(b)$	Non SPARQL post-processing on shortest paths.



A dog's life? "Shared by **MaxST**"

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Sony World Photography Awards
Cannes 2009

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.



some interpretations

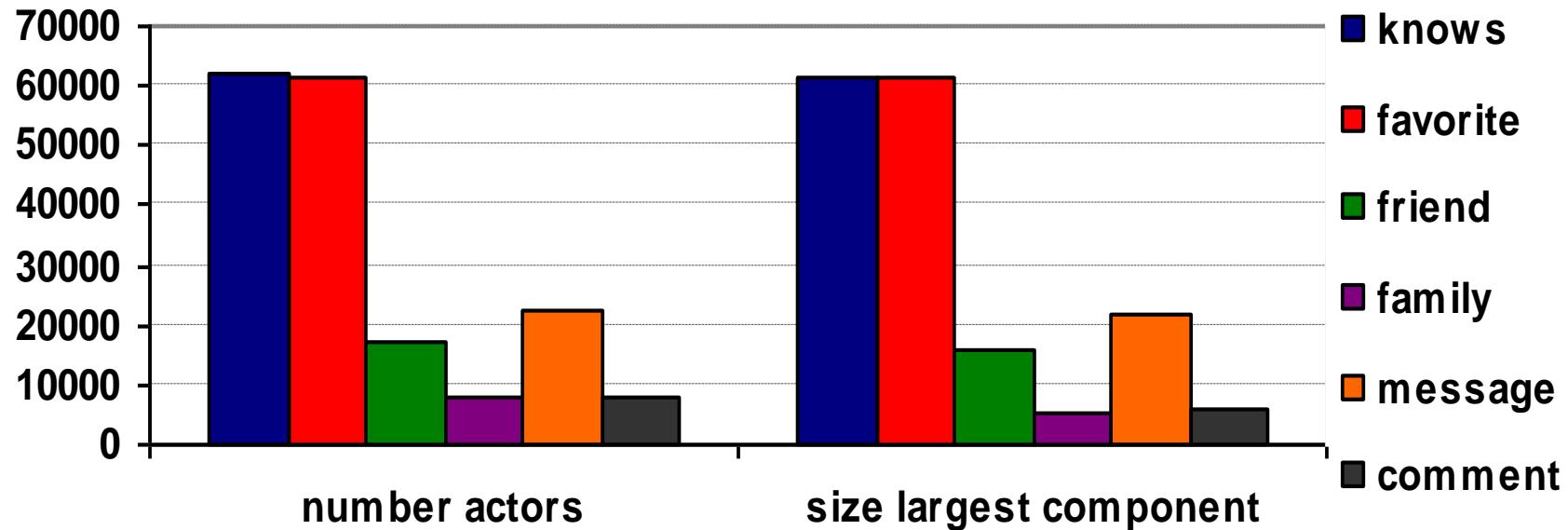
validated with managers of ipernity.com

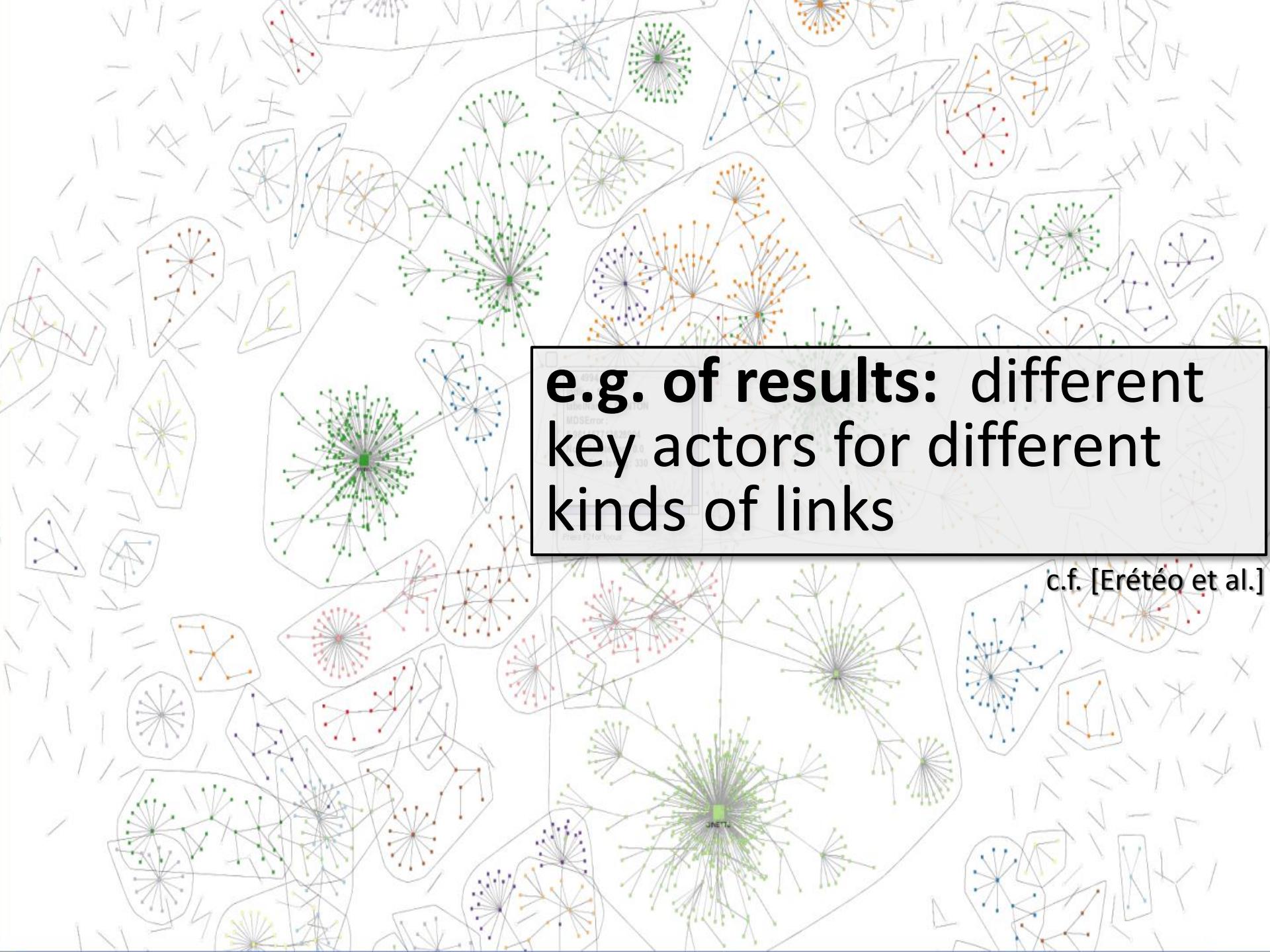
- friendOf, favorite, message, comment
small diameter, high density
- family as expected: large diameter, low density
- favorite: highly centralized around Ipernity animator.
- friendOf, family, message, comment: power law of

some interpretations

existence of a largest *component* in all sub networks

"the effectiveness of the social network at doing its job" [Newman 2003]





e.g. of results: different key actors for different kinds of links

c.f. [Eréteo et al.]

PERFORMANCES & LIMITS

		time	projections
$Comp_{<rel>}(G)$	Knows	0.71 s	494 510
	Favorite	0.64 s	339 428
	Friend	0.31 s	136 311
	Family	0.03 s	18 771
	Message	1.98 s	795 949
	Comment	9.67 s	2 874 170
$D_{<rel,1>}(y)$	Knows	20.59 s	989 020
	Favorite	18.73 s	678 856
	Friend	1.31 s	272 622
	Family	0.42 s	37 542
	Message	16.03 s	1 591 898
	Comment	28.98 s	5 748 340
Shortest paths used to calculate	Knows	Path length <= 2: 14m 50.69s	100 000
		Path length <= 2: 2h 56m 34.13s	1 000 000
		Path length <= 2: 7h 19m 15.18s	2 000 000
	Favorite	Path length <= 2: 5h 33m 18.43s	2 000 000
		Path length <= 2: 1m 12.18 s	1 000 000
	Friend	Path length <= 2: 2m 7.98 s	2 000 000
		Path length <= 2 : 27.23 s	1 000 000
		Path length <= 2 : 2m 9.73 s	3 681 626
		Path length <= 3 : 1m 10.71 s	1 000 000
	Family	Path length <= 4 : 1m 9.06 s	1 000 000

