

ISWC2010 Lightning Talks: Schedule

1	Andreas Harth	An RDF Storage Scheme on Key-Value Stores for Linked Data Publishing
2	jie Bao	Semantic Web Dogfooding at ISWC 2010
3	Thomas Steiner	Semantic Web Browser Extensions
4	pascal Hitzler	The Semantic Data Web Layer Cake
5	Marian Doerk	Information Visualization for Linked Data
6	mc schraefel	500bucks to the person who creates a persona
7	Mike Bennet	Towards a Consensual Semantic Framework
8	Alexander Garcia	Beyond the RDF
9	Marko Grobelnik	Extracting triples from text and linking to LOD with Enrycher
10	Oktie Hassanzadeh	BibBase
11	Vadym Kramar	universAAL Open Platform
12	Steve Harris	Five (boring) reasons why semantic web technology is good for companies
13	Denny Vrandecic	Linked Open Data Browser Switch
14	Jeff Pan	TROWL Tractable OWL 2 reasoning infrastructure
15	Masahiro Hamasaki	Social Infobox
16	Stefan Schlobach	Dealing with the Messiness of the Web of Data
17	Sandro Hawke	Parallel Twin Properties
18	Avi Bernstein	Querying the messy Semantic Web
19	Javier Fernandez	2001 Spanish Census to RDF
20	François Scharffe	Datalift
21	Philippe Cudre-Mauri	eXascale Infolab

<http://code.google.com/p/cumulusrdf>

Semantic Web Dogfooding at ISWC 2010

The ISWC 2010 Metadata Project

Jie Bao, baojie@cs.rpi.edu
Rensselaer Polytechnic Institute

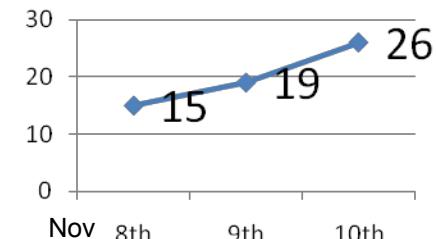
Conference Website & Apps



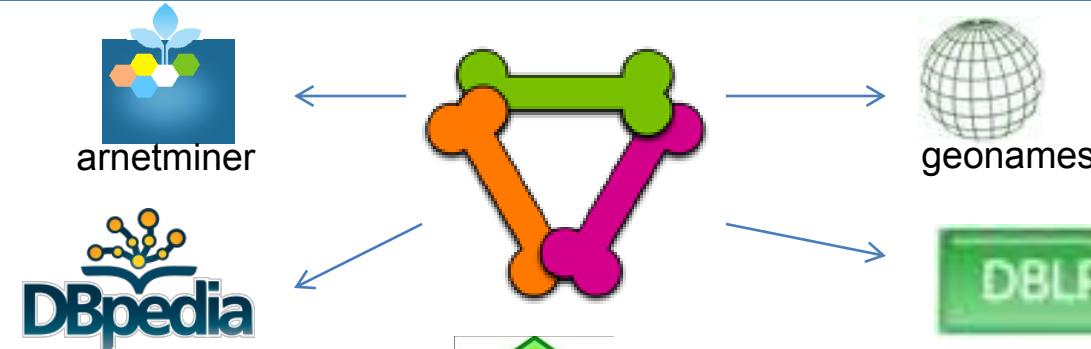
Visualization



Supported data browsers



Linking
ISWC2010
Data
(0.1M Triples)



Diverse
Data
Sources



CC Licenses



Shanghai today.

Recent Pictures | What is Ookaboo?

Image Sizes: Small Medium Large Original

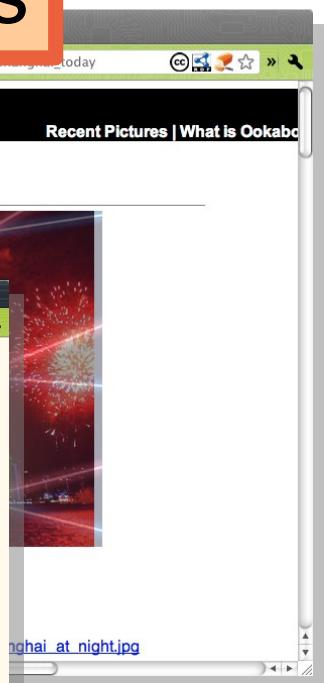
RDFa Triples

6 Triples found:

```
<http://www.ivan-herman.net/foaf#me> rdf:syntax-ns#type <http://www.w3.org/1999/02/22-foaf:Person>
<http://www.ivan-herman.net/foaf#me> foaf:name "Ivan Herman"
<http://www.ivan-herman.net/foaf#me> foaf:workInfoHomepage <http://www.w3.org>
<http://www.ivan-herman.net/foaf#me> foaf:workInfoHomepage <http://www.cwi.nl>
<http://www.ivan-herman.net/foaf#me> foaf:currentProject <http://www.w3.org/2001/sw>
<http://www.ivan-herman.net/foaf#me>
```

GR Prices

The screenshot shows a product page for a 'Remote Control 1:24-scale Full Function Yellow/ Blue Big Foot Monster Truck' on overstock.com. The product image is a blue and yellow monster truck. The price is listed as 'Today: EUR 31.49'. Below the product, there is a link to find the same item on Amazon.



