A ColWordNet API

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- Jose Camacho-Collados
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taln research group

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Outline

- Motivation
- ColWordNet
- The API

1. Motivation

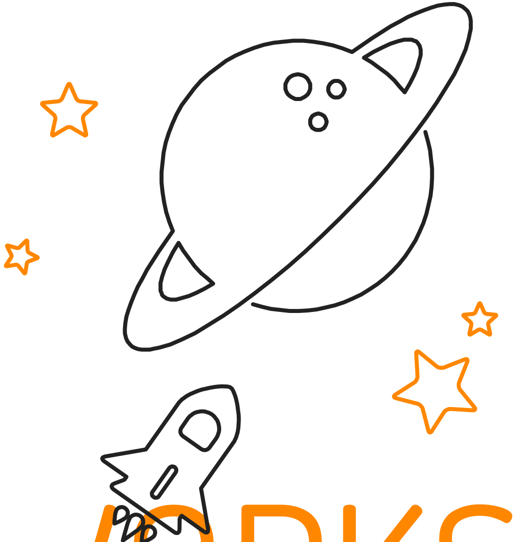
WordNet as a lexical resource for language learning and AI

Motivation: WordNet is a useful resource in NLP

- “The list of papers citing WordNet seems endless” (Hovy, Navigli and Ponzetto, AI 2013)
- It is a useful lexical resource for many tasks at different spectrums of LTs.
- One area where there is clear room for improvement is on *lexical combinations* of words: collocations.

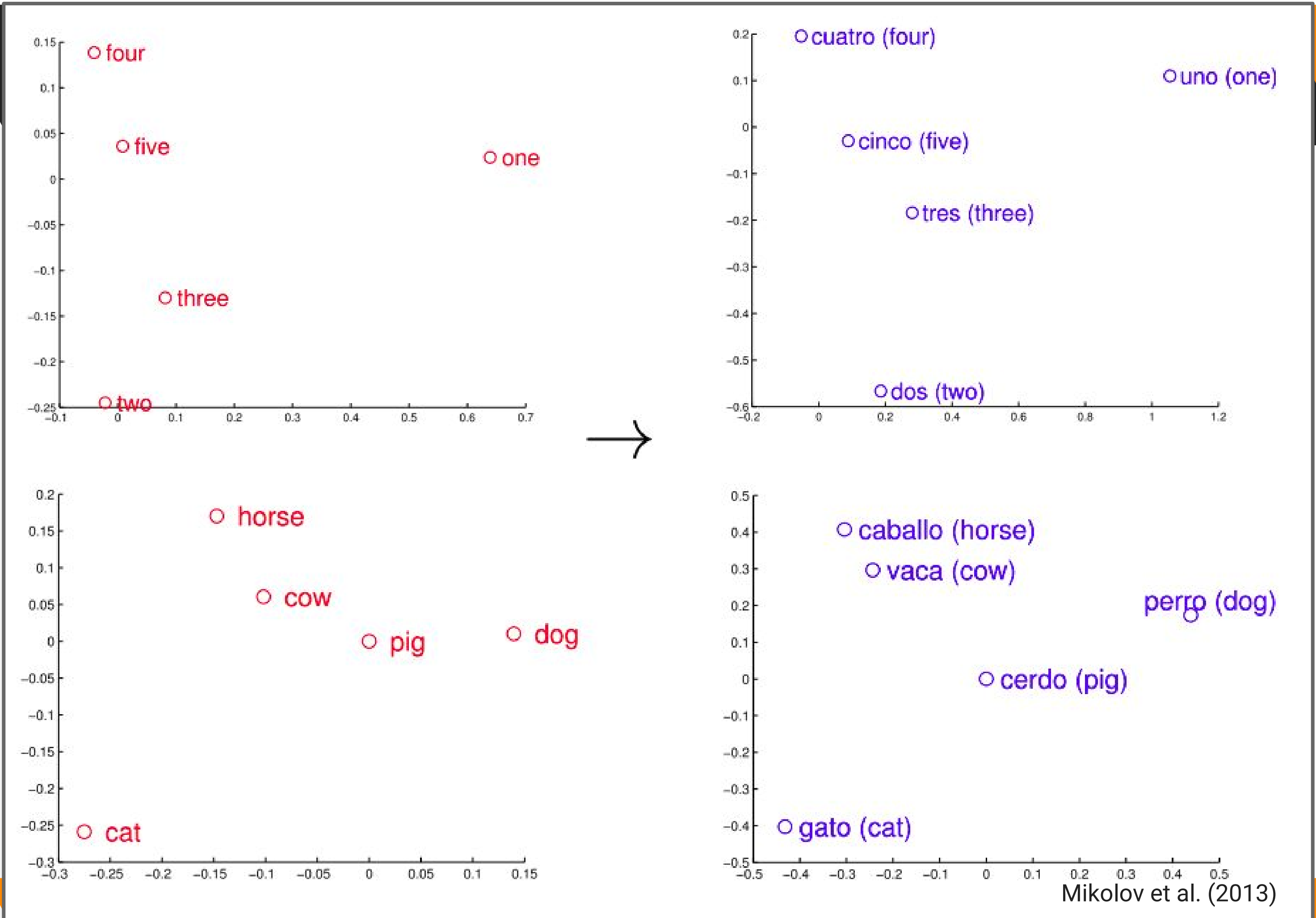
WordNet could be extended with collocational information