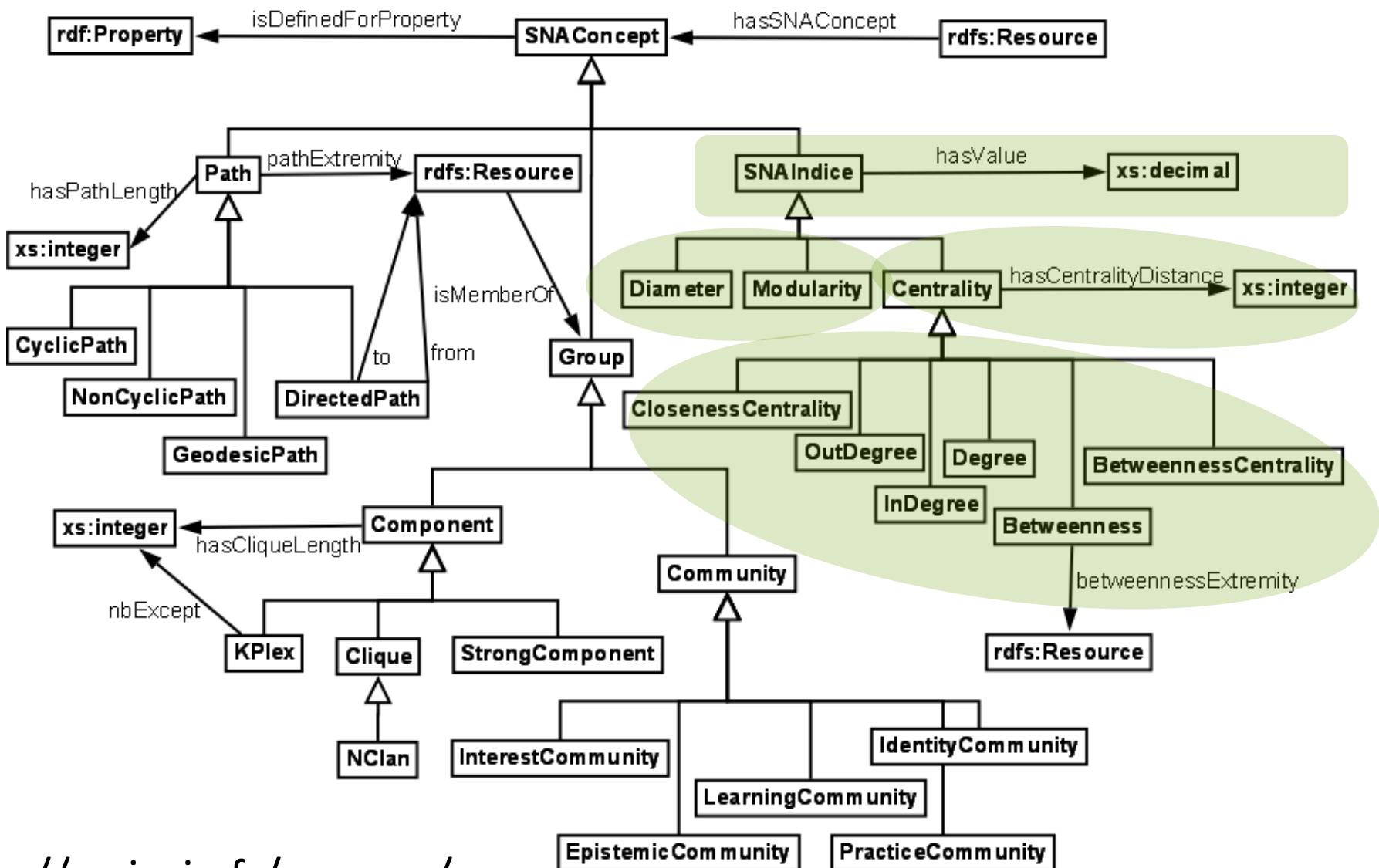
high centrality



annotating the networks with analysis results
SEMSNA SCHEMA

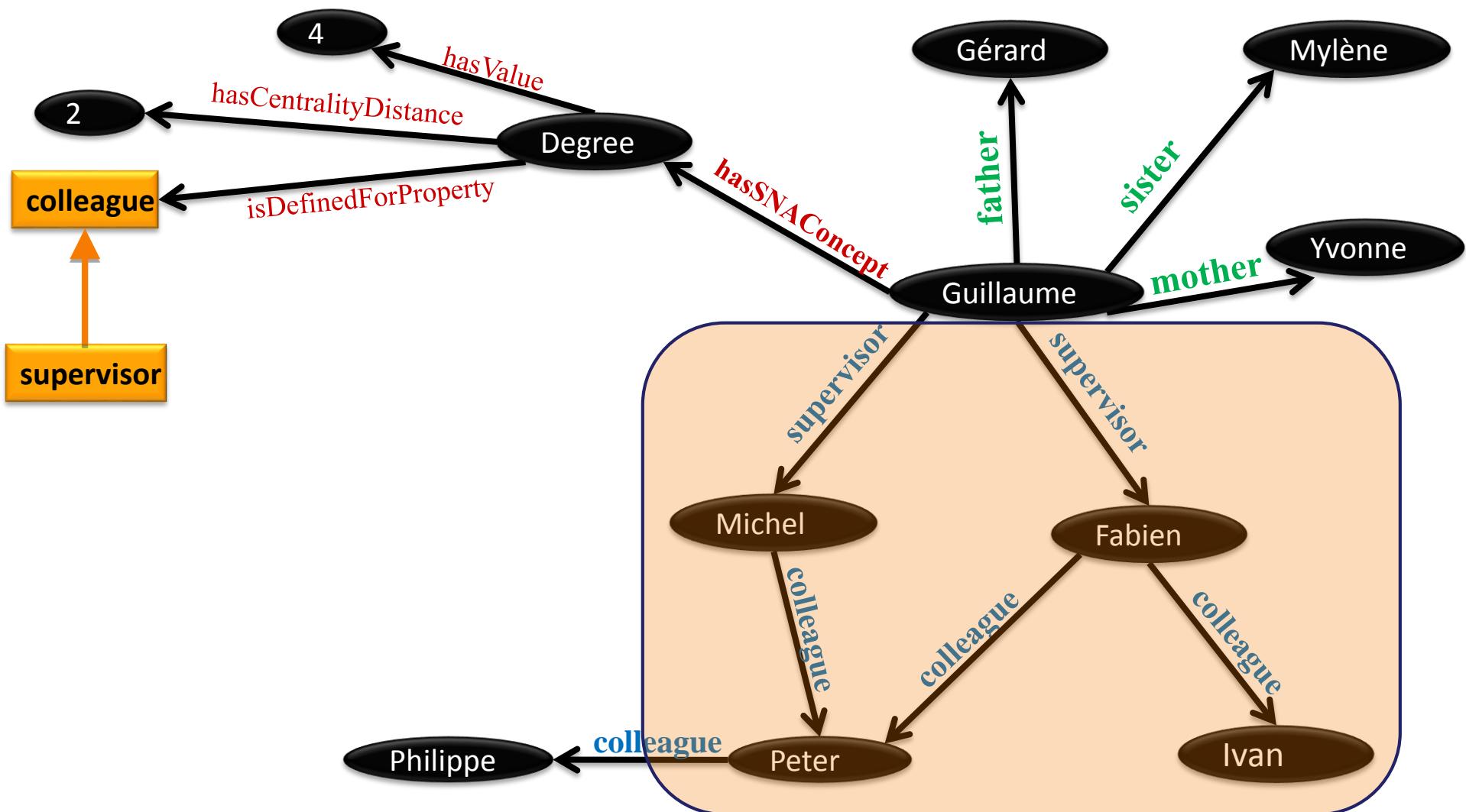


SemSNA an ontology of SNA





example of SemSNA



```

ADD {
  ?y semsna:hasInDegree _:b0
  _:b0 semsna:forProperty param[type]
  _:b0 rdf:value ?indegree
  _:b0 semsna:hasLength param[length]
}

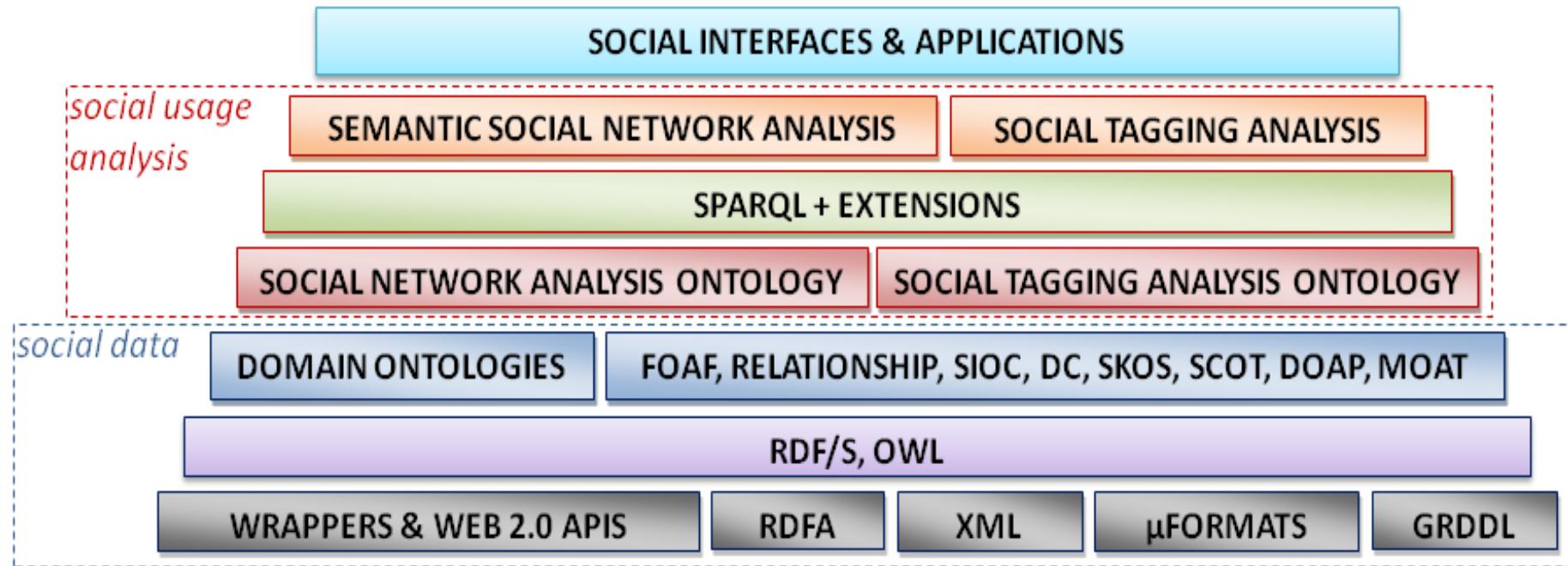
SELECT ?y count(?x) as ?indegree {
  ?x $path ?y
  filter(match($path, star(param[type]))) )
  filter(pathLength($path)<= param[length])
} group by ?y

```

parameterized in-degree

$d^o_{in<type,length>} (y)$





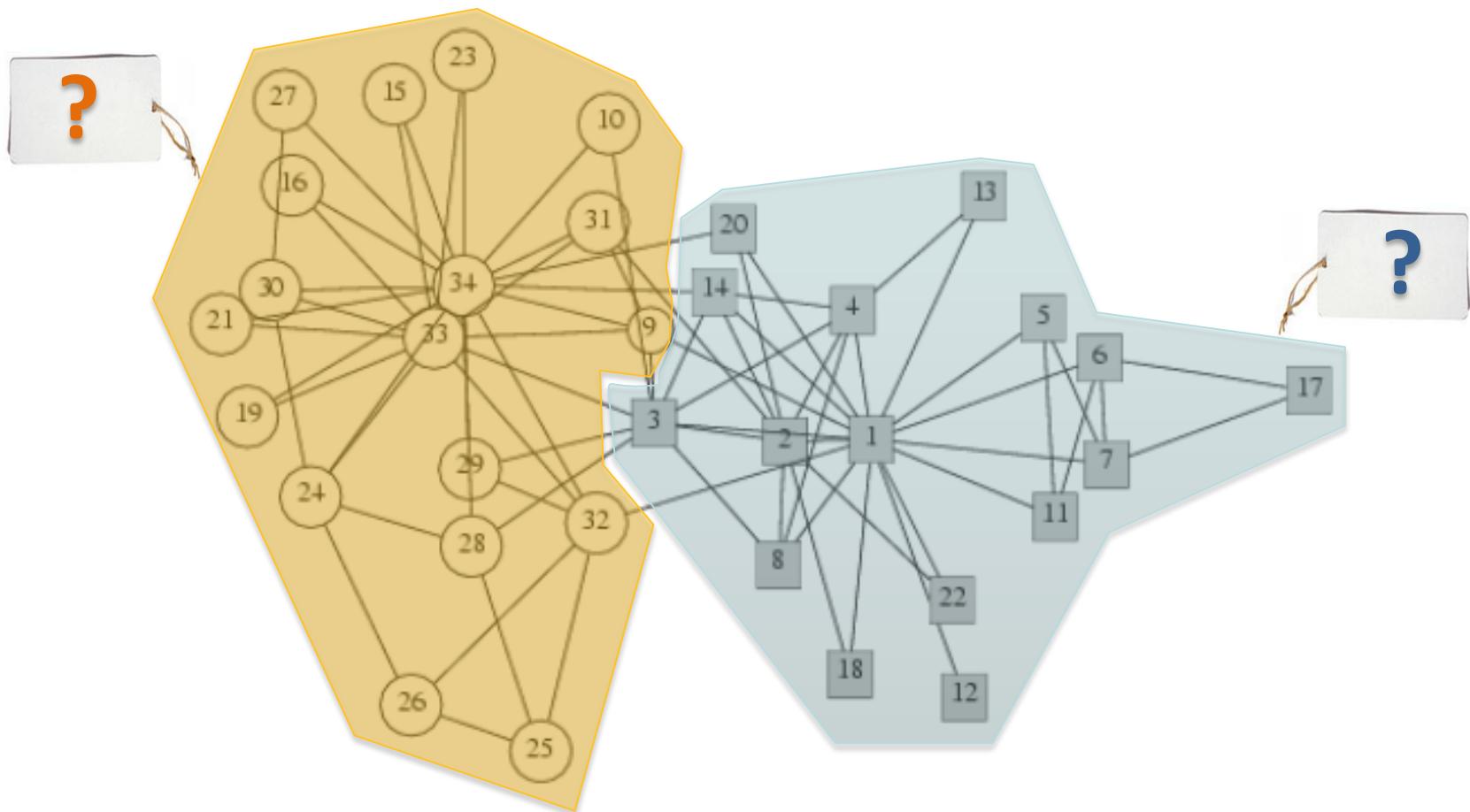
conceptual and software framework
for a semantic analysis of social networks using
semantic web frameworks

