The Name of the Game is Comparable Corpora

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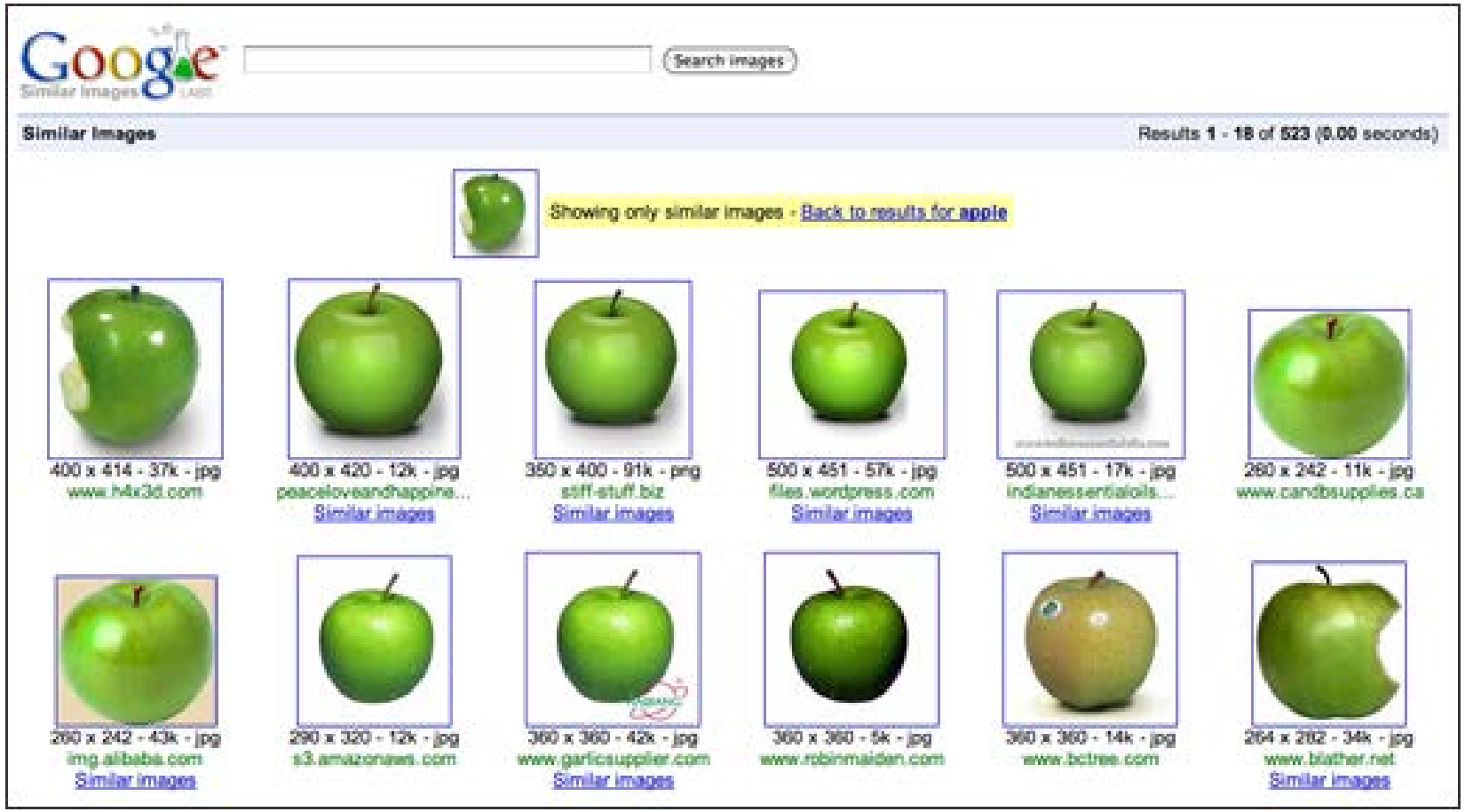
Preliminaries

Comparable corpora: when are corpora ‘comparable’?

