



# My Research Lines

**Measures, Matching, Multilingualism  
(and other herbs) on the SW**

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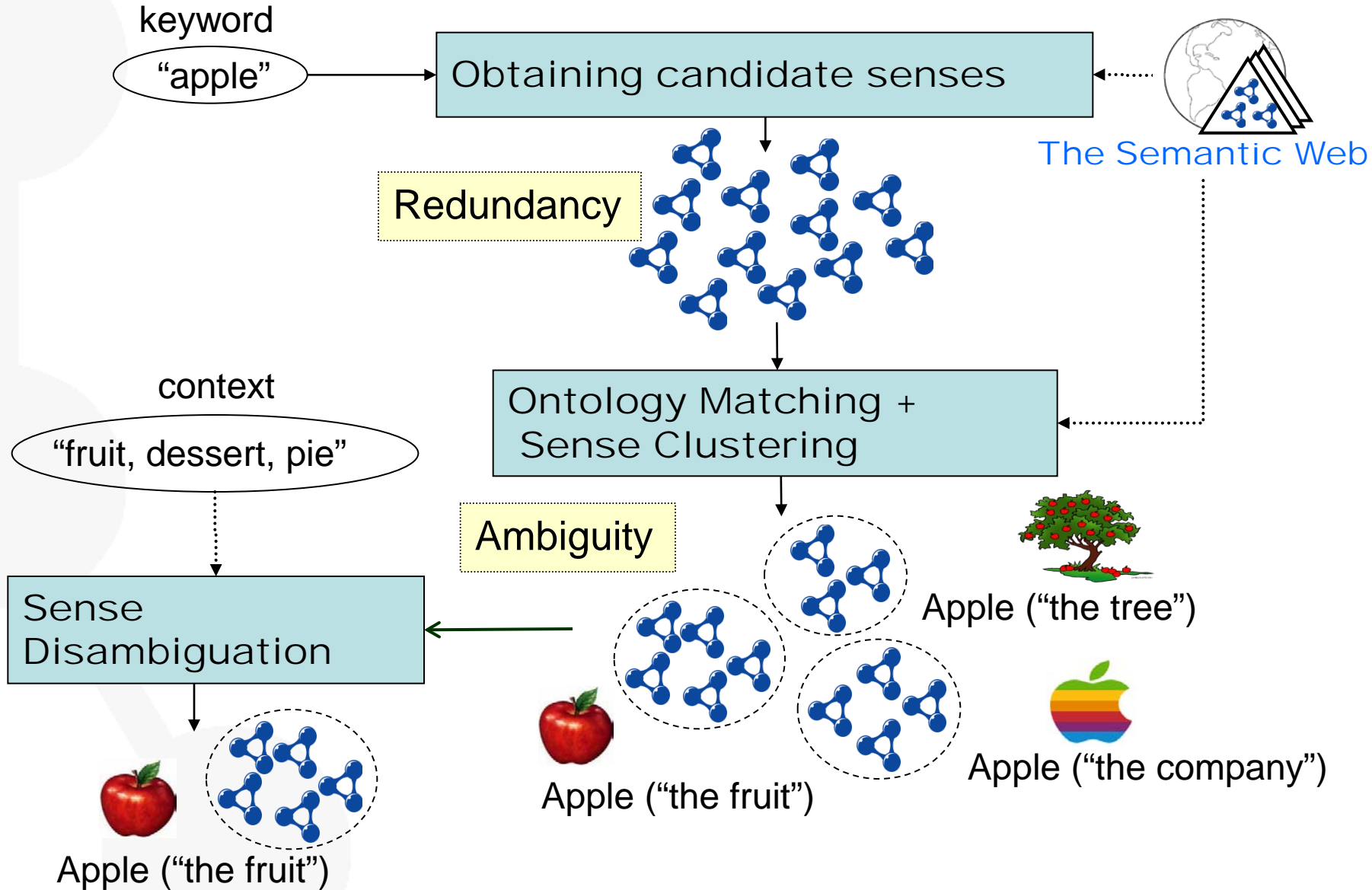
**Talk at OEG**  
**13/02/2014**

- Some Background
  - The PhD
  - The Post-doc
  - Overall view
- My current activities
- Recent research topics
- New research topics
- Long term research
- Next milestones

# Some background

(What I did so far, in a few clouds)