groups & reasons





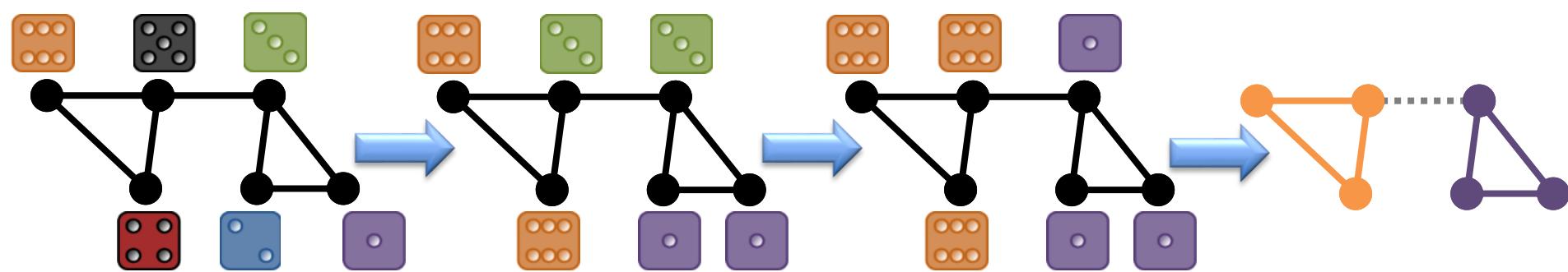
detecting AND labeling communities



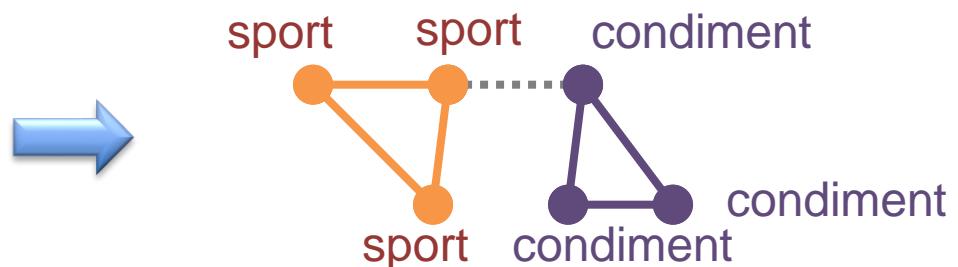
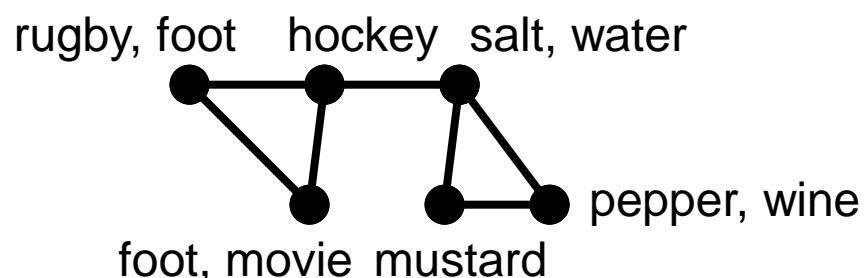