RDFa API



Semantic Web Browser Extensions

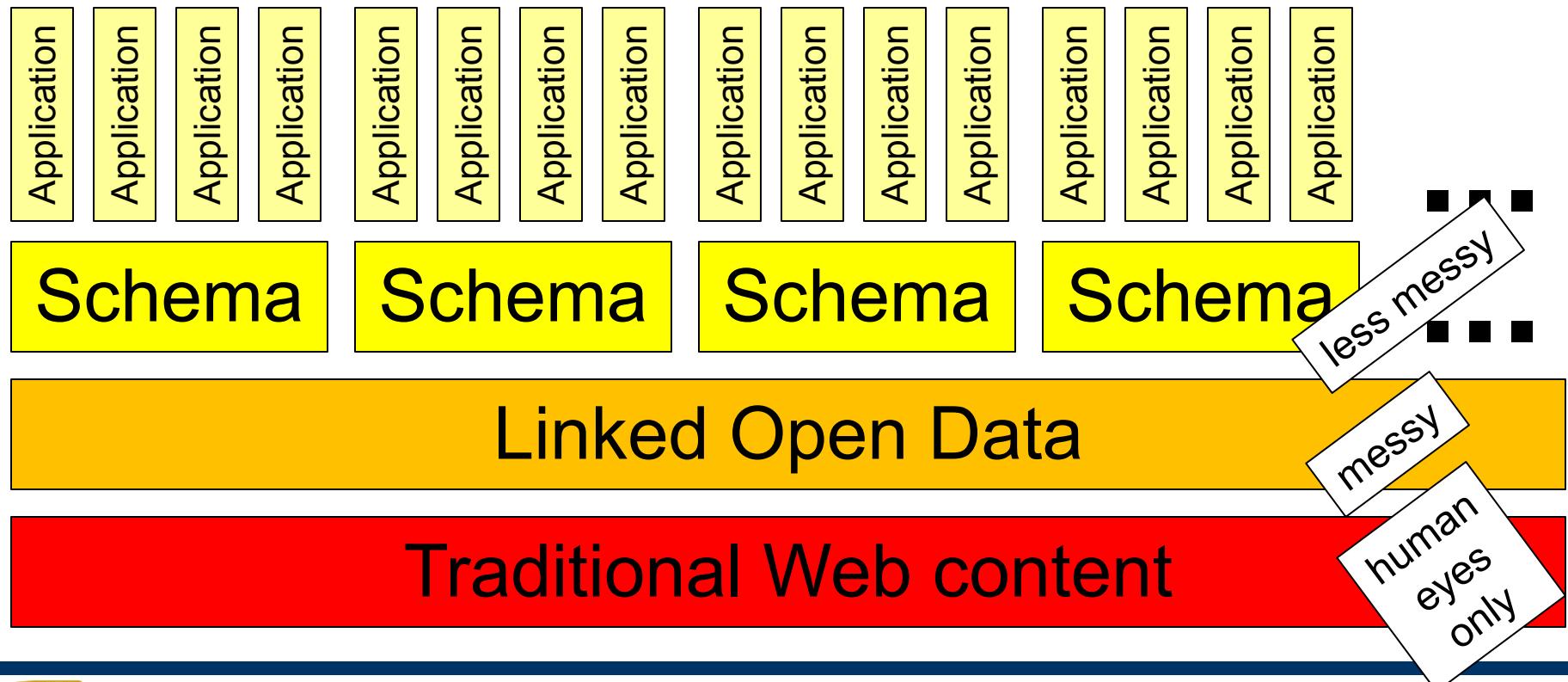


```
var items = document.getItemsByProperty('gr:name');
items.forEach(function(x, i) {
  console.log('Item ' + i + ': ' + x.get('gr:name'));
});
```