# The PhD...

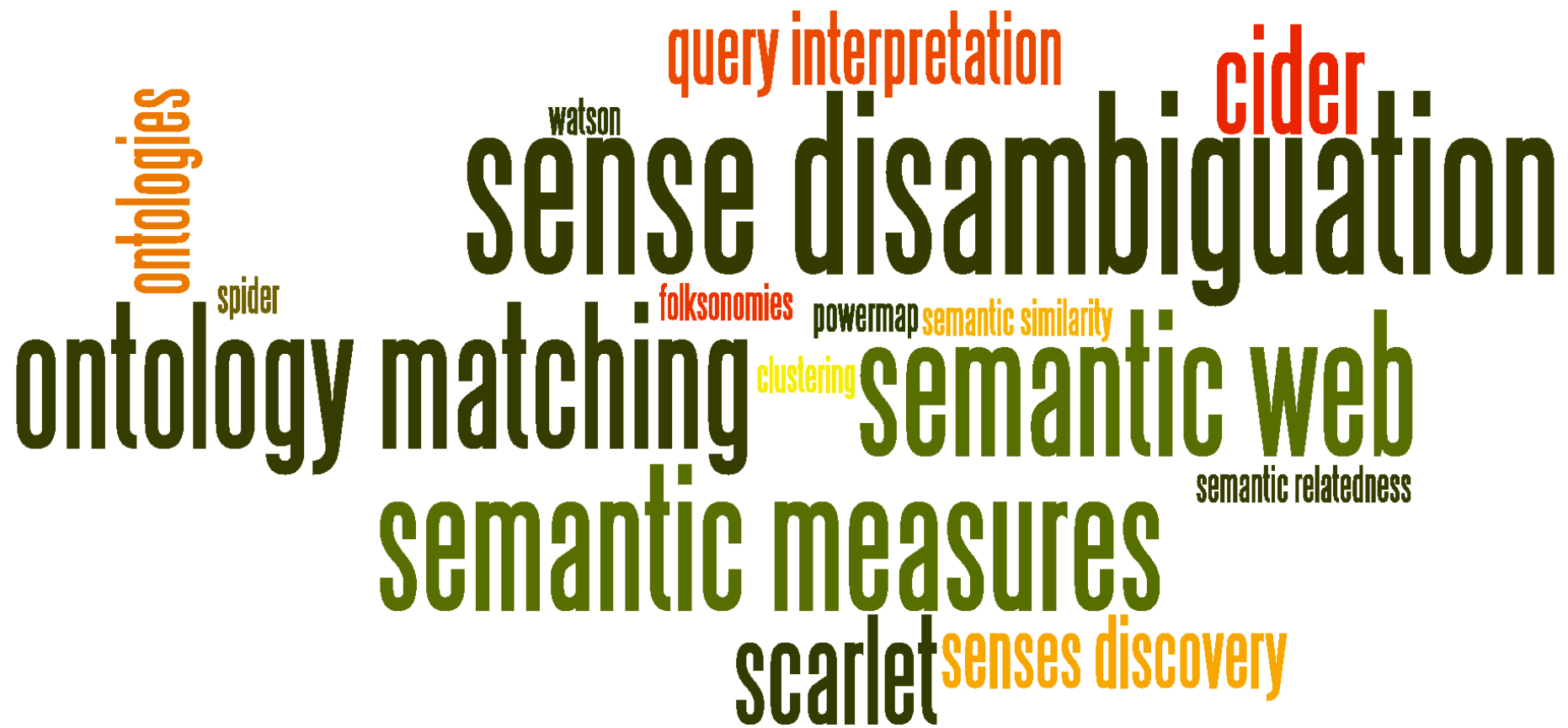


# PhD research

“Integration and Disambiguation Techniques for Semantic Heterogeneity Reduction on the Web”



KNOWLEDGE MEDIA  
**KMi**  
INSTITUTE



A word cloud visualization of PhD topics from 2006 to 2009. The words are arranged in a dense, overlapping manner, with colors ranging from dark green to red. The most prominent words are 'sense disambiguation', 'ontology matching', 'semantic web', and 'semantic measures'. Other visible words include 'query interpretation', 'cider', 'ontologies', 'watson', 'spider', 'folksonomies', 'powermap', 'semantic similarity', 'clustering', 'scarlet', 'senses', 'discovery', and 'semantic relatedness'.