propagating tags
to discover communities of interest

tags to detect and label communities

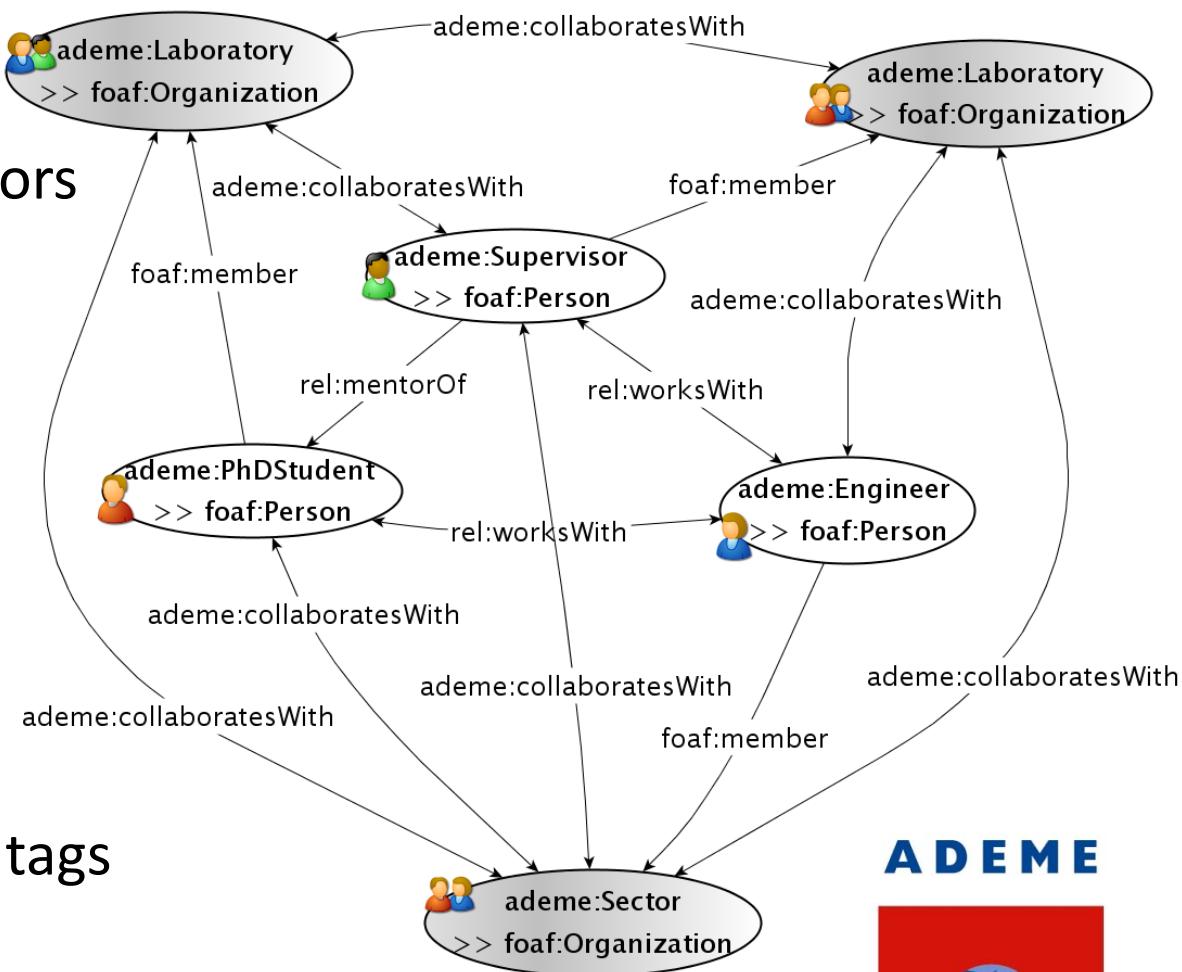


extension of algorithm RAK/LP :
from random labels to structured tags



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

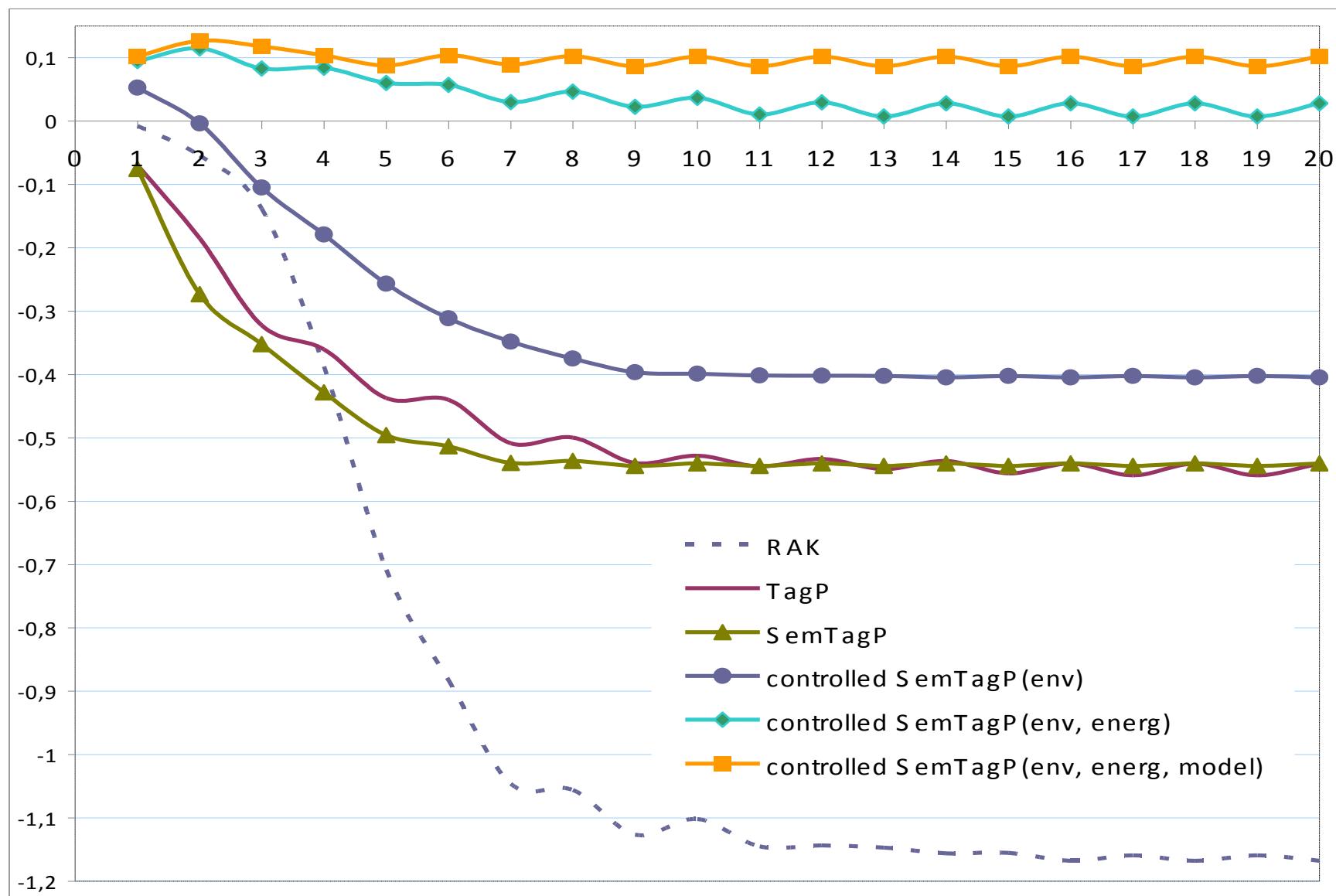


A D E M E



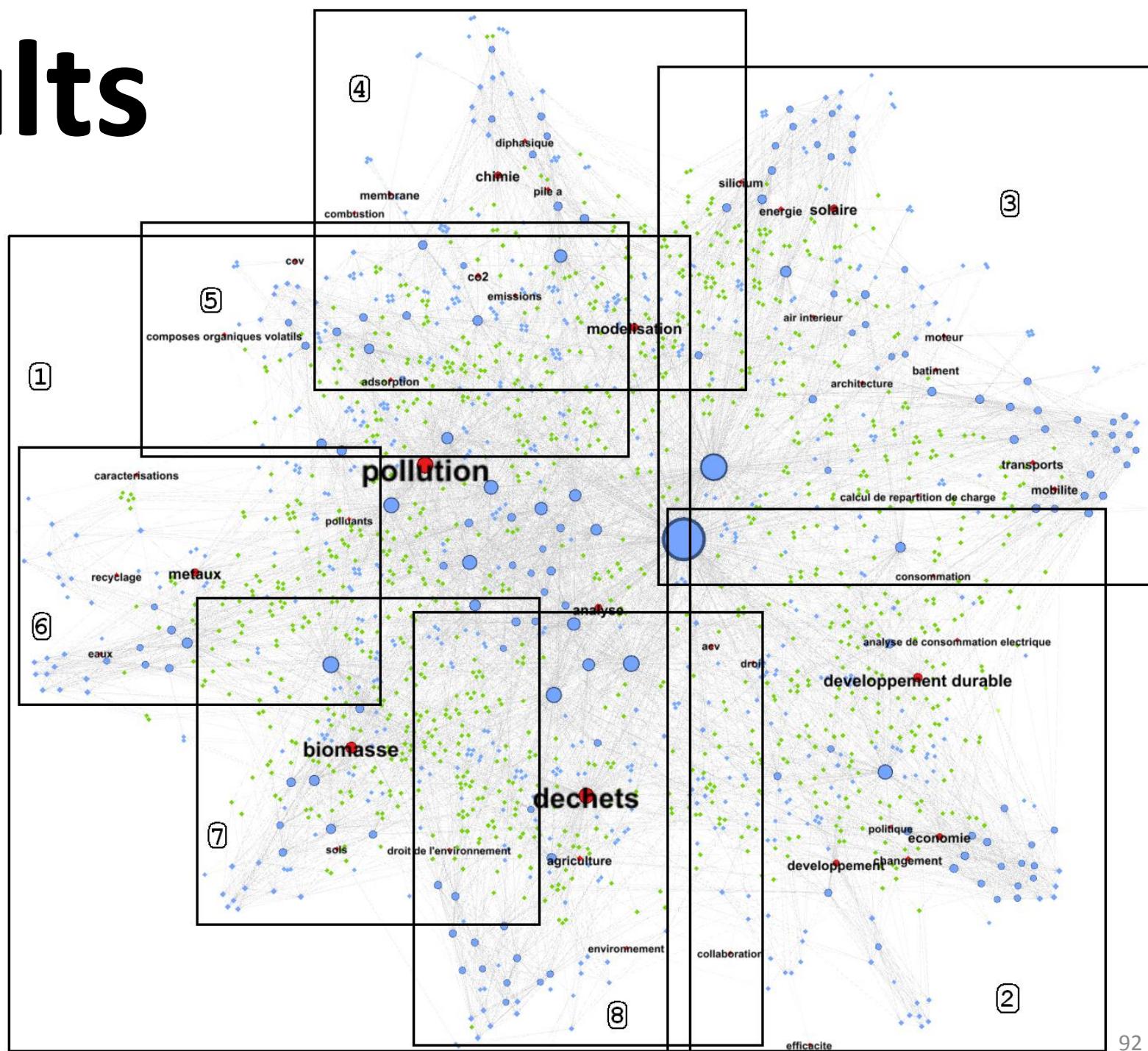
MODULARITY COMPARISONS

X axis: propagation iterations, Y axis: modularity

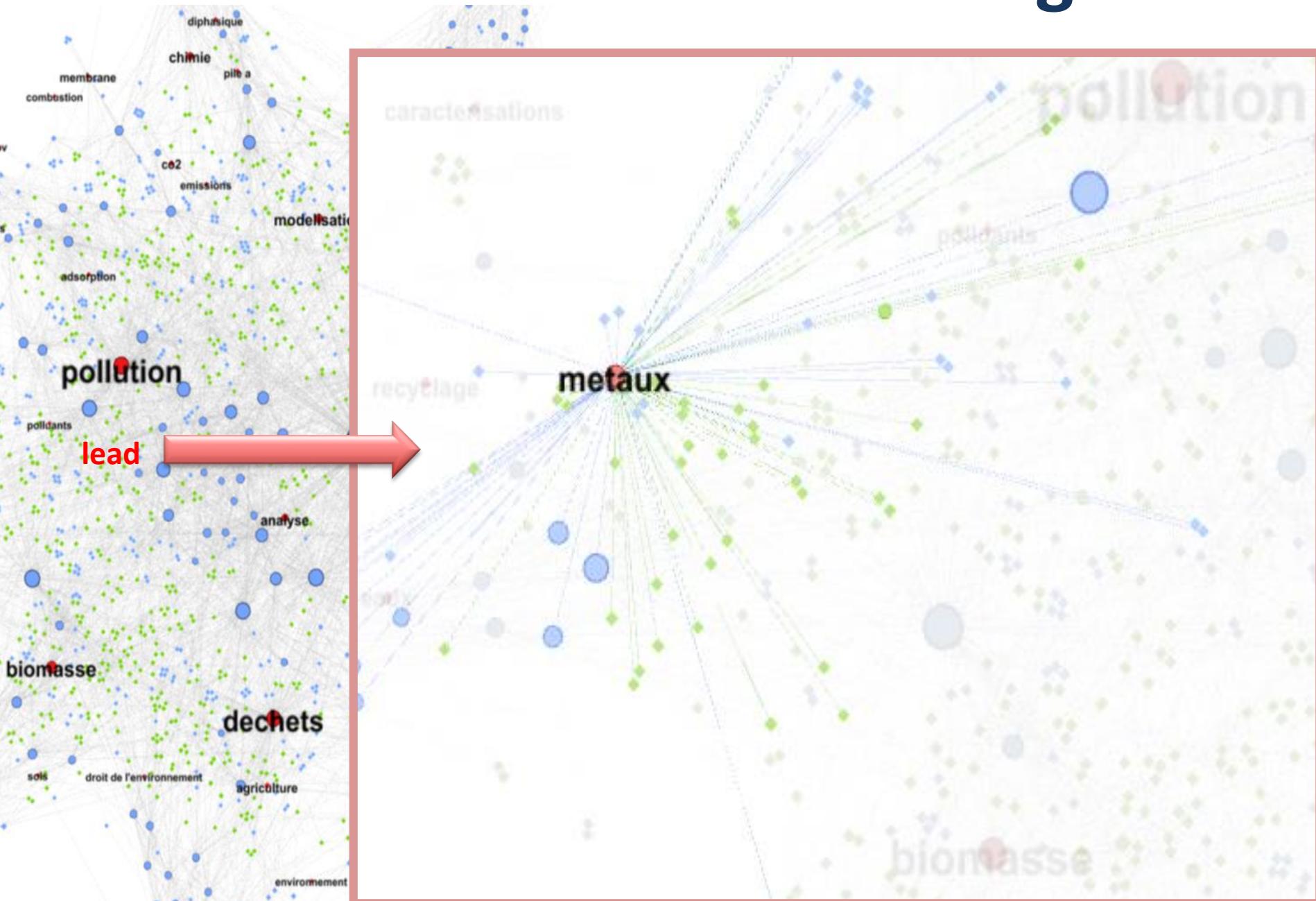


results

1. pollution
2. sustainable development
3. energy
4. chemistry
5. air pollution
6. metals
7. biomass
8. wastes



controlled abstraction and merge



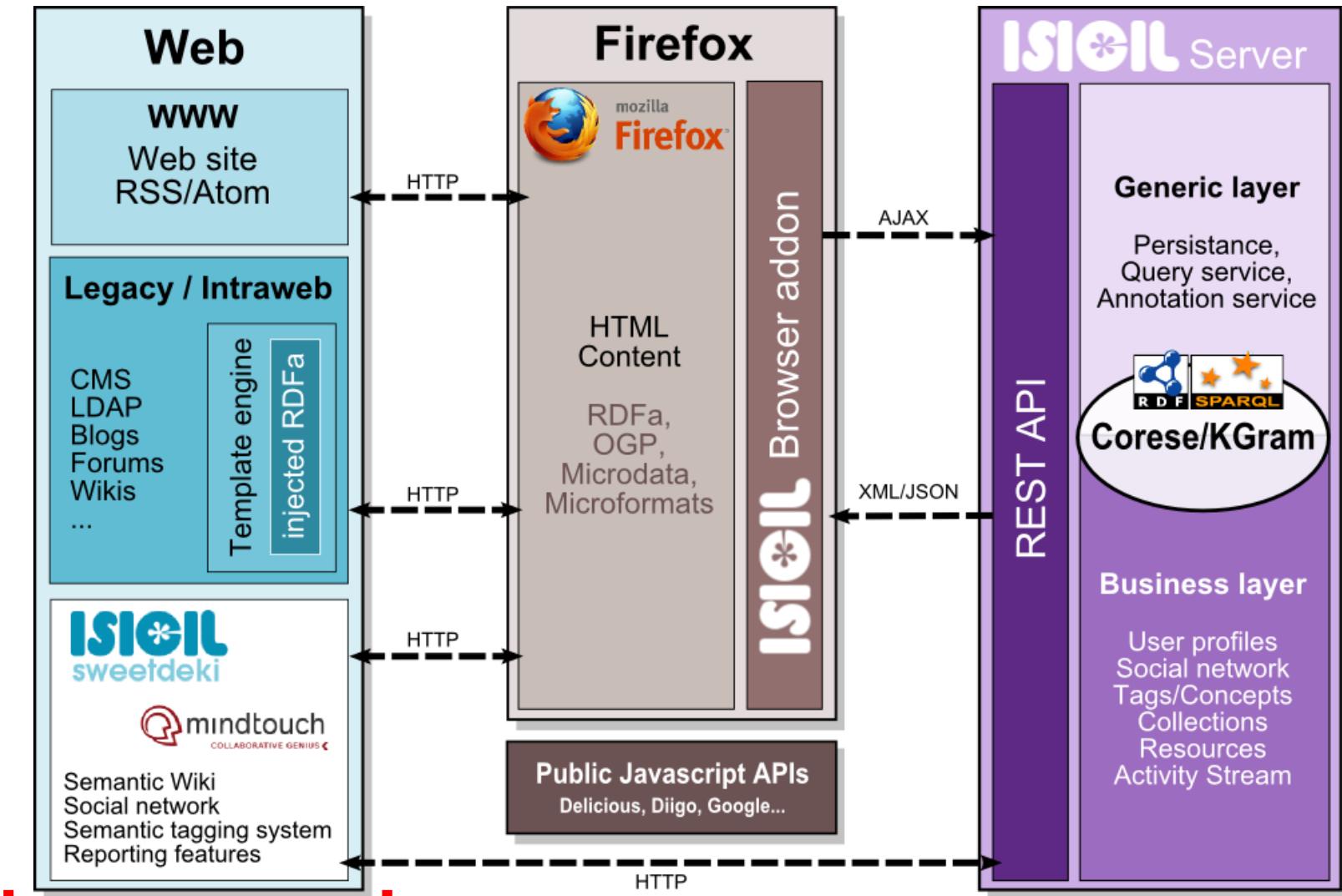


overview of the architecture

PLATFORM AND PROTOTYPES



a web 3.0 solution



open integration and standard in the front-end

Firefox » www2012 » Keynotes speakers - Mozilla Firefox

www2012.org/?page_id=1804

Google

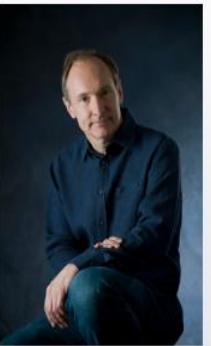
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2012
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Official keynote speakers announcement

Tim Berners-Lee



A graduate of Oxford University, Tim Berners-Lee invented the World Wide Web, an internet-based hypermedia information system while at CERN, the European Particle Physics laboratory in Switzerland. He is best known as the inventor of the first web client and server in 1990. In 1991, he proposed the "Information Management" system which became the World Wide Web. The rules of HTML were refined as Web technology developed.