The Semantic Data Web Layer Cake

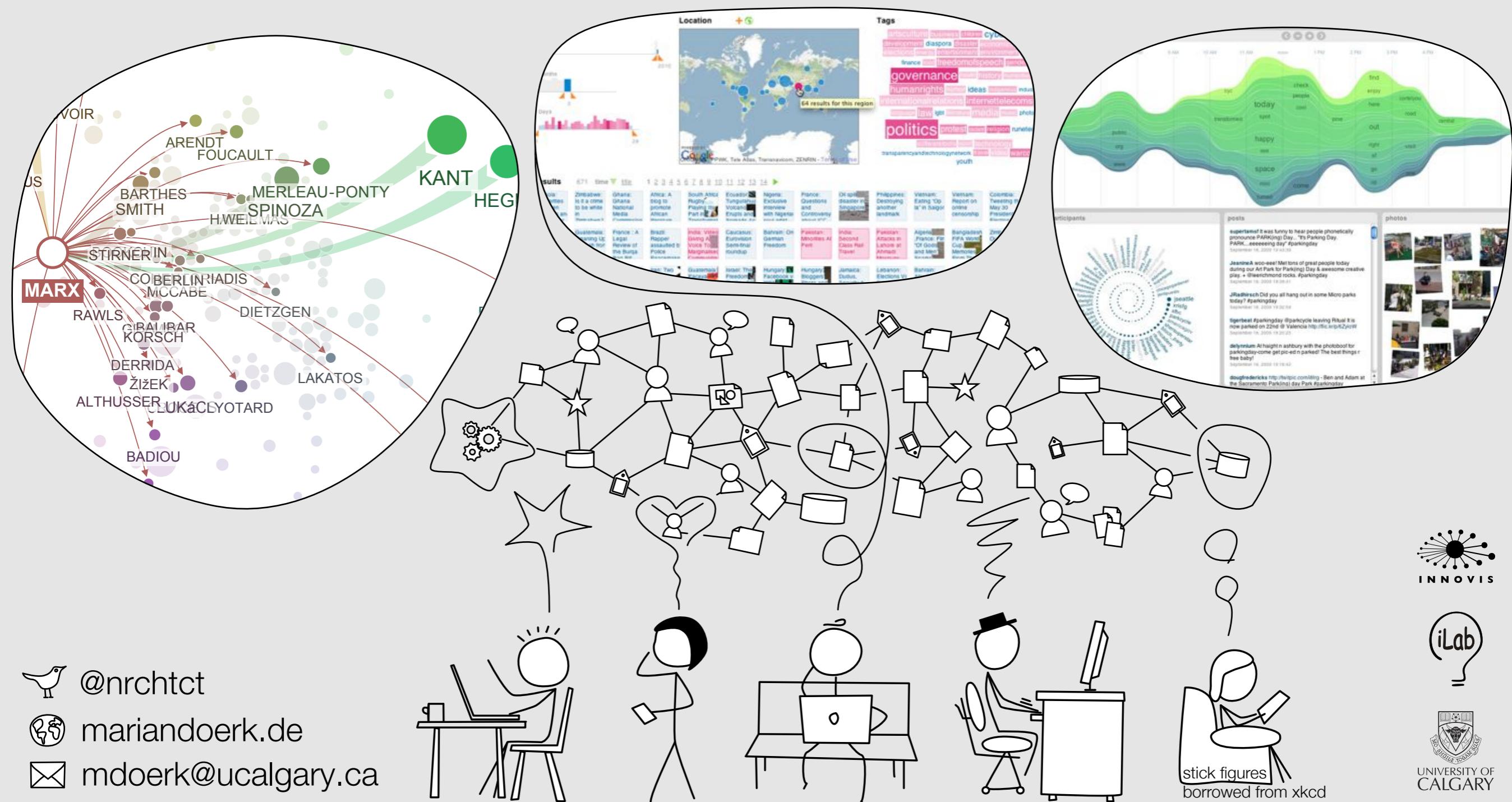
To leverage LoD, we require **schema knowledge**

- **application-type driven** (reusable for same kind of application)
- **less messy than LoD** (as required by application)
- **overarching several LoD datasets** (as required by application)



Information Visualization for Linked Data

- Semantic Web about machines, reasoning, and question answering
- Time to put human into the loop: overviews, patterns, and relationships
- Make Linked Data more comprehensible, explorable, and appealing



500 euro Challenge: create a rich Citizen persona, **(inc. a specific scenario)**

Person with the most external uses
of theirsemanticweb.org published
persona (with scenario)
by a group other than theirs in an
ISWC 2011 paper

where use is:

using persona to validate a problem:
would this work for X?
wins 500 Euros (and maybe more)