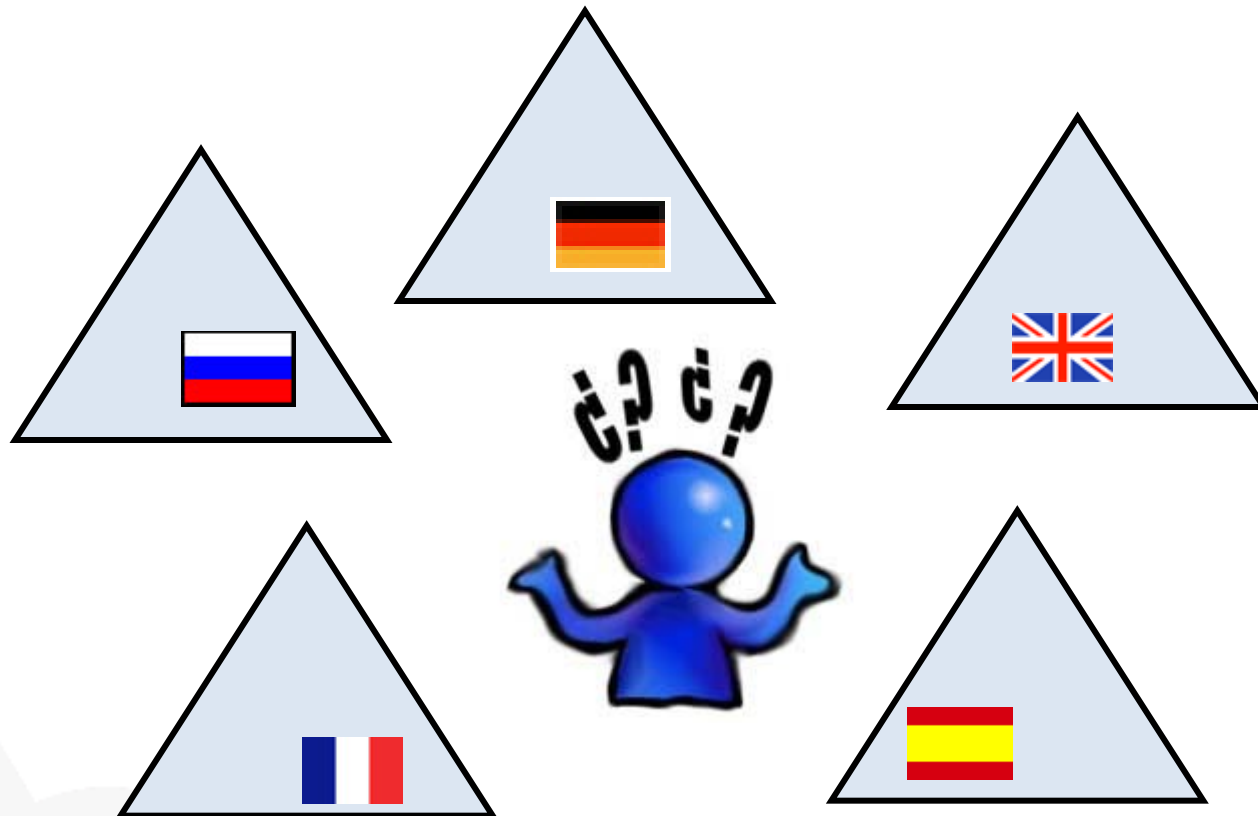
query interpretation  
cider  
watson  
ontologies  
spider  
sense disambiguation  
folksonomies  
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semantic similarity  
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ontology matching  
semantic web  
semantic relatedness  
semantic measures  
scarlet  
senses  
discovery