Basic concepts and definitions

When are corpora ‘comparable’?



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Comparable corpora (McEnery, 2003)

- *Comparable corpora* are corpora where a series of monolingual corpora are collected for a range of languages, preferably using the same sampling frame and with similar balance and representativeness, to enable the study of those languages in contrast.

Sampling frame

- The sampling frame is essential (Tony McEnery *2006)*:
- The components representing the languages involved must match each other in terms of proportion, genre, domain and sampling period

Degree of comparability

Degrees of non-parallel corpora (Fung 2004, 2005)

- parallel corpora - sentence-aligned corpus containing bilingual translations of the same document
- noisy parallel corpora - non-aligned sentences which are nevertheless mostly bilingual translations of the same document
- comparable corpora - non-sentence-aligned, non-translated bilingual documents which are topic-aligned.
- quasi-comparable corpora - disparate, very-non-parallel bilingual documents which could either be on the same topic (in-topic) or not (off-topic)

Multilingual applications and corpora

- Ideally, parallel data would be the best resource both for multilingual NLP applications and for users.
- However, parallel corpora or translation memories may not be available, difficult to acquire or may be time-consuming to develop.
- Alternative and more promising approach would be to benefit from comparable corpora.

Comparable corpora are…

- … the most versatile and valuable resource for multilingual Natural Language Processing
- … and ‘multilingual’ language users

Multilingual NLP applications

- Machine Translation (see Rapp, Sharoff and Zweigenbaum 2016)
- Word translation (Rapp 1995; Gaussier et al. 2004; Gamillo and Pichel 2007; Pekar, Mitkov et al. 2008)
- Term extraction (Fung and McKeown 1997; Daille and Morin 2005; Saralegi, San Vicente and Gurrutxaga 2008)
- Bilingual document similarity (Sharoff, Zweigenbaum and Rapp 2015; Jagarlamundi et al. 2010)
- Crosslingual coreference resolution (Green at al. 2011)
- Name entity transliteration (Udupa et al. 2008; Klementiev and Roth 2006)
- Other multilingual applications such as
  - Automatic identification of cognates and false friends (Mitkov et al. 2008)
  - Testing the validity of translation universals (Corpas, Mitkov et al. 2008)
  - Tracking language change (Stajner and Mitkov 2012; Stajner, Mitkov and Leech 2013)
  - Automatic extraction and translation of multiword expressions (Mitkov 2016; Taslimipoor, Mitkov, Corpas and Fazly 2016)

Language users

- Translators (Zanettin 1998; Saldahna and O'Brien 2002; Olohan 2002; Corpas and Seghiri 2009; Corpas and Seghiri 2016)
- Terminologists (Lemay et al. 2005; Durán Muñoz 2012)
- Interpreters (Pérez Pérez 2013)

Comparable corpora within and across languages

- Kilgariff (2003): comparable corpora may be of the same or different languages
- Regards ‘comparability’ as ‘similarity’

Food for thought

Is surface similarity the best way forward?