What problem are we
solving **for whom?**

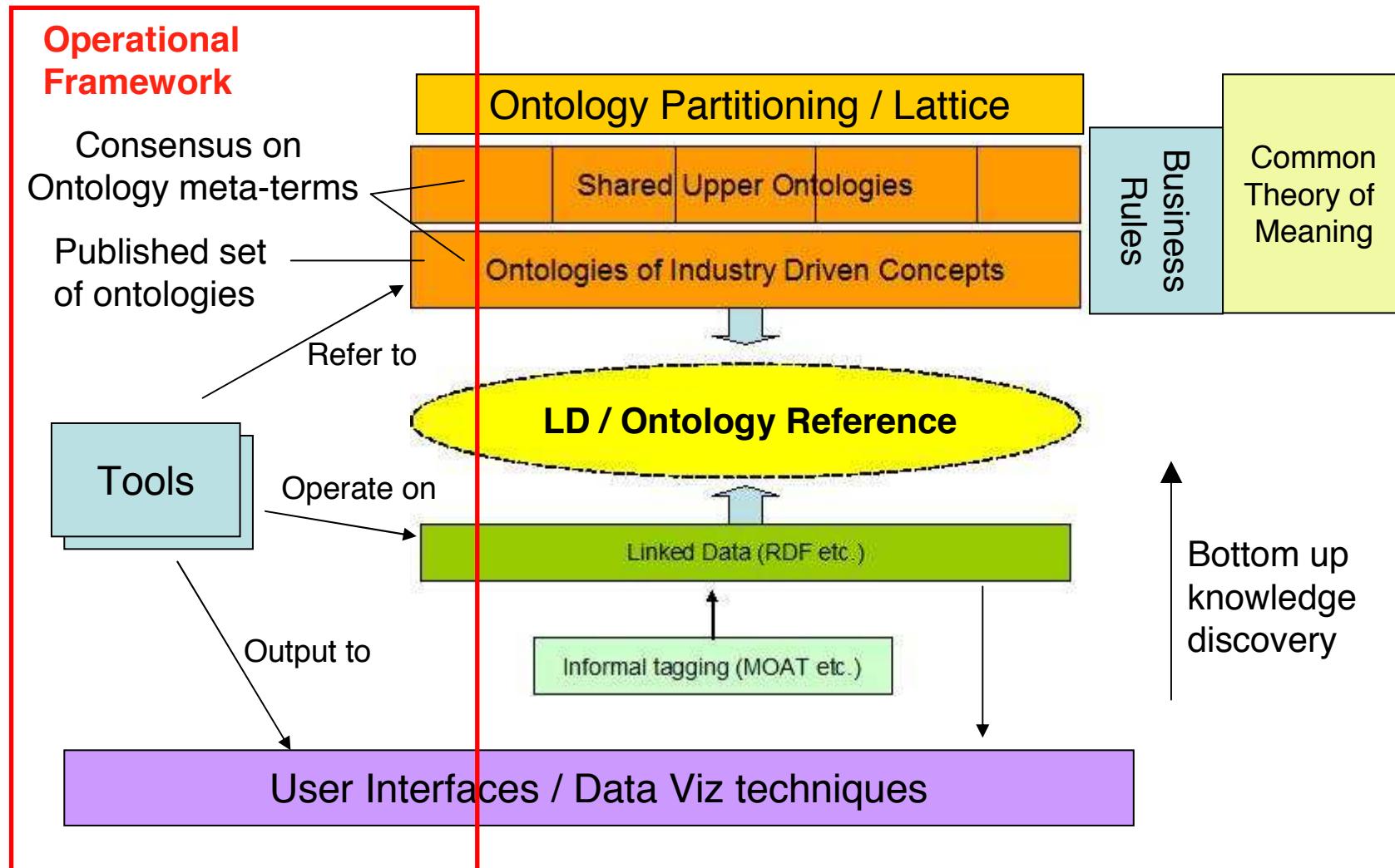


Proof against persona,
truth against scenario?

mc - ecs - usouthampton



Semantic Technology Framework



Annotation Module

revised: 17- 9- 2003
accepted: 17- 9- 2003

Whatizit EBIMED

Glutathione S-transferases have poorly understood roles in plant responses to environmental stress. A polyethylene glycol (PEG)-induced tau class GST was identified in rice roots by protein microsequencing PEG and the heavy metals Cd (100 μM), Zn (300 μM), Co and Ni rapidly and markedly induced *osgstu4* and *osgstu3* in rice seedling roots. *Osgstu4* and *osgstu3* were also induced in roots by hypoxia stress but not by cold nor heat shock. Salt stress and abscisic acid (ABA) rapidly induced *osgstu3* in rice roots, whereas *osgstu4* exhibited a late salt stress and ABA response. Salicylic acid, jasmonic acid and the auxin α-naphthalene acetic acid and *osgstu3* were rapidly induced in rice roots by the strong oxidant hydrogen peroxide. *Osgstu4* and *osgstu3* are involved in their stress response regulations.

Manual annotation

Contextual Reading Module

Paragraphs: 3 | 4 | 5 | 33 | Tables and figures:

Plant *gst* gene families are large and highly diverse: 48 members in *Arabidopsis*, nology and gene previously type I, II and III-specific class 20, and 28 members

graphs: 3 | 4 | 5 | 33 | Tables and figures:

Link Data

DataBase: Uniprot - species

Annotation: helix

LinkData (by http://dom.uni-koblenz.de:8080/jena/2)

Lena: uri=http://bio2rdf.org/taxonomy:6534

RDF (by Bio2RDF): http://bio2rdf.org/taxonomy:6534

2940 protein (2) 3A (2) A tauchi (1)

APLAHAWOR (1) ASC (1) ATP-binding (1) Agloss

(1) Aegilops tauschii (1) Alopecurus (1) Alopecurus

moscoides (1) Arabidopsis (6) Arg (1) Arabid (1)

Atel4 (1) RDX (1) Chromosoma (1) FGR (DARK) (1)

GST (3) Gu (1) Gmgt (1) Japonica (4) U (1)

Link Open Data Module

cytoplasm (3) developments (1)

extracellular (15)