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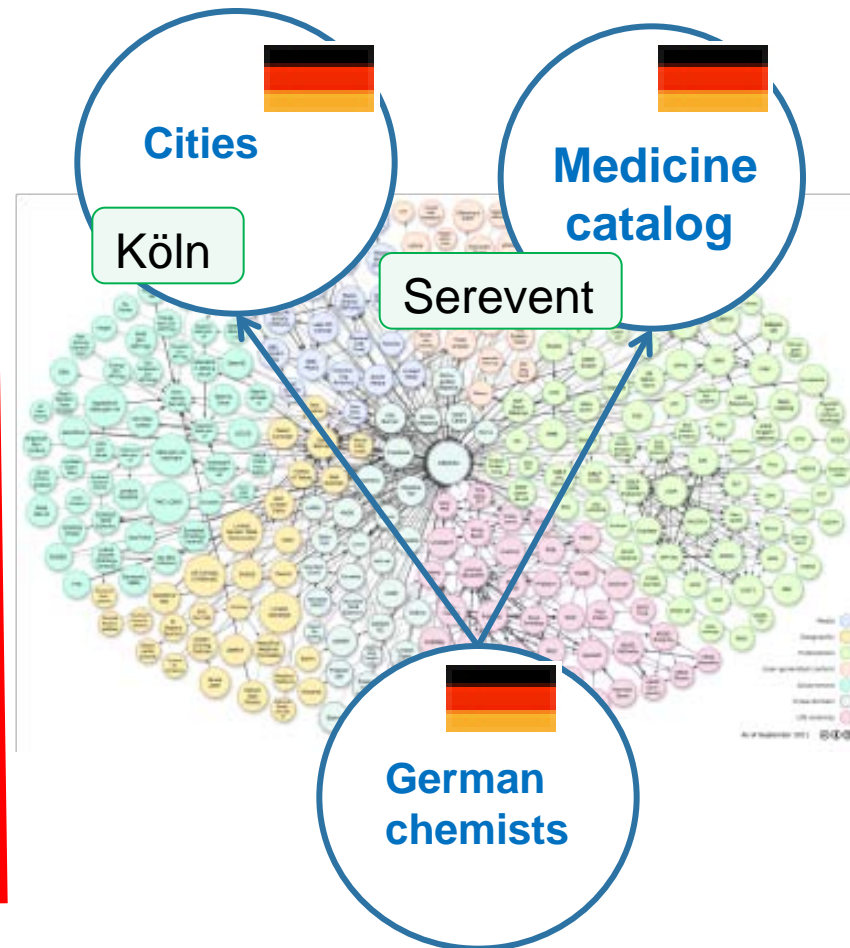
# The post-doc...

## Towards a Web of monolingual semantic “islands”?



*“How can universal access to the Web of Data be guaranteed to users, independent of the language they speak?” [1]*

# A motivating example



(\* ) Give me duty chemists in Cologne having Beglan

Several **challenges** to make this happen:

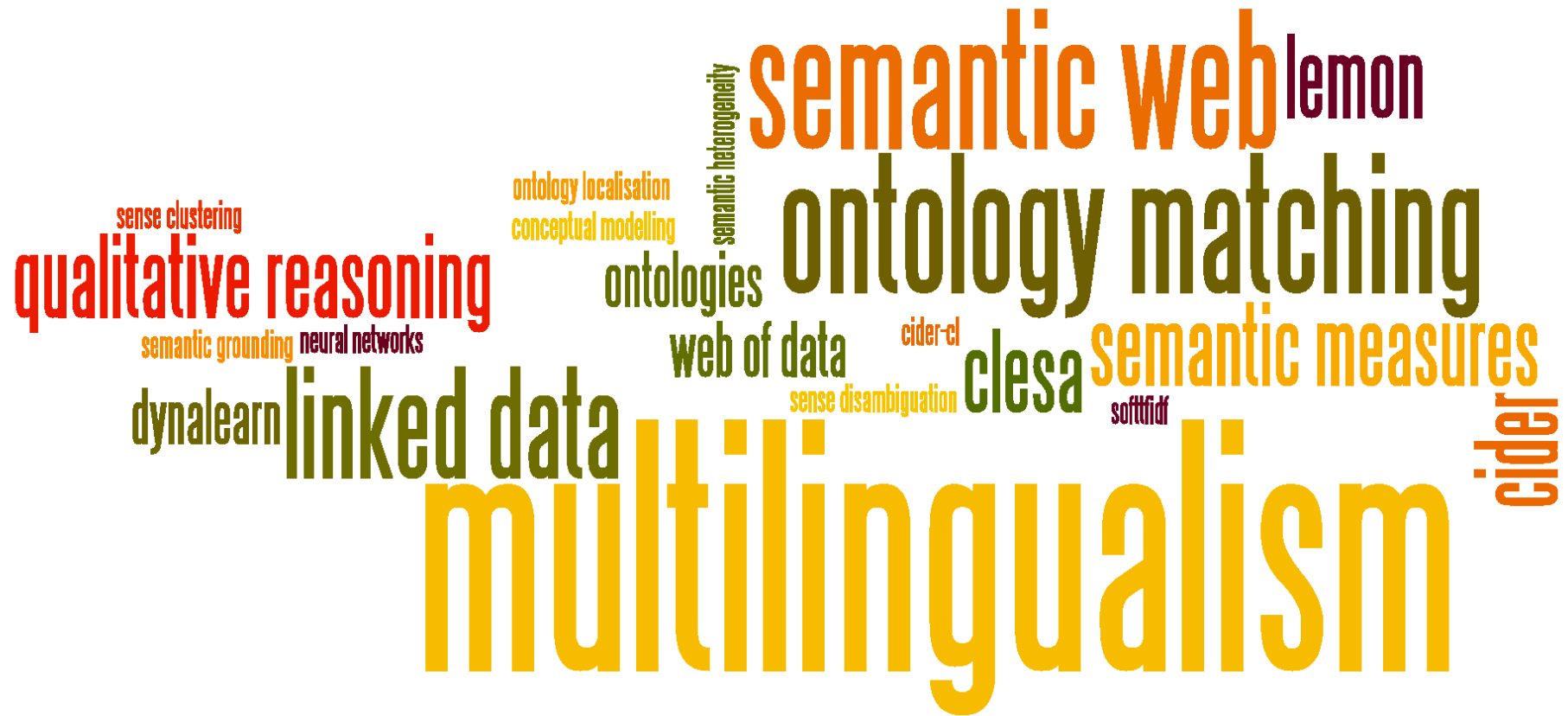
- Ontology **translation/localisation**
- Cross-lingual **ontology mappings**
- Representation of multilingual **lexical information**
- Cross-lingual **access** and **querying** of Linked Data