He is the Director of the World Wide Web Consortium, an international organization founded in 1994 which develops open specifications for the web (specifications, guidelines, software, and tools) to ensure the web remains a open platform with maximum potential. He is a founding Director of the Web Foundation, and in 2009 was appointed by the UN Secretary-General as a Special Advisor on the future of the Web.

photo credit: Tony Scarpetta

[Read more...](#)

Bernard Stiegler



Bernard Stiegler is a director of IRI at the Institut des hautes études en sciences sociales (EHESS). He is a Professorial Fellow at the Centre for Contemporary Cultural Studies at Goldsmith College in London, and a Research Fellow at the Institut National de la Technologie de Compiègne where he teaches philosophy.

Before taking up the post at the Pompidou Center, he was a Research Fellow at the International College of Philosophy, Paris; a Research Fellow at the Institut National de l'Audiovisuel, then Director of the Institut de Recherche et Coordonniation Acoustique/Musique (IRCAM), Paris.

photo credit: Georges Pompidou Center

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SPARQL Box :

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

SPARQL Box :

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

SPARQL Box :

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

Annuler OK

Nicolas DELAFORGE

towards rich webmarks

Firefox ▾

EX L'APP recadrée par le Parlement... +

www.lexpress.fr/actualite/media-people/media/l-afp-recadree-par-le-parlement_10777_★ ▾ C Google

Rejoignez LEXPRESS
Je m'inscris | Je m'identifie

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

L'EXPRESS ACTUALITÉ ÉCONOMIE FINANCE PERSO ENTREPRISE EMPLOI CULTURE STYLES EXPRIMEZ VOS IDÉES ! EXPRESS YOURSELF » En savoir +

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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 LEXPRESS.fr, publié le 01/02/2012 à 15:33

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Webmark it!

ISICIL Webmark Editor

Infos Localize Socialize Synchronize Archive It!

L'AFP recadrée par le Parlement

EX article

★★★★★

http://www.lexpress.fr/actualite/media-people/media/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 #médias #communauté européenne

```
<meta property="og:description" content="Les députés ont voté un texte précisant les missions de l'Agence France Presse. Une mesure imposée par Bruxelles."/>
<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-par-le-parlement_1077740.html"/>
<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"/>
```



FABIEN GANDON

Senior Researcher
Informatics and Computer Science

Leader for the Wimmics team at INRIA
Research Center of Sophia-Antipolis

General co-chair conference Web 2.0

twitter: [@fabien_gandon](#)

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

Card: Dr. Fabien Gandon (Fab or Bafie) is a Senior Researcher at INRIA 2004 rue des Lucioles, Sophia-Antipolis, France

Mail: Fabien.Gandon@inria.fr

Twitter: [@fabien_gandon](#)

Phone: +33492387788

Skype: [fabien_gandon](#)

Fax: +33492387783

card as vCard or Card in RDF

Webmark it!

ISICL

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 Computer Science
Location	INRIA Sophia-Antipolis (France)
Email	Fabien.Gandon@inria.fr



Which kind of relation do you have with this person?

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

OK Annuler



Senior Researcher Informatics and

**Leader for the Wimmics team
Sophia-Antipolis (France)**

General co-chair conference

twitter: [@fabien_gandon](#)

Quote: "He who controls metadata controls the world."

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Mail: Fabien.Gandon@inria.fr

Twitter: [@fabien_gandon](#)

Phone: +33492387788

Skype: fabien_gandon

Fax: +33492387783

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

Informations



Explorateur de profil

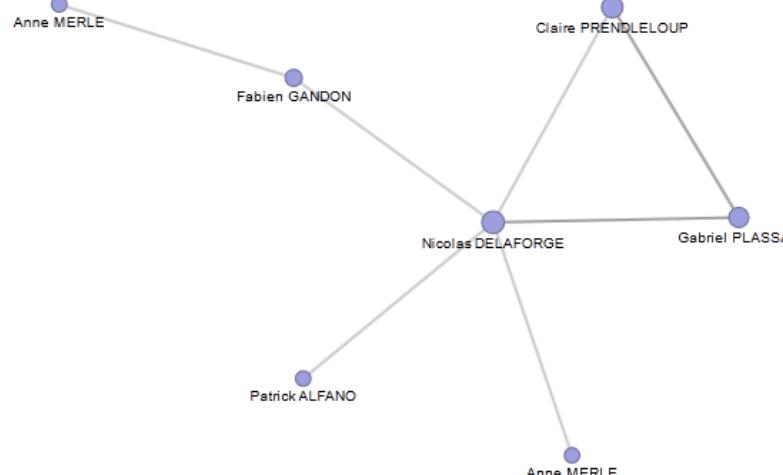


Nom : DELAFORGE
 Prenom : Nicolas
 Téléphone : 0123456789
 Mail : nicolas.delaforge@inria.fr
 Fonction : Observateur
 Site : Sophia

Groupes Mots-Clés Contributions Réseau social Activité

Niveau : tags

reload





Senior Researcher Informatics and

Leader for the Wimmics team
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Mail: Fabien.Gandon@inria.fr

Twitter: [@fabien_gandon](#)

Phone: +33492387788

Skype: [fabien_gandon](#)

Fax: +33492387783

card as vCard or Card in RDF

[vCard](#) [T'sima](#) [Maxime Lefrançois et 3 autres](#)

Informations

ISICIL

Explorateur de profil



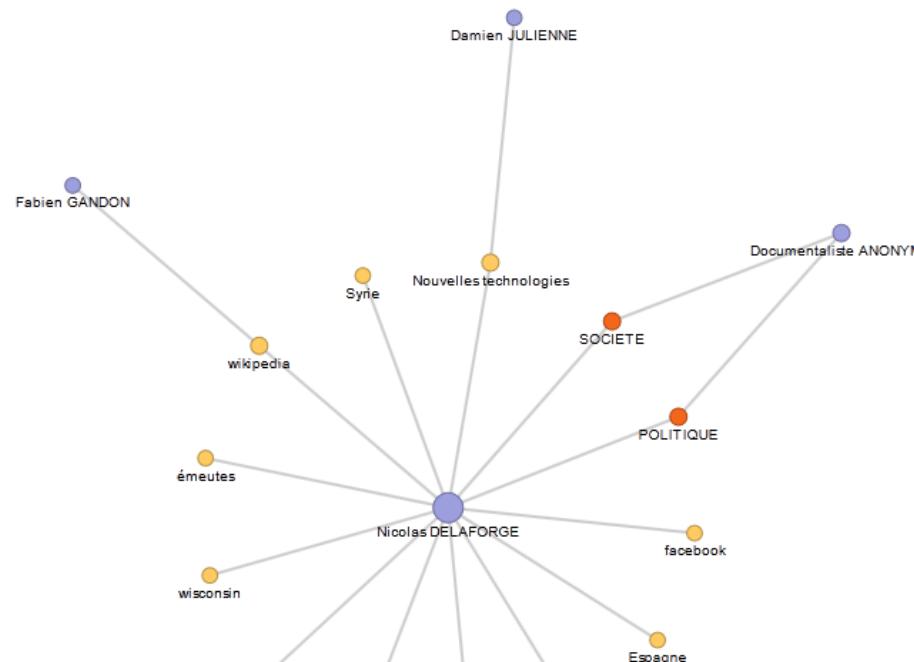
Nom : DELAFORGE
Prenom : Nicolas
Téléphone : 0123456789
Mail : nicolas.delaforge@inria.fr
Fonction : Observateur
Site : Sophia