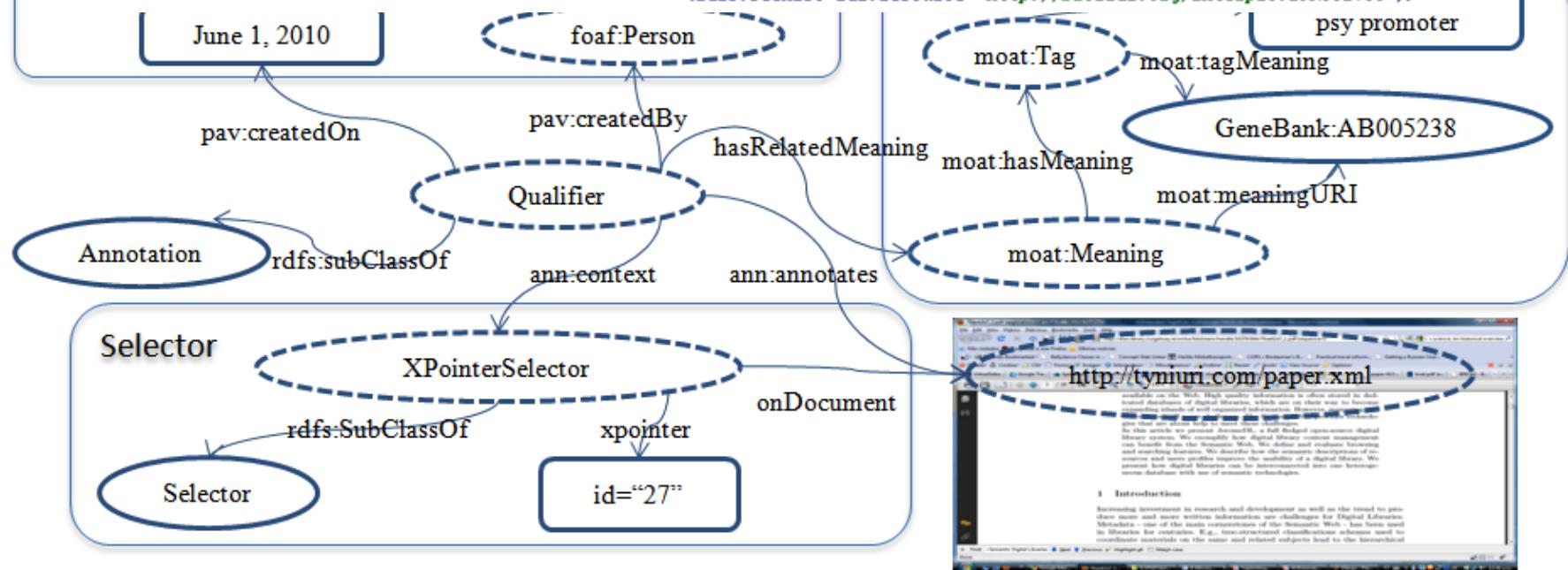
transport (11) transduction (2) translation (1) transmembr

Download RDF:

http://localhost:8080:8080/LDProject/temp/1388_whatizitEBIMed

```

<uniprot:cla> RDF export <keywords:325"/>
<uniprot:encodesBy rur:resource="http://bio2rdf.org/uniprot:P56515_3"/>
<rdfs:seeAlso rdf:resource="http://bio2rdf.org/hssp:P02699"/>
<rdfs:seeAlso rdf:resource="http://bio2rdf.org/interpro:IPR000276"/>
<uniprot:recommendedName rdf:resource="http://bio2rdf.org/uniprot:P56515_2"/>
<bio2rdf:linkedToFrom rdf:resource="http://bio2rdf.org/uniprot:P56515_47"/>
<uniprot:classifiedWith rdf:resource="http://bio2rdf.org/keywords:681"/>
<rdfs:seeAlso rdf:resource="http://bio2rdf.org/prosite:PS50262"/>
<rdfs:seeAlso rdf:resource="http://bio2rdf.org/interpro:IPR001760"/>
```



Extracting triples from text and linking to LOD (DBpedia, OpenCyc, Yago) with Enrycher (<http://enrycher.ijs.si/>)

Tadej Stajner
Delia Rusu
Blaz Fortuna
Marko Grobelnik
Jozef Stefan Institute
Ljubljana, Slovenia



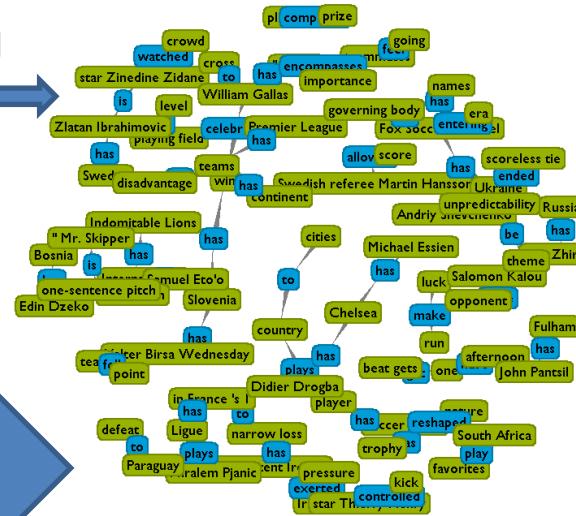
Plain text

Slovenia's dramatic win over Russia Wednesday, and to a lesser extent Ireland's narrow loss to France, capped off a grueling two-year qualifying period that saw some of the smallest countries in the world kick some of soccer's biggest names in the teeth. After a century of near domination from the likes of Brazil, Italy and Germany, international football is entering the era of the Cinderella. It may not happen this year given the increasing flow of talent, training and infrastructure across borders, it's almost certain that a small upstart nation by the name of Iceland will make a legitimate run at the tournament.

Russia's Yuri Zhirkov, right, fights for the ball with Slovenia's Valter Birsa Wednesday.

