Automatic Identification and Disambiguation of Concepts and Named Entities in the Multilingual Wikipedia

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Babelfied Wikipedia: An annotated multilingual corpus

- **Goal**: Create a multilingual annotated corpus
  - With both word senses (i.e. concepts) and entities
- Calculate some statistics on that
- Automatically!

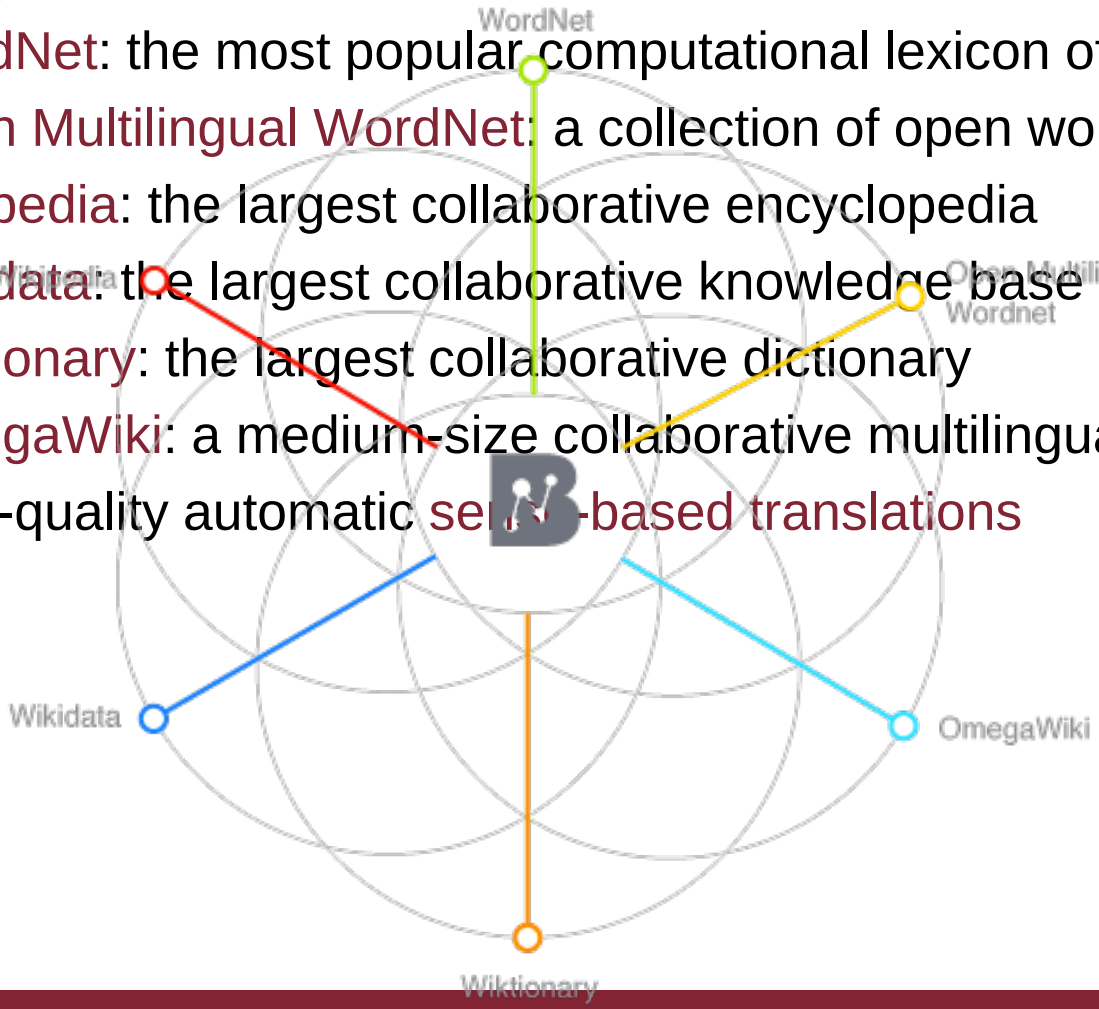
- *The annotated dataset is available for download in text and RDF/NIF format at http://lcl.uniroma1.it/babelfied-wikipedia/*

How are we going to do that?