Groupes Mots-Clés Contributions Réseau social Activité

Niveau : tags

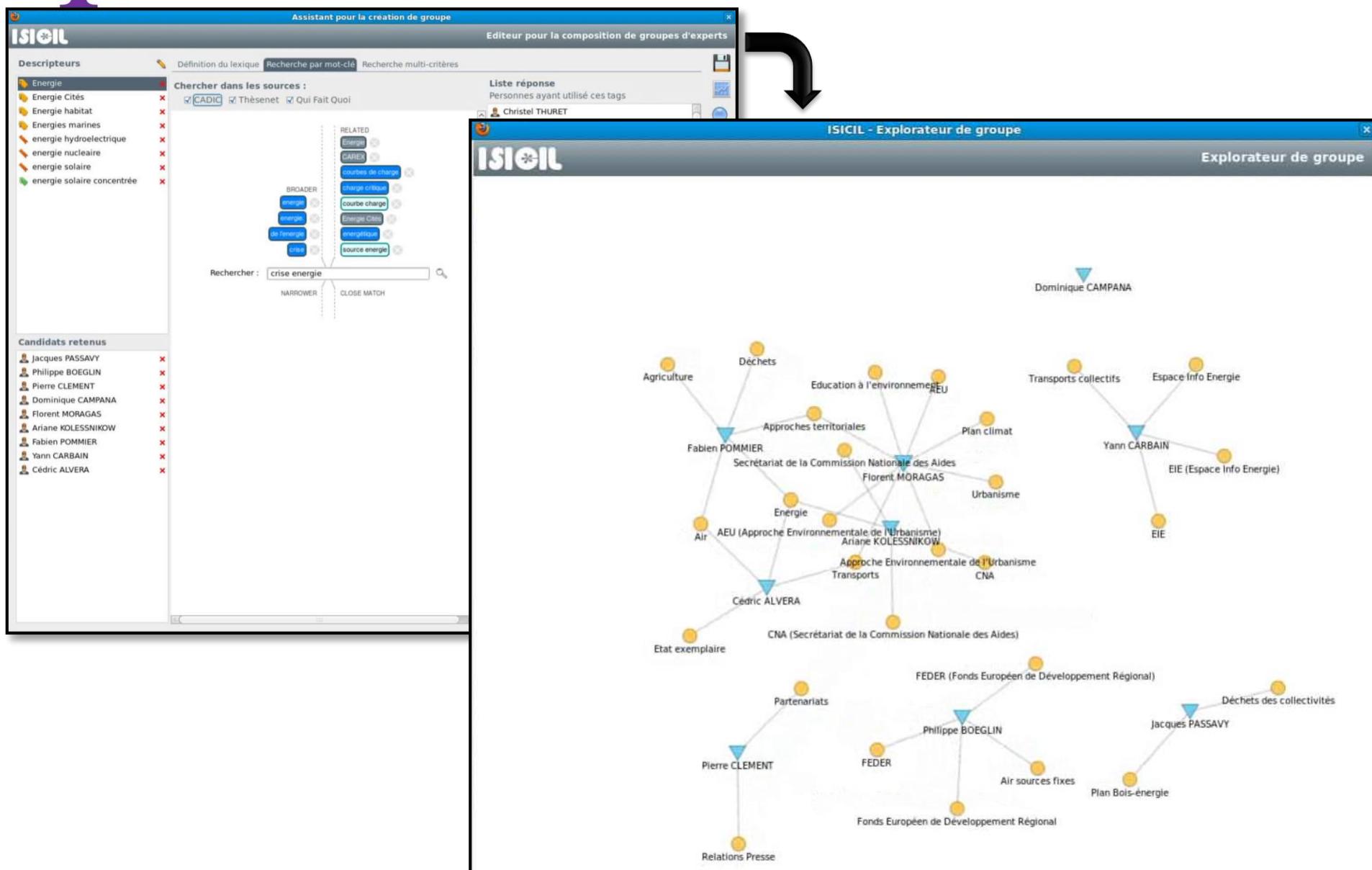
X

reload





navigating in the expert network





activity flow and notification

User:n delaforge - ISICIL sweetdeki

http://sabre.inria.fr/User:n delaforge

Google

ISICIL sweetdeki

Changements récents Flux RSS Plan du site Pages populaires Reports

Recherche Recherche

Main pages

> mes préférences > déconnexion > n delaforge

User:n delaforge

Activity Dashboard Webscamps My Page

n delaforge

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: spreas server

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

Occurrences

sept. 21, 2011

1 Nicolas DELAFORGE C

claire.prendleloup - ISICIL sweetdeki

http://sabre.inria.fr/User:claire.prendleloup

Google

ISICIL sweetdeki

Changements récents Flux RSS Plan du site Pages populaires Reports

Recherche Recherche

Main pages

> mes préférences > déconnexion > claire.prendleloup

User:claire.prendleloup

Activity Dashboard Webscamps My Page

claire.prendleloup

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: spreas server

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

Occurrences

Recent Activity

ISICIL 3 mots ajoutés sept. 21, 2011

[View all activity from claire.prendleloup](#)

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

User:claire.prendleloup >

ISICIL Tags

nouveau tag...

Claire PRENDLELOUP



Semantic Web plugin for Gephi

Gephi 0.7 alpha4 200912041610 - Project 0

File Edit View Tools Window Plugins Help

Overview Data Laboratory Preview

Partition Ranking

Nodes Edges

Degree

Min size: 10 Max size: 40

Range: 1 971

Spline... Apply

Preview Graph

Dragging 16,7

Hierarchy

Filters

Reset

Library

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

Queries Drag filter here

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

Global Nodes Edges Labels

Node Fo... Dialog.bold, 20 Color: Size: 50

Edge Fo... Dialog.bold, 20 Color: Size: 50

Configure...

Size: Scaled

Color: Unique

Hide non-selected

Select Filter

Workspace 0



web-scraping: archiving and integrating

Palestinian state can only be achieved through talks with Israel, as thousands rally across the West

ISICIL

Title: BBC News - Home

URL: <http://www.bbc.co.uk/news/>

Description:

Tags: Enter tag, to find a person or a group start with '@'

Used tags:

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

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

Scrap



Editeur de Webmark

Firefox

Webscrafs : 51,rev 2 - ISICIL sweetdeki

Les plus visités Débuter avec Firefox À la une

ISICIL sweetdeki

Changements récents Flux RSS Plan du site Pages populaires Reports

Recherche Recherche

Main pages

ISICIL sweetdeki Special:Webscrafs

Webscrafs : 51,rev 2

Pour insérer une vue de ce webscrap dans une page d'ISICIL sweetdeki, utilisez l'extension "ISICIL Webscrap" en précisant l'id du scrap (51) et sa révision (2, ou laissez vide pour toujours utiliser la dernière révision).

Autres révisions Révisions : 2

Infos

<http://www.bbc.co.uk/news/>
Webscrapé 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 More

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

In Pictures Also in News Editors' Blog Have Your Say World Radio and TV Special Reports

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
What now for Strauss-Kahn?

Watch

French Socialist rivals face off
What went right and wrong?

http://www.bbc.co.uk/news/world/asia_pacific/



Fresnel lenses to adapt results

File Edit View History Bookmarks Tools Help

Google Traduction X la visualisation est un pro... X Java Architecture for XML ... X http://www...iw3A6bTL_Mg X Fresnel Page X +

localhost:8080/sprean-search-demo/search

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

ISICIL

Search Go

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.



create dynamic reports in the wiki

Solar panels - ISICIL sweetdeki - Mozilla Firefox

Firefox Solar panels - ISICIL sweetdeki localhost/index.php?title=Suivi_d'activités_d'un_utilisateur/Solar_panels http://vigilante.inria.fr/... INRIAGForge: Bienve... ISICIL • Information ... Demos - JavaScript I...

localhost/index.php?title=Suivi_d'activités_d'un_utilisateur/Solar_panels

ISICIL sweetdeki

Changements récents Flux RSS Plan du site Pages populaires Reports

mes préférences déconnexion

Insert Extension

Recherche Main pages

Home Suivi d'activités d'u... Solar panels

Gravatar

ISICIL Dashboard 2

isicildashboard.TagAndTagsNarrowerTre

Chart showing the use of one tag and this tags narrower during the last ten weeks

tag*

photovoltaïque

Tag

* Re

ISICIL sweetdeki

Changements récents Flux RSS Plan du site Pages populaires Reports

mes préférences déconnexion patrick.altano

Solar panels

ADEME activity on solar panels

Chart showing the use of one or many tags during the last ten weeks

Source: Sprean server

2

Taggings (occurrences)

1

0

tag: photovoltaïque tag: solaire+photovoltaïque

U-shaped arrow pointing from the extension interface to the generated chart.

Tag	Occurrences
tag: photovoltaïque	0
tag: solaire+photovoltaïque	0
tag: photovoltaïque	1

1993



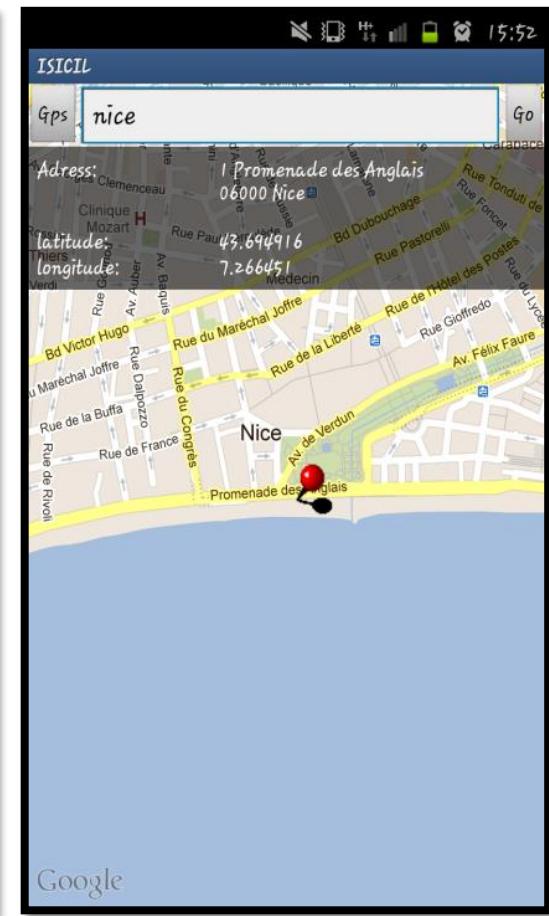
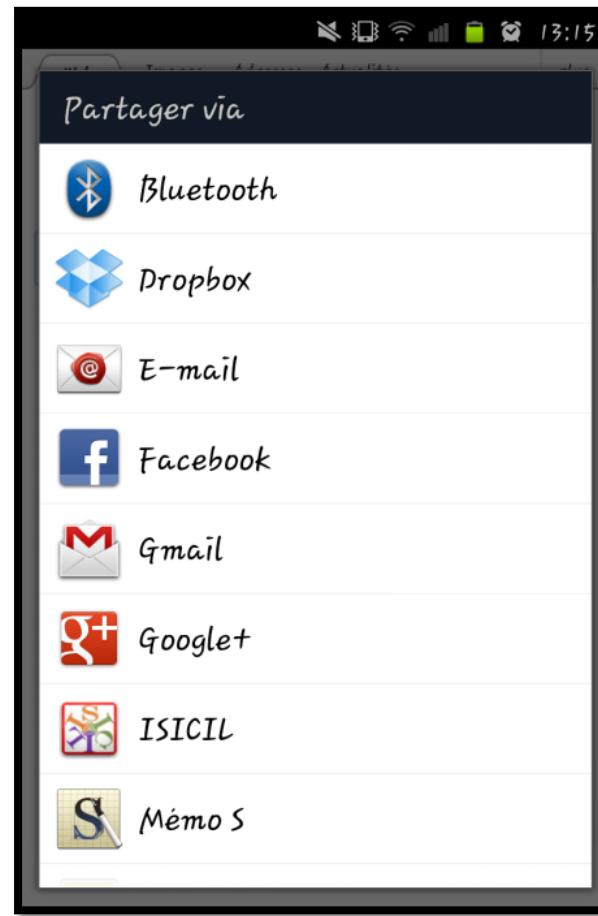
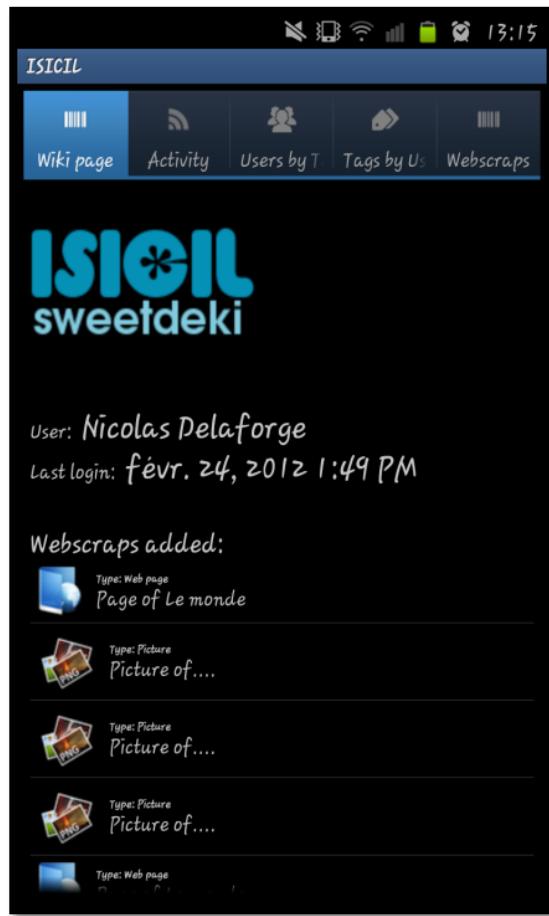
all in one