# “Semantic enhancement of Qualitative Reasoning” “Multilingual Web of Data”

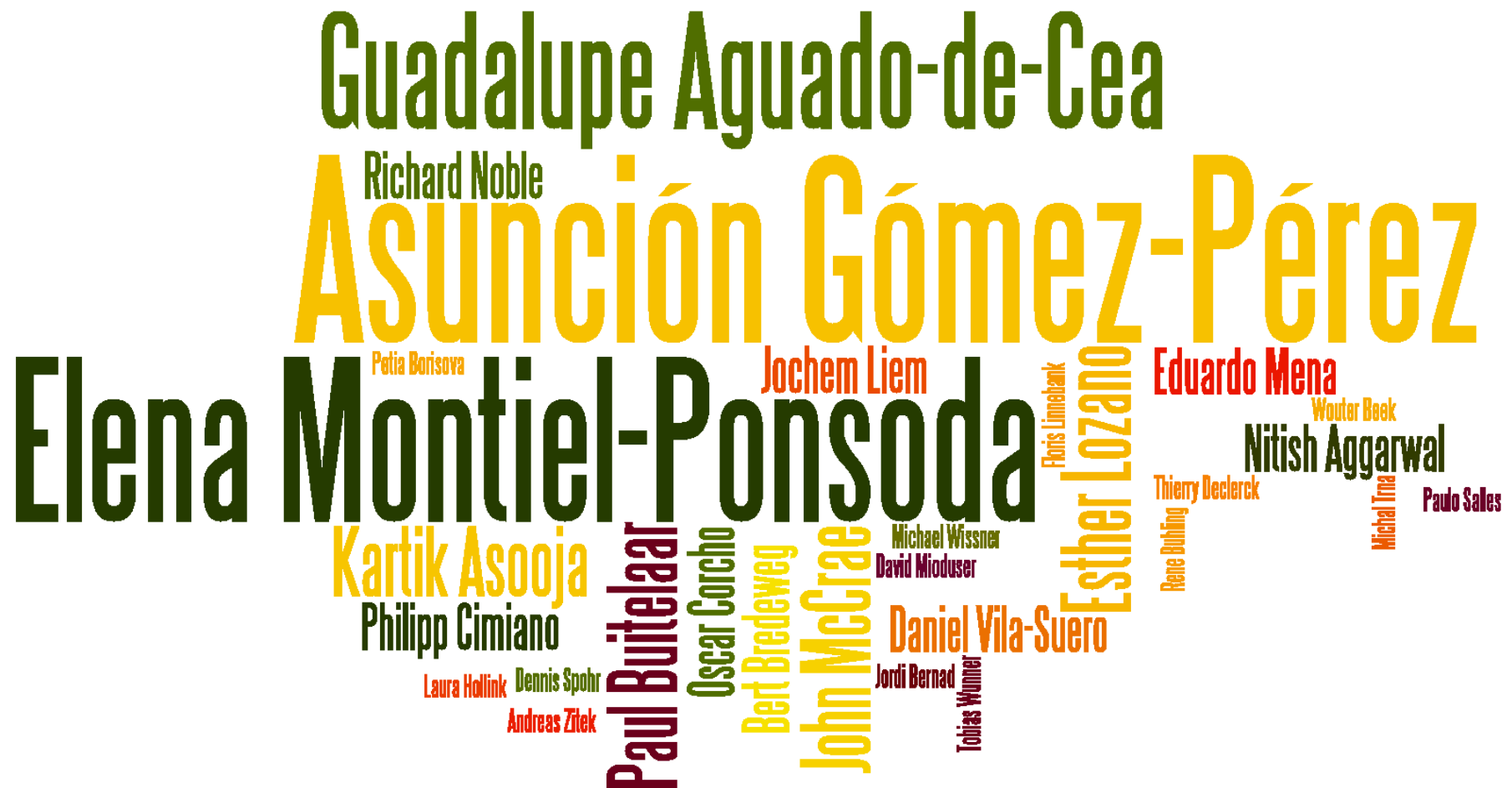


**BabeLData**

**mulider**



## Post-doc CO-AUTHORS (2010-present)



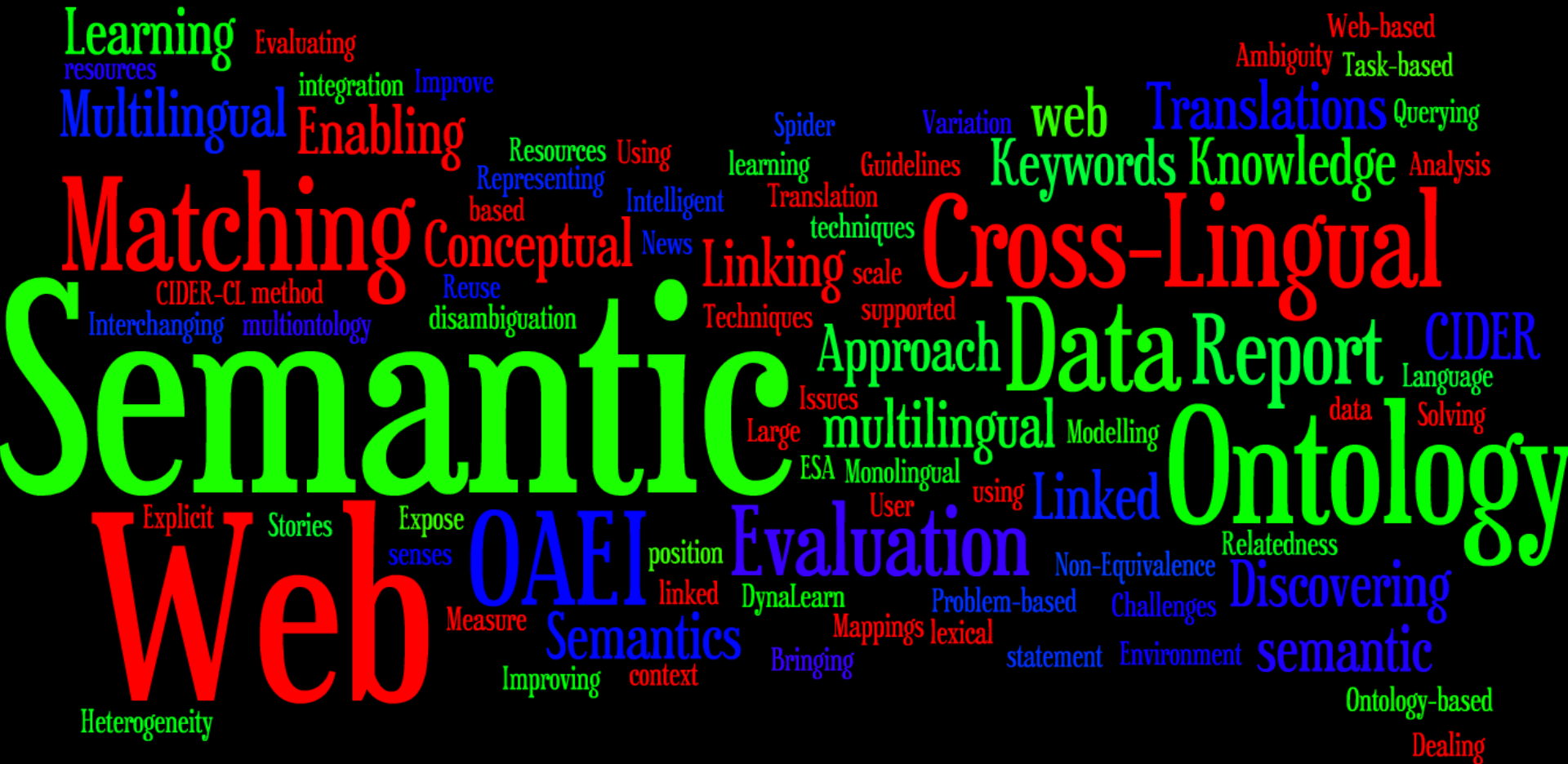
# Overall view







## Keywords (from paper titles)

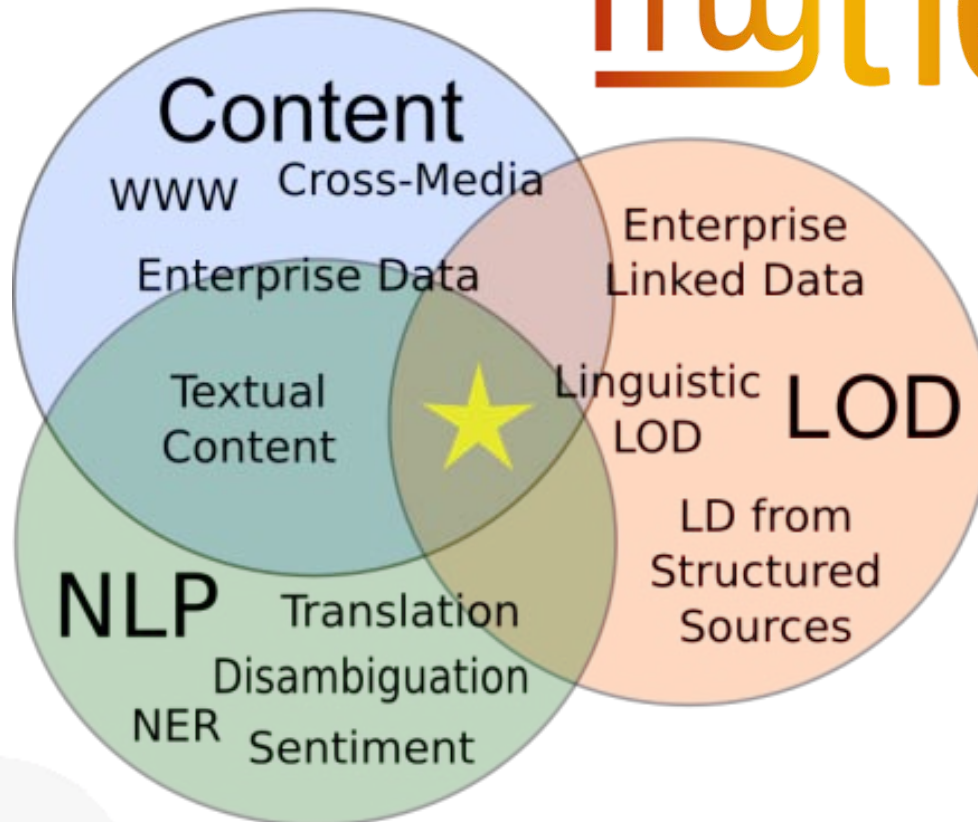


# My current activities at

The logo for mylider, featuring the word "mylider" in a stylized font. The "my" is in a bold, rounded, orange-yellow color, and "lider" is in a lighter orange-yellow color. A small molecular structure icon is positioned above the dot of the "i".

