

# Machine Translation vs. Multilingual Approaches for Entity Linking

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## 1 What is Entity Linking?

Fig 1. Entity Linking example

Joseph/Walter “Joe” Jackson, was a steelworker at U.S. Steel. In an interview with Martin Bashir for the 2003 documentary Living with Michael Jackson, Jackson recalled that Joe often sat in a chair with a belt in his hand as he and his siblings rehearsed.

## 2 Are the Entity Linking systems targeting the same entities?

Fig 2. Example annotations produced by four EL systems: AIDA (A), Babelfy (B), DBpedia Spotlight (D) and TAGME (T).

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## 3 VoxEL: Benchmark Dataset

- Curated multilingual source: VoxEurop.eu.
- Same content in five languages.
- Sentences and annotations aligned cross-languages.
- Two versions: relaxed and strict.

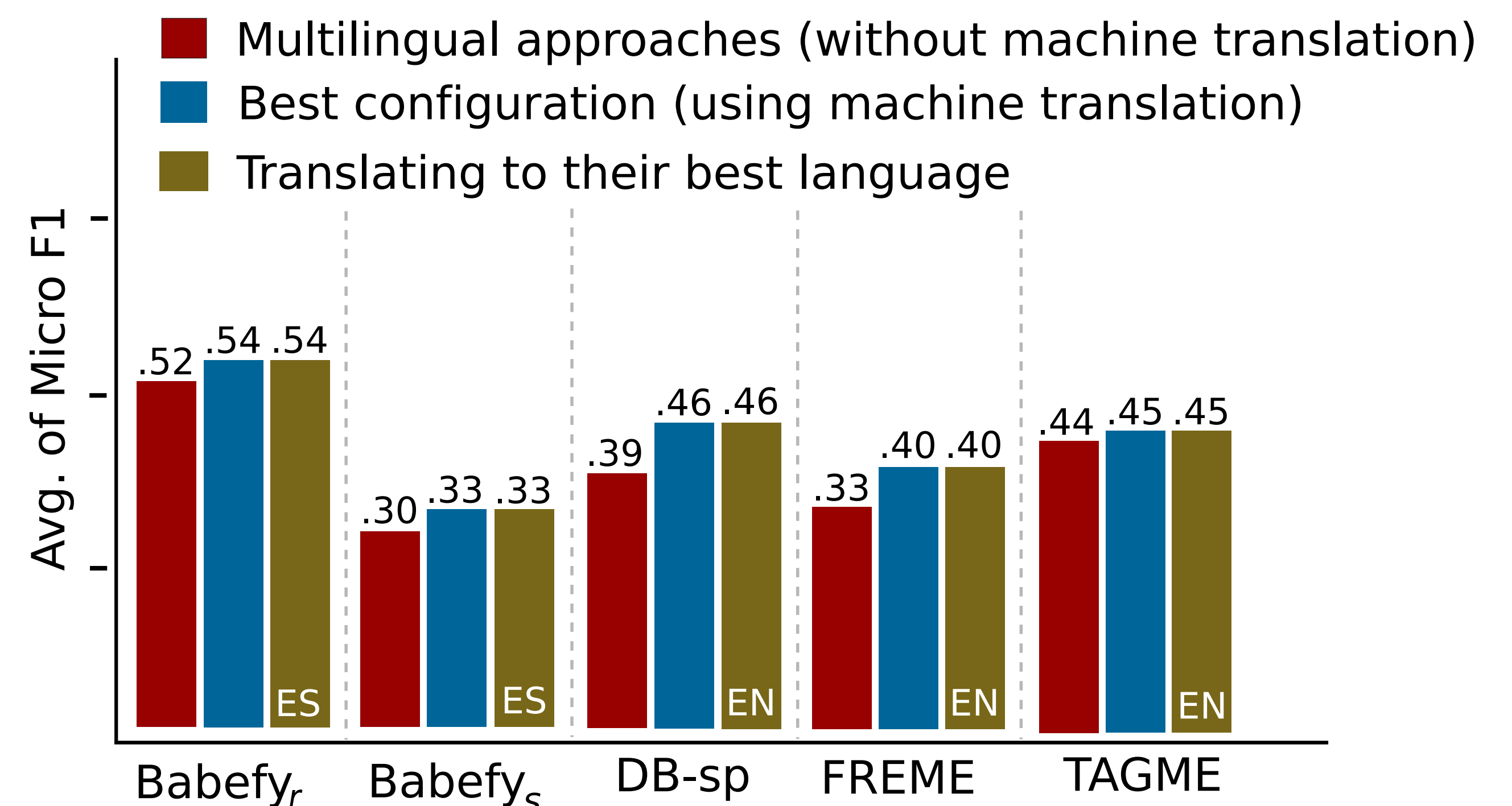
Relaxed: only contains annotations of PER, ORG and PLACES.  
Strict: allows annotations to any Wikipedia page.