2013

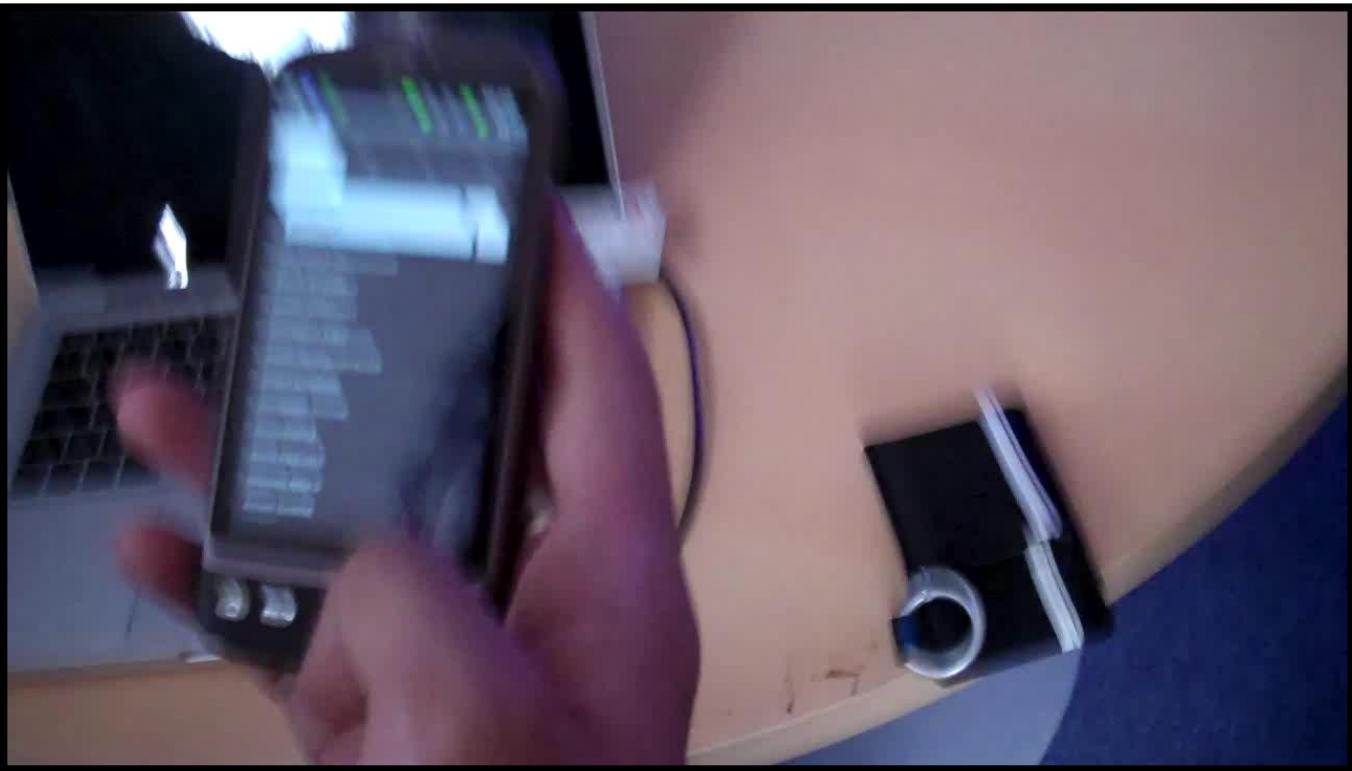


integrating with new web platforms





going mobile





to know more

- ➔ deliverables and publications

<http://isicil.inria.fr>

- ➔ open source code on INRIA forge

<https://gforge.inria.fr/projects/isicil/>

- ➔ models

<http://ns.inria.fr/>

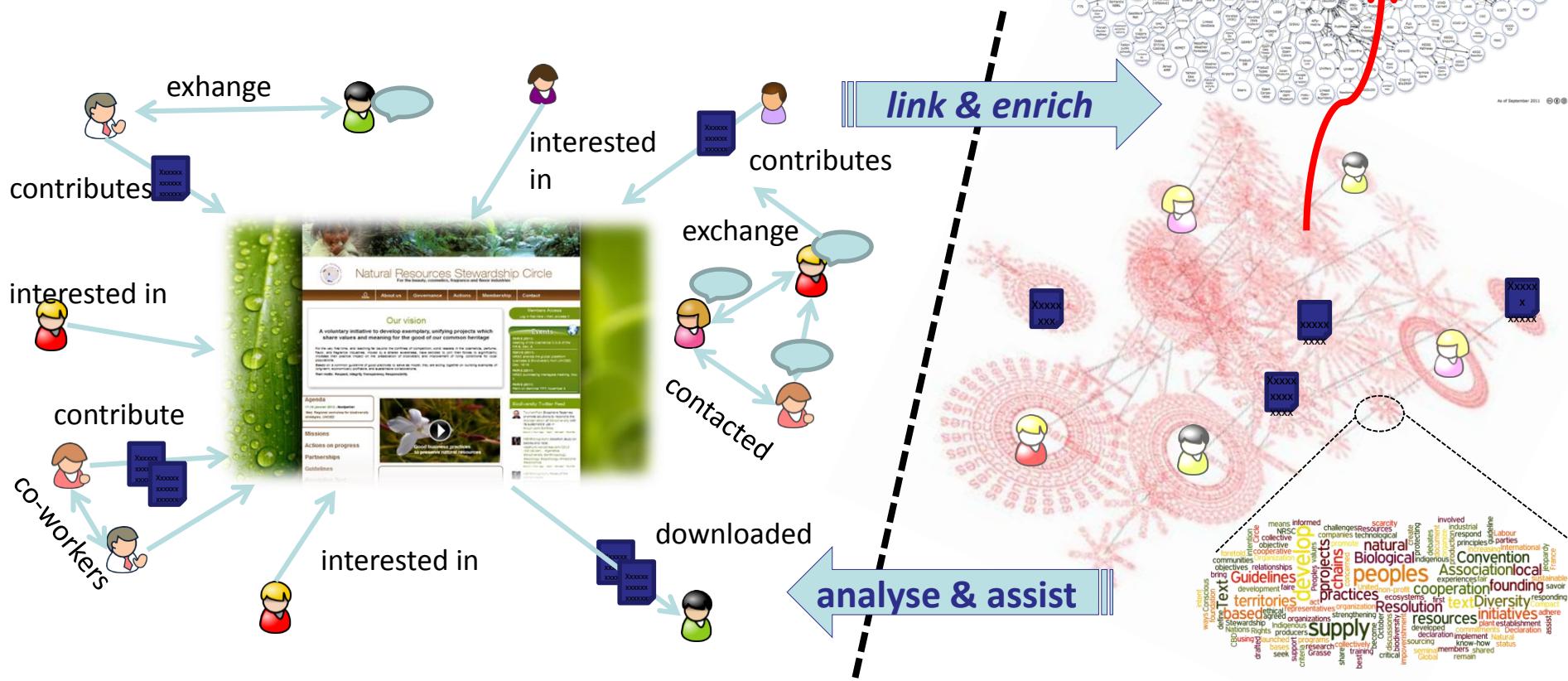


gave birth to ...



« Unveil the semantic imprint from within your Community »

- cooperative society of social semantic web specialists
 - industrialization and maintenance of research results
 - developing webworks as linked semantic traces





*doggy-bag
of the talk*

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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

Hardcover

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\$13.67

\$0.55

Paperback

\$13.59

\$10.01

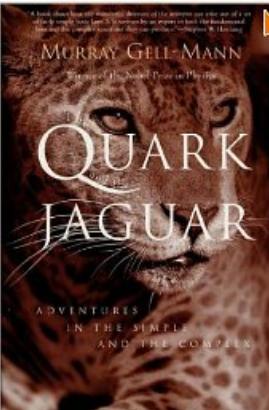
\$7.84

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

Murray Gell-Mann ✓ (Author)

A book cover featuring a close-up of a jaguar's face. The title "QUARK JAGUAR" is prominently displayed in large, stylized letters across the center. Below the title, it says "ADVENTURES IN THE SIMPLE AND THE COMPLEX".
★ ★ ★ ★ ★ (30 customer reviews)

Price: \$13.59

In Stock.Ships from and sold by **Amazon.com**.**Formats**

Amazon Price New from Used from

 Hardcover

--

\$13.67

\$0.55

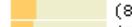
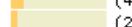
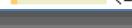
 Paperback