## mylider

# mylider



- **Quality** Assurance Coordinator
- Monitoring “day to day” work at UPM / interaction with the consortium / administrative stuff
- Organisation of **Tutorials** on Linguistic Linked Data, Roadmapping Workshops, etc.
- PC member of **Multilingual Web** Workshops series



- Chair of W3C **Best Practises for Multilingual LOD** community group
- Active contribution to other W3C groups:
  - Ontology Lexica (ontolex)
  - Linked Data for Language Technologies (LD4LT)
- Social **networking**
- **Paper** writing on related topics







# Recent research topics (2010-2013)



- Semantic Enhancement of Qualitative Reasoning
  - Semantic Grounding 
  - Semantic Feedback 
  - ... Esther's Thesis to be finished



## ■ Multilingual Web of Data



- Challenges 
- Guidelines MLD generation/exploitation 
- Observatory
- Best practises (W3C)
- lemon model (W3C)

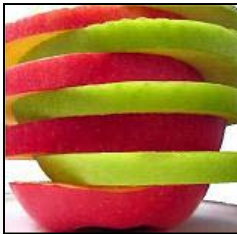


lemon 

[lemon-model.net](http://lemon-model.net)

## ■ Cross-lingual linking

- Challenges 
- Cross-lingual semantic measures: CL-ESA 
- Cross-lingual Ontology Matching: CIDER-CL
- Cross-lingual Instance matching
- Representation of translation relations in lemon



**CIDER-CL**



<http://www.oeg-upm.net/files/cider-cl>



# New research topics (2014-2015)

- Content Analytics
  - Guidelines, best practices, roadmap, etc. for multilingual multimedia **LD-aware content analytics**
- Multilingual Web of Data
  - **Guidelines** for Multilingual Linguistic Linked Data generation/exploitation
  - **Migrate/lemonize** some “real” linguistic resources
  - Cross-lingual **access** and **querying** (Q/A, query interpretation, semantic grounding, etc.)
  - **Licensing** Issues



- Cross-lingual linking
  - New family of **semantic measures** based on BabelNet
  - Use of BabelNet as **background knowledge** for OM
  - Methods for establishing **cross-lingual mappings** to BabelNet
  - **Storage** of cross-lingual links



A very large multilingual encyclopedic dictionary and semantic network

# Long term research (2016-...)

- From semantic queries to “traditional” Web data
  - Semantic query expansion
  - Web annotation “on the fly”
  - Combination of syntactic/semantic search
  - Multilingual issues
- ERC Grant? RyC?



# Next milestones

## March 2014

- LIDER workshop collocated at [European Data Forum](#) (Athens)
- [Papers](#) about ontology translation and cider-cl finished

## April 2014

- Some [linguistic resources](#) migrated as LLD
- LREC [tutorial](#) about Linguistic Linked Data ready

## May 2014

- [Multilingual Web](#) workshop & LIDER workshop (Madrid)
- Tutorial about LLD at [LREC](#) (Reykjavik)
- Paper about translations in lemon presented at [LREC](#) (Reykjavik)

## July 2014

- Stay at Univeristy of Rome to work on [BabelNet](#) (tentative)

Thank  
You!!

- [1] J. Gracia, E. M. Ponsoda, P. Cimiano, A. G. Pérez, P. Buitelaar, and J. McCrae, "[Challenges for the multilingual web of data](#)," *Journal of Web Semantics*, vol. 11, pp. 63-71, Mar. 2012.
- [2] J. McCrae, G. A. de Cea, P. Buitelaar, P. Cimiano, T. Declerck, A. Gómez-Pérez, J. Gracia, L. Hollink, E. Montiel-Ponsoda, D. Spohr, and T. Wunner, "[Interchanging lexical resources on the semantic web](#)," *Language Resources and Evaluation*, vol. 46, 2012.
- [3] E. Montiel-Ponsoda, J. Gracia, G. A. de Cea, and A. Gómez-Pérez, "[Representing translations on the semantic web](#)," in *Proc. of 2nd Workshop on the Multilingual Semantic Web, at ISWC'11, Bonn, Germany, ISSN 1613-0073*, vol. 775. CEUR-WS, Oct. 2011, pp. 25-37