- In Espinosa-Anke et al. (Coling 2016) we describe and evaluate ColWordNet (CWN).
  - Previous work on collocation acquisition focuses on compiling collocation lists (Church and Hanks 1989, Kilgarriff 2006) - No semantic classification.
  - We tackled fine-grained collocation classification, drawing upon the lexical relation between the base and the collocate:
  - ‘**perform**’: take [an] exam, make [a] decision, pose [a] question
  - ‘**put an end**’: solve [a] problem, break the silence
  - Linguistic motivation based on the Meaning Text Theory (Melćuk, 1987)



CWN: HOW IT WORKS

A brief description of our method for creating CWN

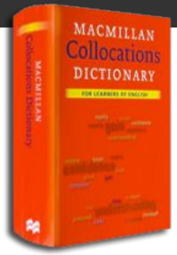


Mikolov et al. (2013)

CWN: How it works

Train data manual compilation and disambiguation

Manual selection of a few dozens collocations

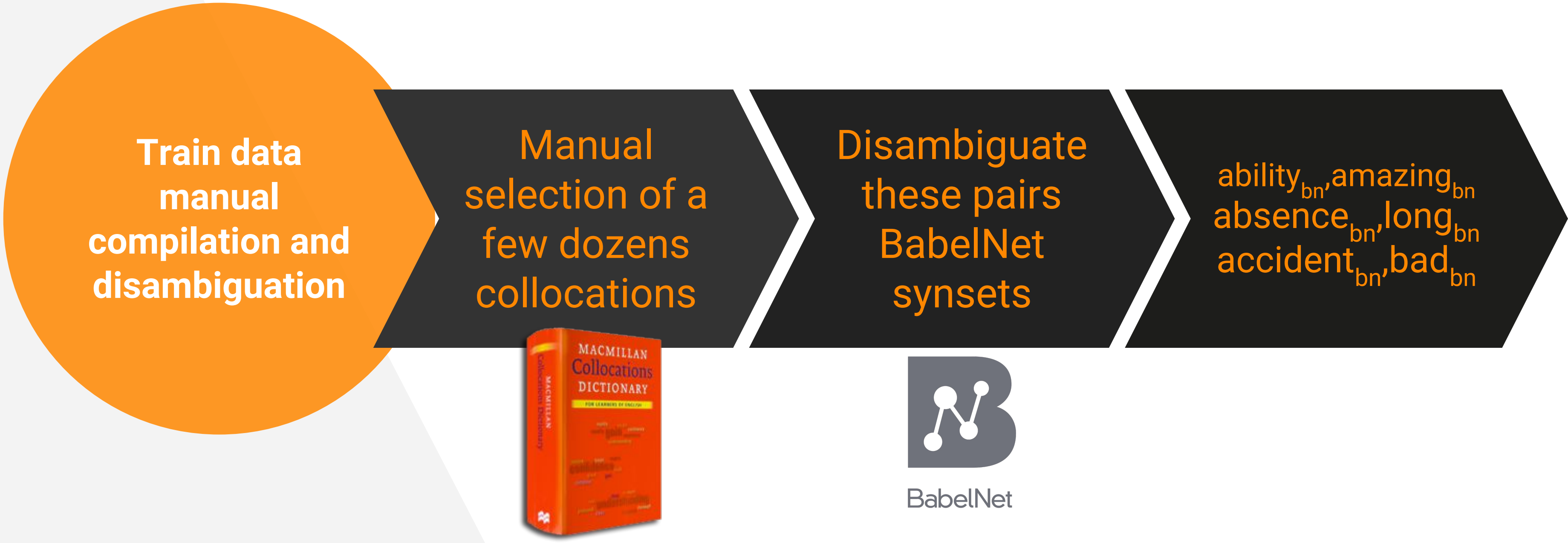