BabelNet 3.5 (http://babelnet.org)

What is BabelNet

- A merger of resources of different kinds:
  - WordNet: the most popular computational lexicon of English
  - Open Multilingual WordNet: a collection of open wordnets
  - Wikipedia: the largest collaborative encyclopedia
  - Wikidata: the largest collaborative knowledge base
  - Wiktionary: the largest collaborative dictionary
  - OmegaWiki: a medium-size collaborative multilingual dictionary
  - High-quality automatic semantic-based translations



What is BabelNet

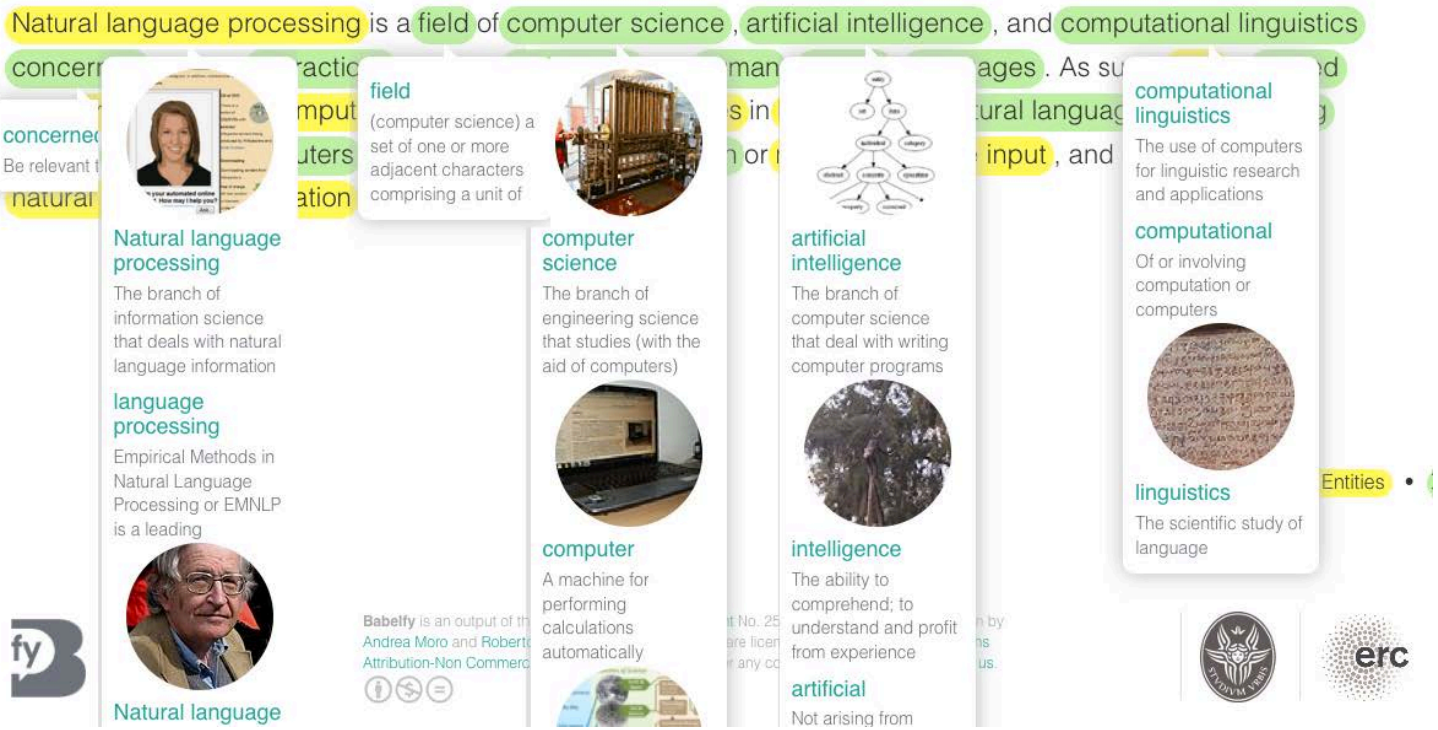
- Multilinguality: the same concept is expressed in tens of languages
- Coverage: 272 languages and 14 million entries!
- Concepts and named entities together: dictionary and encyclopedic knowledge is semantically interconnected
- Full-fledged taxonomy: is-a relations are available for both concepts and named entities (Wikipedia Bitaxonomy)
- [NEW] Semantic relations: semantic network structure with labeled relations from Wikidata and infoboxes
- [NEW] Domain labels for millions of synsets

How are we going to do that?