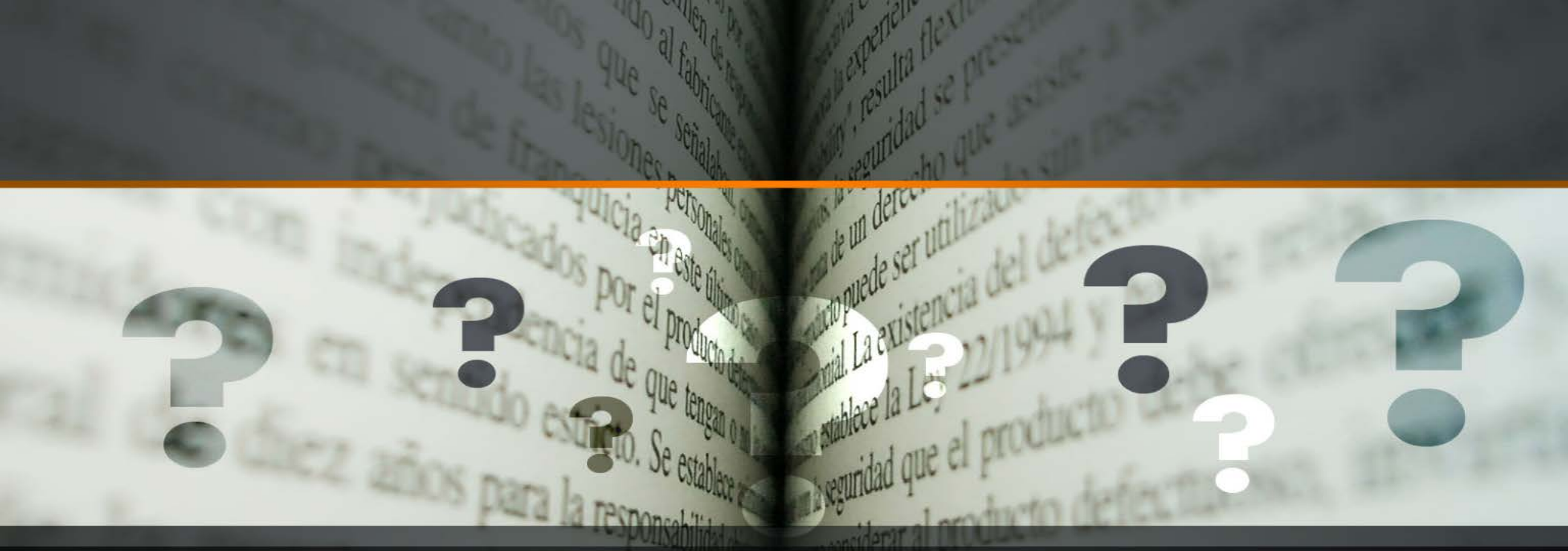
- Comparable corpora are usually compiled using surface similarity (statistical) techniques.
- Is this the best way forward?
- Example from the field of Translation Memory (character-string similarity, calculated through Levenshtein distance).

TM example

- SDL Trados gives the segments ‘Prendre des mesures de dotation et de classification.’ and ‘Connaissance des techniques de rédaction et de révision.’ a match rating of 56% because half of the words are the same and they are in the same position, even though the words in common are only function words (Gow 2003).

A better way forward

- Is semantic similarity (to include similarity of words, sentences, topics, documents …) a better way forward?
- However, is it feasible to compile comparable corpora on the basis of semantic similarity?



The new Revolution in the translation industry? Next generation Translation Memory systems

Ruslan Mitkov

I like Alicante which is such an attractive and exciting place.

I love Alicante as the city is full of attractions and excitements.

I dislike Alicante which is such an unattractive and unexciting place.

Sentence A	Sentence B	STS	Edit Distance
I like Alicante which is such an attractive and exciting place.	I love Alicante as the city is full of attractions and excitements.	3	72

Sentence A	Sentence B	STS	Edit Distance
I like Alicante which is such an attractive and exciting place	I dislike Alicante which is such an unattractive and unexciting place	1	92

Moving in the right direction…

Sentence A	Sentence B	STS	Edit Distance
I like Alicante which is such an attractive and exciting place.	I love Alicante as the city is full of attractions and excitements.	3	72
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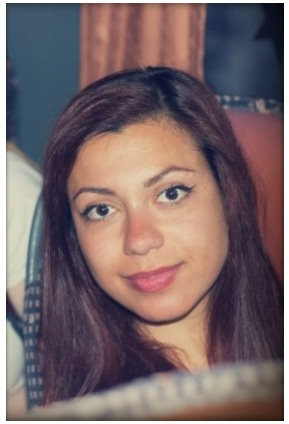
The last word

- Comparable corpora are the most realistic, versatile and valuable resource for multilingual Natural Language Processing
- Comparable corpora are the safest and most promising resource for translators too
- Comparable corpora can offer more in terms of value and can support a wider range of applications and users
- The Name of the Game in Multilingual NLP is ‘Comparable Corpora’

Acknowledgements

Yvonne Skalban



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