Disambiguate these pairs BabelNet synsets

BabelNet

ability,amazing
absence,long
accident,bad

CWN: How it works



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ability_{bn},amazing_{bn}
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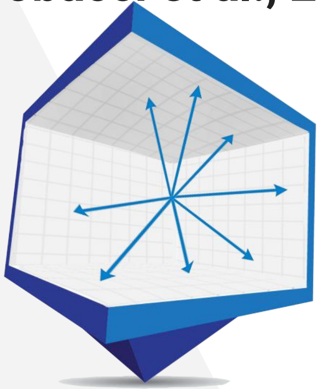
CWN: How it works

Mapping train data sense-level embeddings models (vectors)

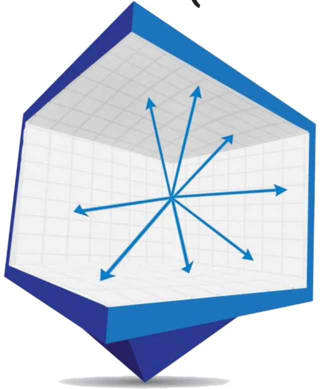
CWN: How it works

Bases (Iacobacci et al., 2015)



Mapping train data sense-level embeddings models

Collocates (Mancini et al., 2016)



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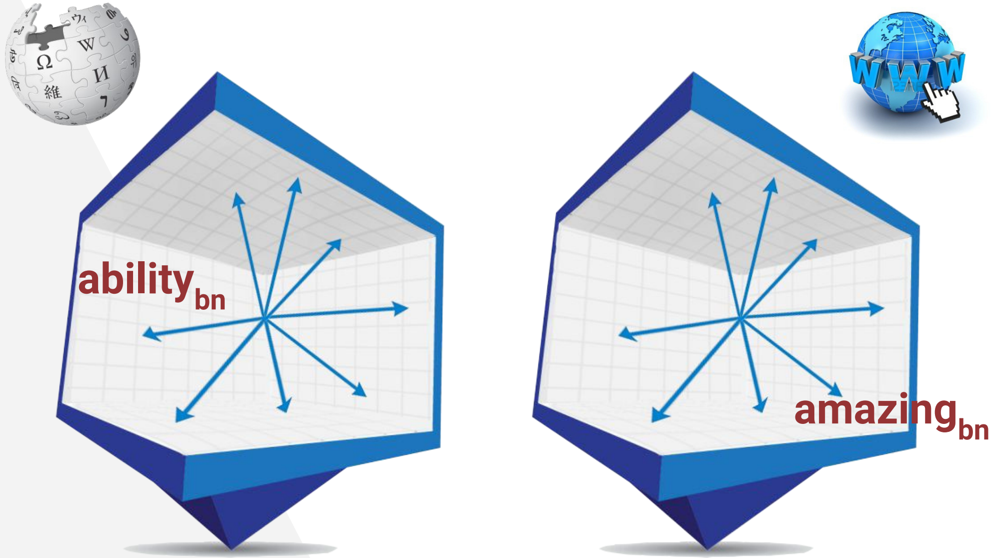

Train a transformation matrix between bases and collocates

CWN: How it works

Run the learned transformation to encode collocation relations between synsets

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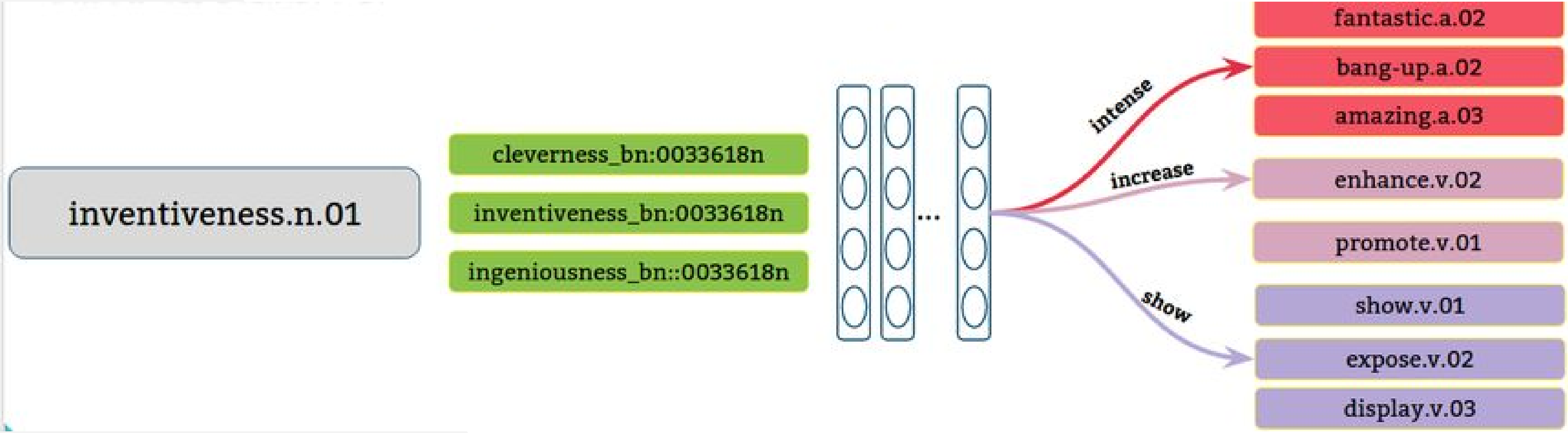