Babelfy (http://babelfy.org)

Babelfy: A Joint approach to WSD and Entity Linking [Moro et al., TACL 2014]

- **Babelfy** is a state-of-the-art unified graph-based approach to **Entity Linking** and **Word Sense Disambiguation** based on **BabelNet**



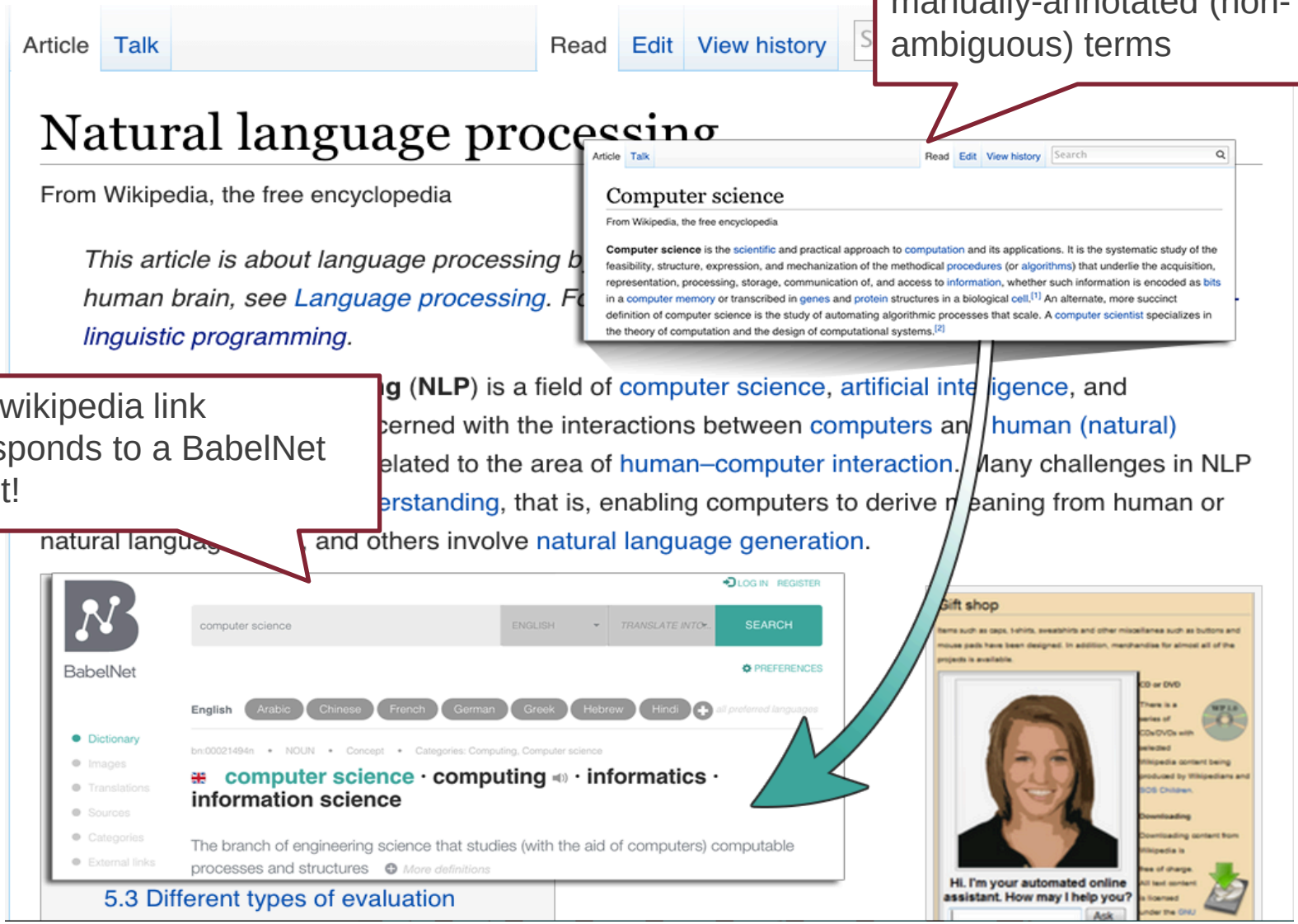
Disambiguating Wikipedia

- We applied **Babelfy 1.0** to the English and Italian editions of Wikipedia, disambiguating most of the content words.
- We used the **user-provided hyperlinks** to **improve** the quality of our automatic annotation.

Disambiguating Wikipedia

Wikipedia links provide manually-annotated (non-ambiguous) terms

Each wikipedia link corresponds to a BabelNet synset!



Statistics

For statistics and evaluation come to the social session!

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