Text Enrichment

Extracted
graph of triples
from text



entities

- Brazil
 - Italy
 - Germany
 - Cinderella
 - Paris
 - John O'Shea
 - Manchester
 - Robbie Keane
 - Shay Given
 - Greece
 - Portugal
 - Bosnia-Herzegovina
 - Cristiano Ronaldo
 - Uruguay

Keywords

Sports, Soccer, CONCACAF, Competitions, United States, Sports and Hobbies, Kids and Teens, World Cup, Women,

categories

- [Top/Kids_and_Teens](#)
[/Sports_and_Hobbies](#)
[/Sports/Soccer](#)
 - [Top/Sports/Soccer](#)
[/Competitions](#)
 - [Top/Sports/Soccer](#)
[/Competitions/World_Cup](#)
 - [Top/Sports/Soccer](#)
[/CONCACAF](#)

Diego Maradona Semantics:

owl:sameAs: http://dbpedia.org/resource/Diego_Maradona

owl:sameAs: <http://sw.opencyc.org/concept/Mx4rvofERZwpEbGdrcN5Y29ycA>

rdf:type: <http://dbpedia.org/class/yago/ArgentinalInternationalFootballers>

rdf:type: <http://dbpedia.org/class/yago/ArgentineExpatriatesInItaly>

rdf:type: <http://dbpedia.org/class/yago/ArgentineFootballMan>

rdf:type: <http://dbpedia.org/class/yago/ArgentineFootballers>

Robbie Keane Semantics

owl:sameAs: http://dbpedia.org/resource/Robbie_Keane

rdf:type: <http://dbpedia.org/class/yago/CityF.C.Players>

rdf:type: <http://dbpedia.org/class/yago/ExpatriateFootballPlayersInItaly>

rdf:type: <http://dbpedia.org/class/yago/F.C.InternazionaleMilanoPlayers>

“Enrycher” is available as
as a web-service generating
Semantic Graph, LOD links,
Entities, Keywords, Categories,
Text Summarization

<http://bibbase.org>

- Publish high-quality Linked Data about your publications *from within your homepage*
- In just *a few minutes*:
 - You will have a nice publication page on your own website
 - Group by year, type, keyword, etc.
 - Provide **RSS feeds** for your publications
 - Keep track of page visits and paper downloads
 - Your publications will be on the **Web of Data**
 - Get **RDF triples** describing (part of) your publications
 - Query the data using **SPARQL**
 - Get **links to other existing bibliographic data sources**
 - Such as DBLP, Semantic Web Dog Food, ACM and CiteSeer
- Help us build the largest bibliographic data source controlled and maintained **by the authors**, not third parties
 - Will use crowd-sourcing to validate discovered duplicates and links

Presentation by: Oktie Hassanzadeh - oktie@cs.toronto.edu



universAAL open platform

- Semantic Web
- Artificial Intelligence
- Ubiquitous/Pervasive Computing
- Cloud Computing
- Ambient Intelligence → Ambient Assisted Living
- Web is (going to be) everywhere.
How much different are problems those sciences are trying to solve?
- Platforms, frameworks, platforms again... How many more are needed?

Something has already started:
universAAL



See: www.universaal.org
www.aaloa.org

Also in Finland: **universAAL_FI**, contact Vadym Kramar @ OAMK.fi



Five (boring) reasons why SW technology is good for companies

Strong Standards	Interoperability comparatively good Less vendor lock-in
SPARQL Protocol	HTTP based Fits well in SoA
Schemaless Data	MI / BI Flexibility
Scalability	Billions of triples with open source software, on basic hardware
I18N	UTF-8 Language tags

LOD Browser Switch

Examples:

http://dbpedia.org/resource/Lady_Gaga
<http://data.nytimes.com/N12930380387917339601>
<http://rdf.firebaseio.com/ns/guid.9202a8c04000641f8000000000003b0aa>
<http://xmlins.com/foaf/0.1/knows>

The Tabulator



VisiNav



marbles



Zitgist



OPENLINK SOFTWARE
Data Explorer

```
<rdf:RDF>
<!-- Ontology head --
->owl:Ontology rdf:al
<swi:creationDa
<owl:imports rdf:r
</owl:Ontolog-->
```