\$13.59

\$10.01

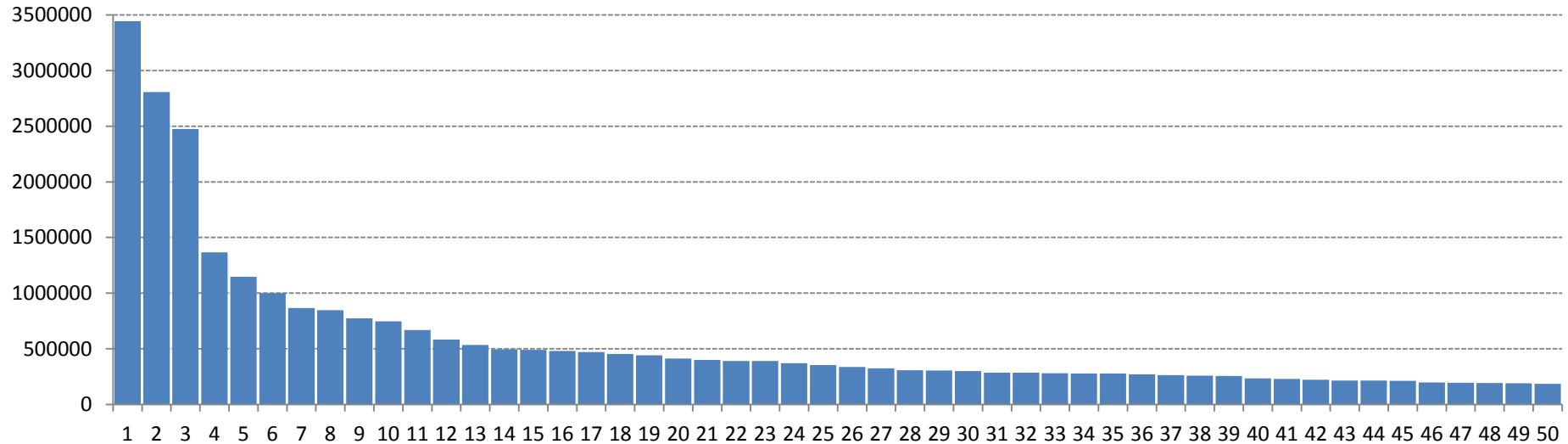
\$7.84

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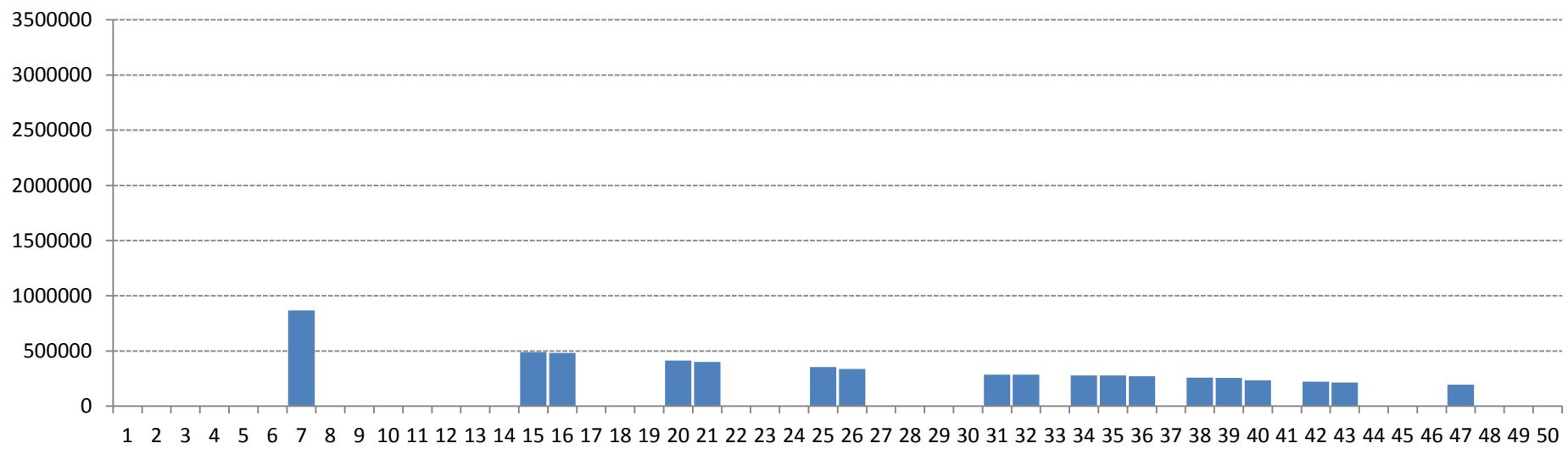
<u>5 star:</u>		(9)
<u>4 star:</u>		(8)
<u>3 star:</u>		(7)
<u>2 star:</u>		(4)
<u>1 star:</u>		(2)

Average Customer Review ★ ★ ★ ★ ★ (30 customer reviews)**web 1, 2, 3**

wikipedia editions by users...

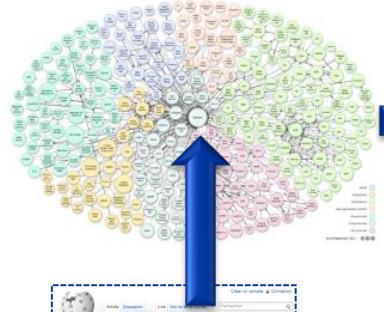


without bots...

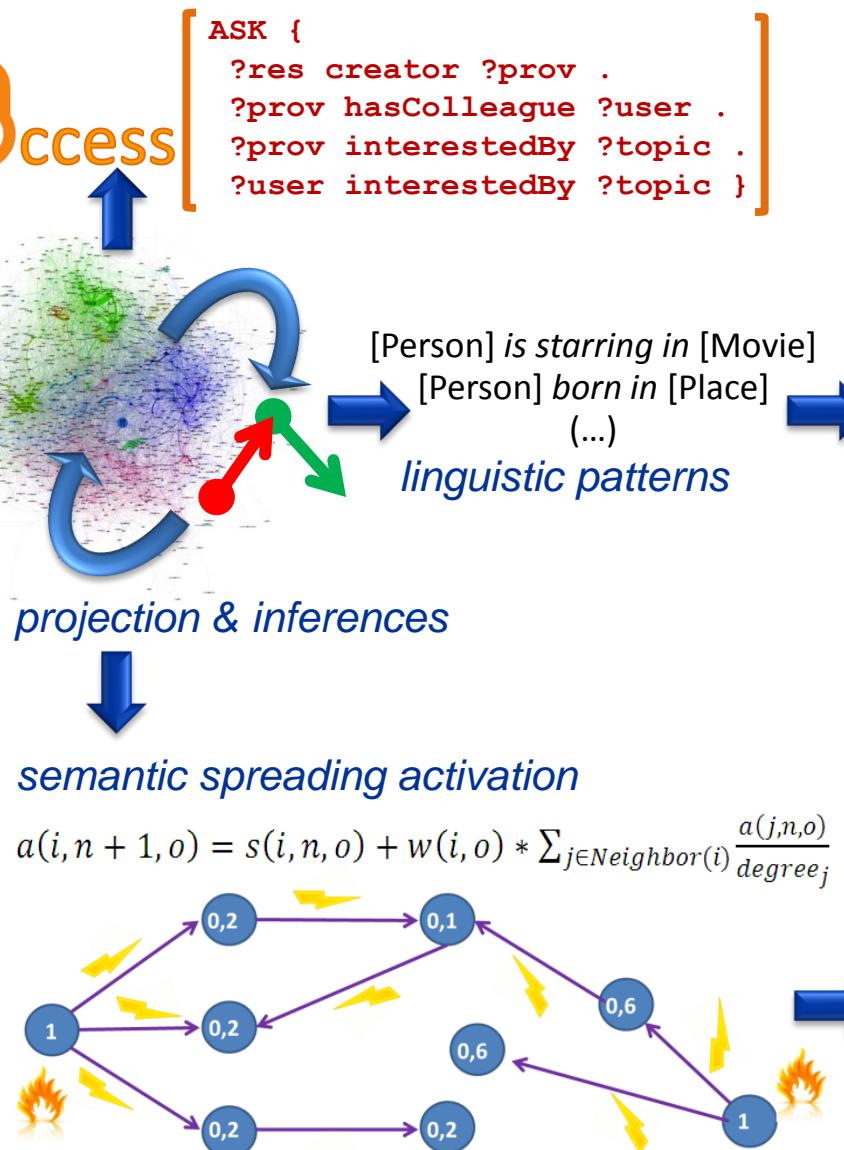


some other contributions

publication & links



mappings



natural language Q&A

Which river does the Brooklyn Bridge cross?

You asked: Which river does the Brooklyn Bridge cross?

Pattern matching:

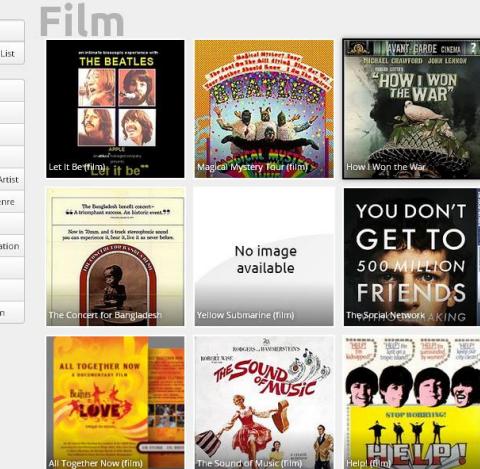
typed question: [River] does [Bridge] cross ?
 had a best match with pattern: crosses [D:Bridge] bridge cross river
 [R:River]
 with score 10.136633333333

The query generated is:

```
select distinct *
where {
<http://dbpedia.org/resource/Brooklyn_Bridge> <http://dbpedia.org/ontology/crosses> ?v .
?v rdf:type <http://dbpedia.org/ontology/River> .
OPTIONAL {?v <http://www.w3.org/2000/01/rdf-schema#label> ?l
filter (lang(?l)="en")}
} limit 20
```

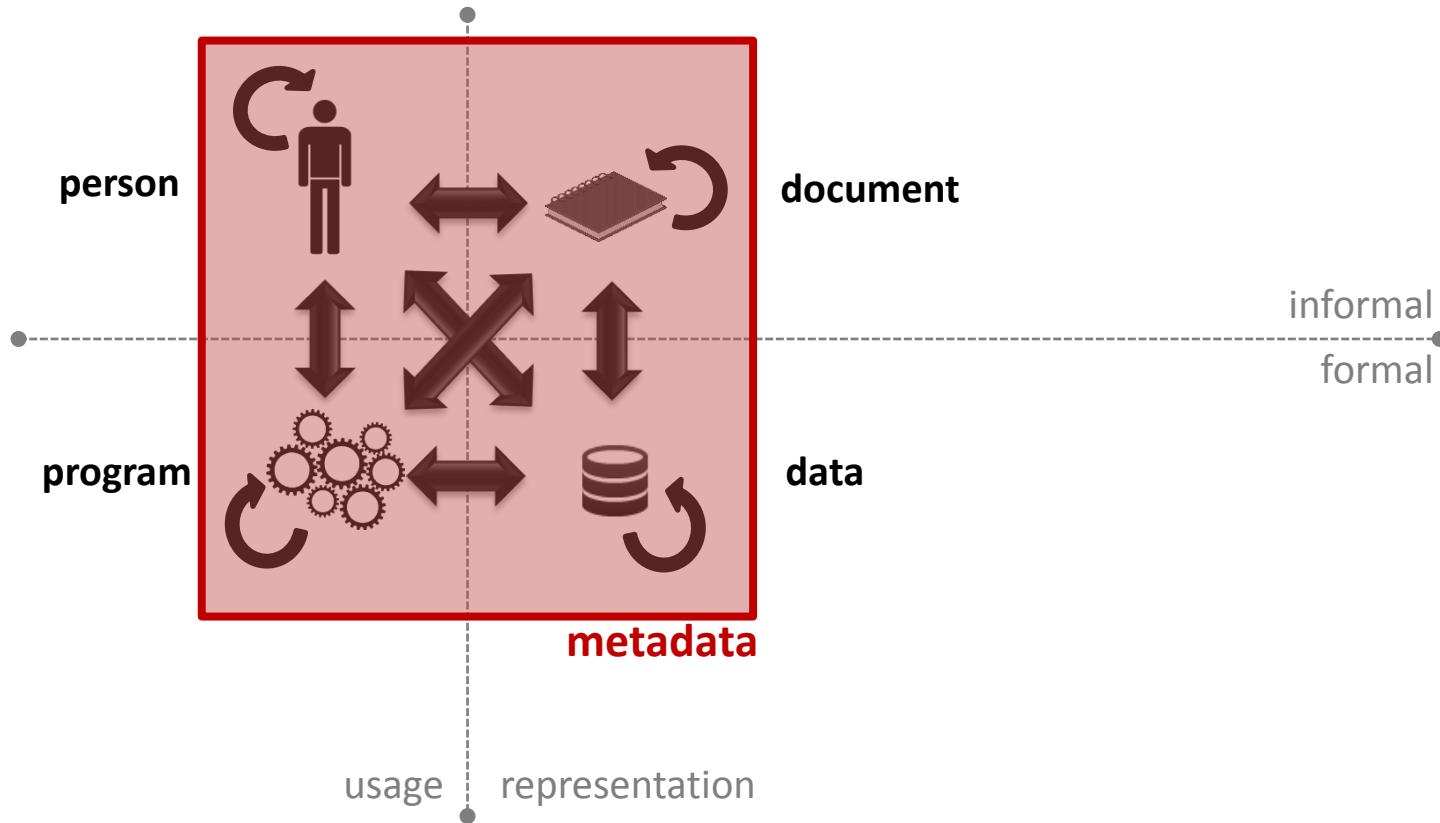
#	result
1	East River

semirecouina.fr/hub/search/The_Beatles



exploratory search

one web...



tomorrow, he who controls the metadata, controls the web.