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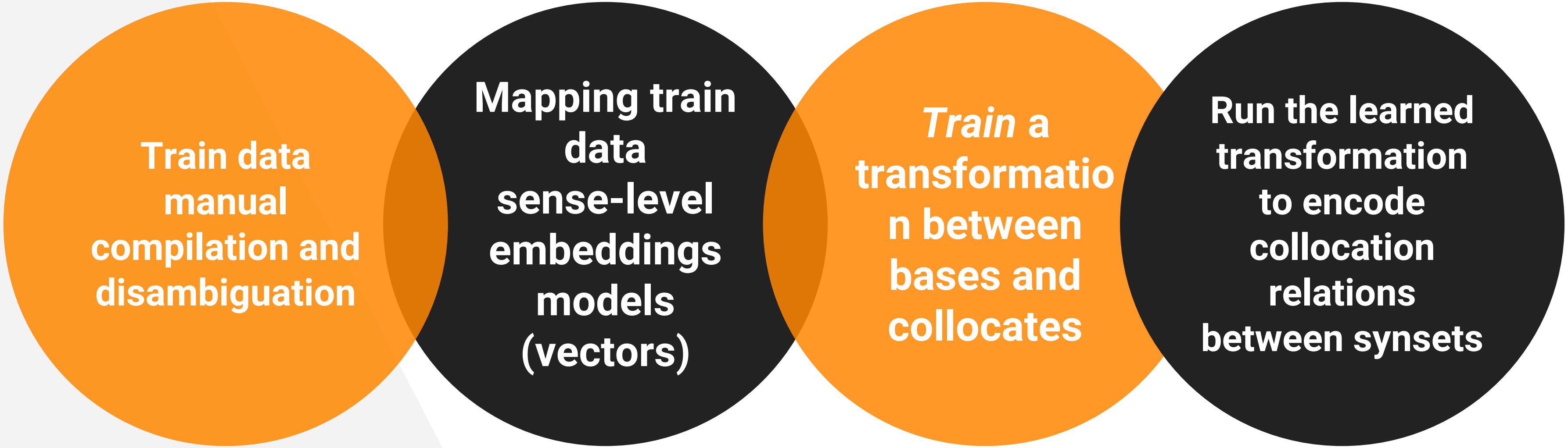

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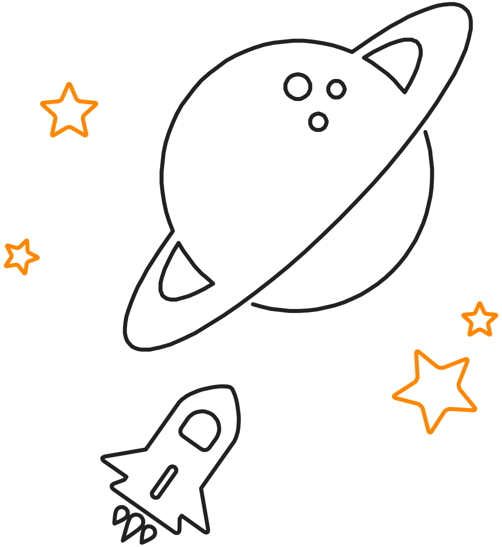

The API

A preliminary approach to enabling CWN querying

What it is/does and what it isn’t/doesn’t

It generates a reliable mapping

The “translation matrix” approach has been validated in plenty of NLP tasks.

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It is finished

This is a very preliminary prototype, so by no means this is a finished project.

Thank you

Any questions?

https://bitbucket.org/luisespinosa/cwn/

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