Graphite

ExplORATOR

new

Disco

new

triplr

json

rdf

html

triplr

turtle

triplr

ntriples

Remember selection for 7 days

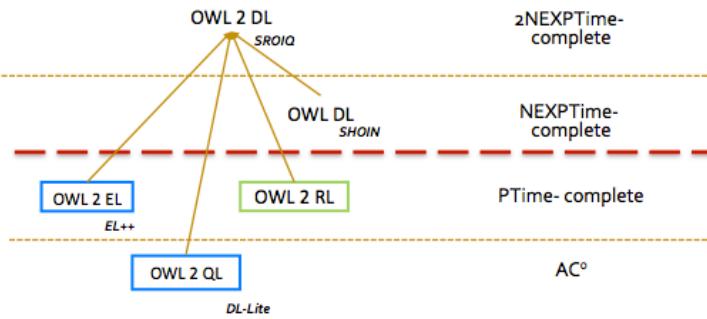
Next Previous Highlight all Match case

Find: mark Done

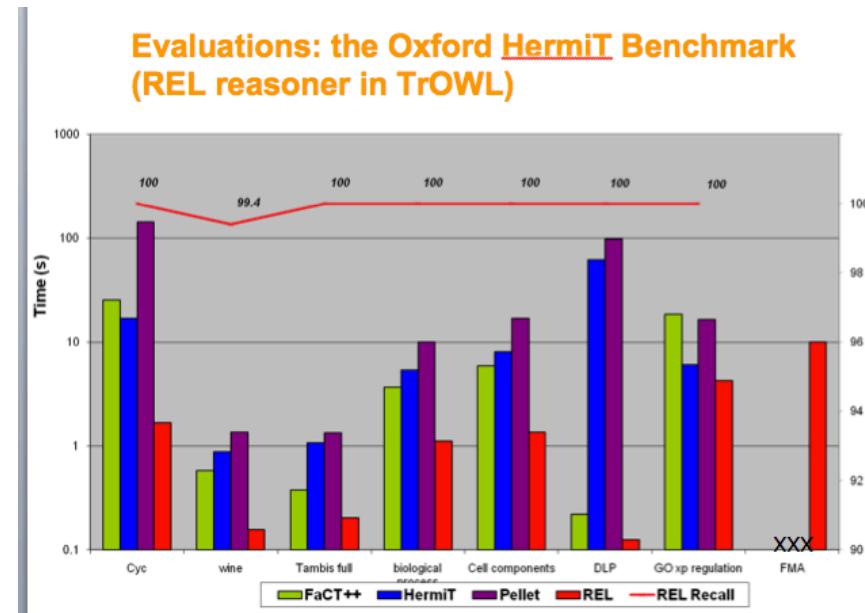
Tor Disabled

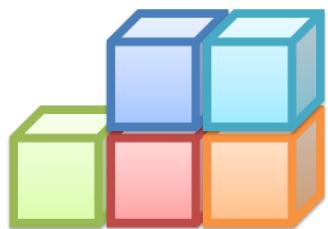
TrOWL: Tractable OWL 2 reasoning infrastructure

- Quality guaranteed transformations (such as modularisation, **faithful approximations**, forgetting)
 - OWL 2 DL -> OWL 2 QL (semantic approximation)
 - OWL 2 DL -> OWL 2 EL (syntactic approximation)
- Ontology reasoners (supporting OWL2-DL, OWL2-EL, and OWL2-QL via OWL API)
- Explanation/**Justification**
- Stream / incremental reasoning
- NBox (**Negation as failure box**)
- ONTOSEARCH2 serves as its front end
 - supporting keyword plus entailment search



Evaluations: the Oxford [HermiT Benchmark](#)
(REL reasoner in TrOWL)





Background: How do crowds construct ontology?

- Popular approach is: a small number of individuals carefully constructs the representation of the domain of discourse
 - Wikipedia's Infobox is too. It uses pre-defined template
- But most of domain experts are not ontology experts

Proposed method: Social Property Tagging

- Ex. *What do you tag “Tim B. Lee”?*
- **General social tagging:** [www](#), [W3C](#), [Southampton](#)
 - System suggests **tags** e.g., internet, people, inventor
- **Social property tagging:** [creator:WWW](#), [affiliation:W3C](#), [Southampton](#)
 - System suggests **properties** e.g., age, interest, role.
- **Popular set of properties = Quasi Class**
 - Property first, class later

Dealing with the Messiness of the Web of Data



Special Issue: Journal of Web Semantics
Deadline: 1 February 2011

Editors: Stefan Schlobach, Craig A. Knoblock
Email: schlobac@few.vu.nl

Direct + Indirect: Twin Properties

Tim
Himself



ns1:age
(direct property)

The number
fifty-five

55

A page
about
Tim



The screenshot shows a Wikipedia article page for "Tim Berners-Lee". The page includes a portrait photo, a summary, and a detailed biography. A sidebar on the left lists various language versions of the page. The main content area contains sections like "Born", "Residence", "Nationality", "Education", "Occupation", and "Employer", each with specific information.

ns2:age
(indirect property)

"55"

Simplified
RDF

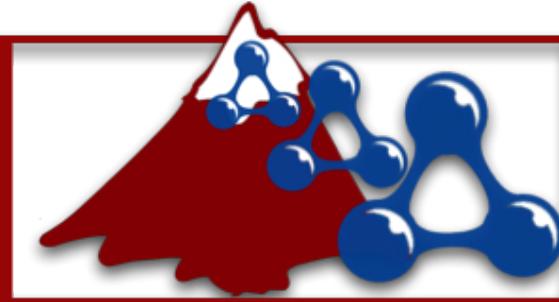


The two-
character
string five
five

Let's Make Them Interoperable!

For more: bit.ly/twinprop

avalanche



University of
Zurich^{UZH}



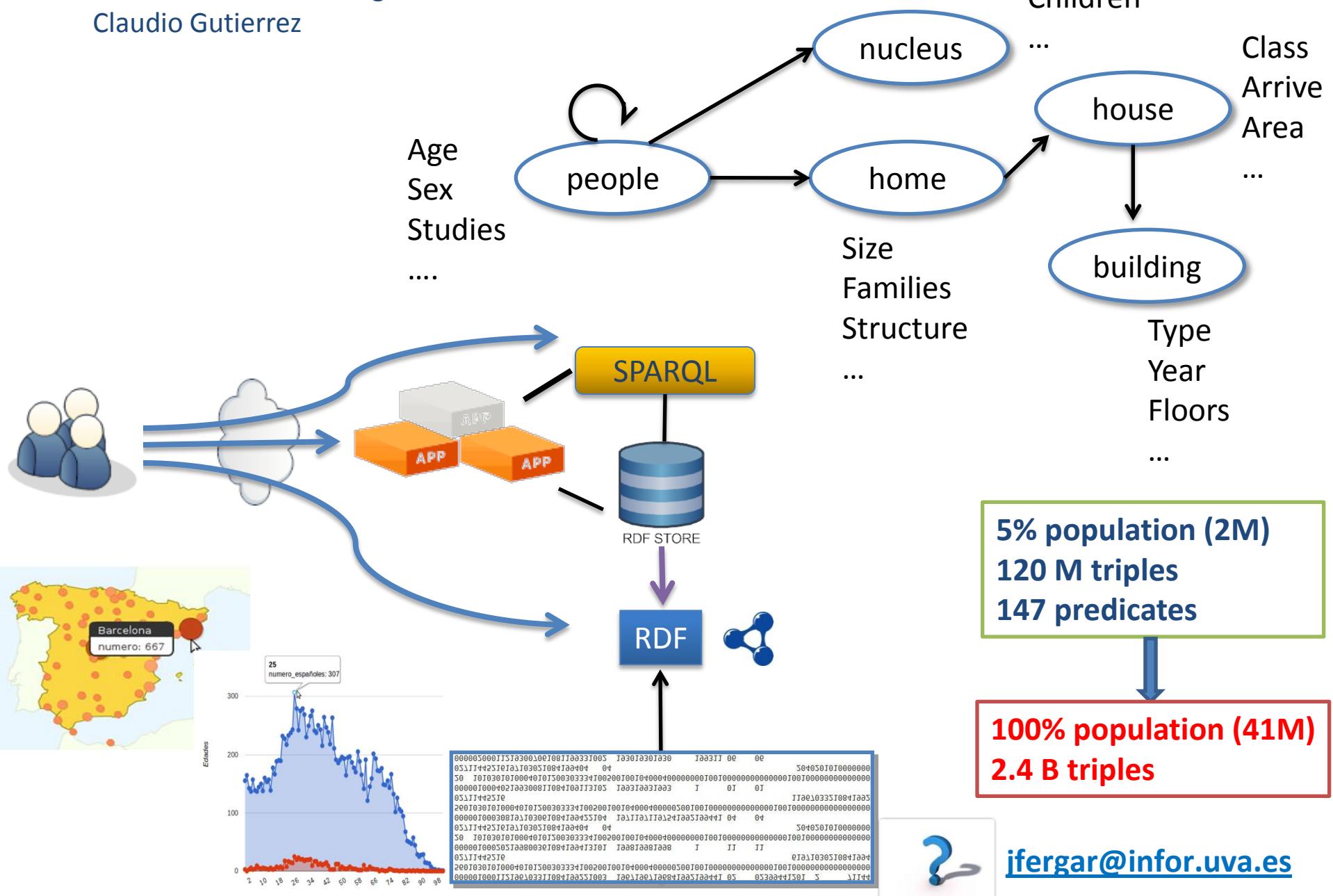
Dynamic and Distributed
Information Systems

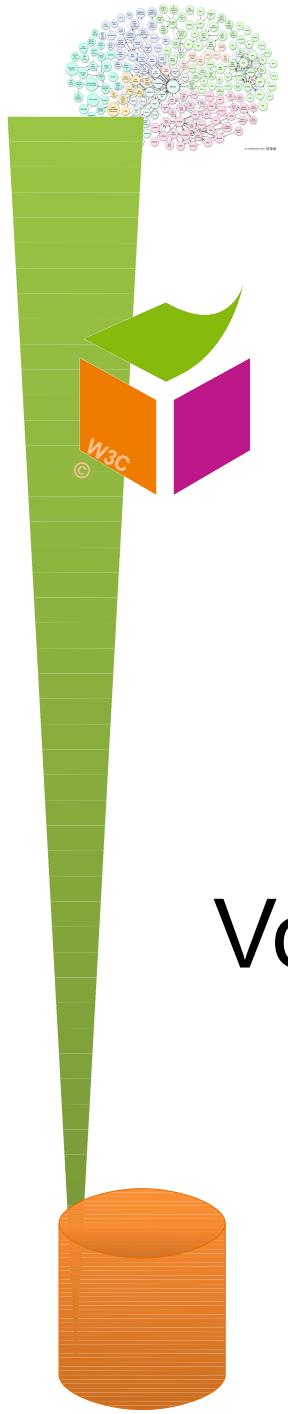
Putting the Spirit of the Web back into SemWeb Querying

- Problems
 - Web of Data is growing: LoD ~5B triples
 - Unknown Hosts for any given triple
 - Lack of (high) quality statistics (join estimations)
 - Physical constraints (bandwidth, latency, availability)
- Our solution
 - Interleaved discovery, query planning, and execution
- What is yours?

The 2001 Spanish Census to RDF

Javier D. Fernández, Miguel A. Martínez-Prieto,
Claudio Gutierrez





Data interconnexion
Data publication

Data conversion and URI generation

Vocabulary selection

<http://datalift.org>





eXascale Infolab

 **SciDB**
Arrays

TrajStore
GPS Analytics

SlinkStore
LoD Analytics

open Ph.D. / PostDoc positions

<http://diuf.unifr.ch/xi>

pcm@csail.mit.edu