## 4 Content of VoxEL

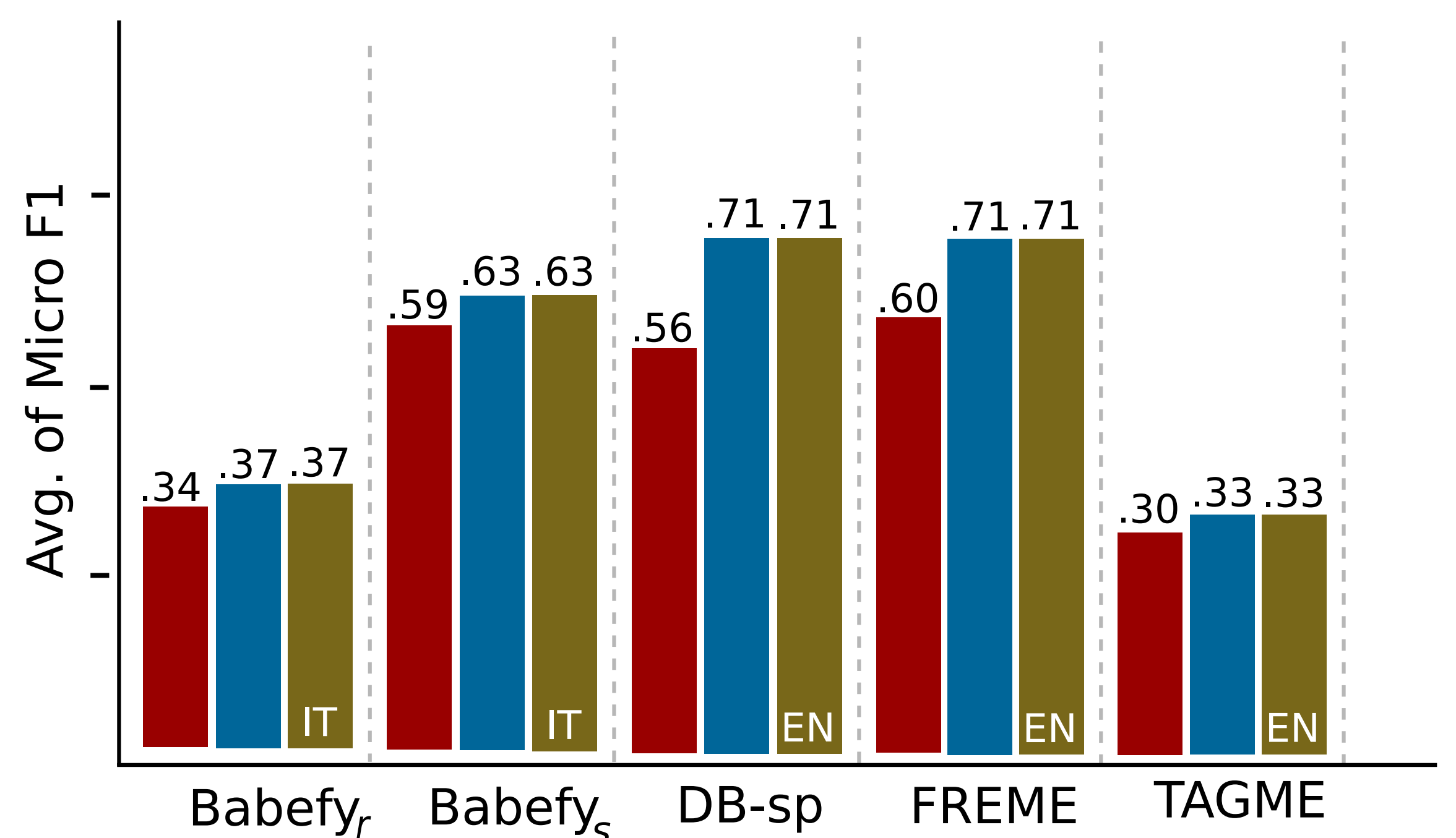
strict and relaxed versions	
five languages: DE,EN,ES,FR,IT	
one language	
$ D :15$	$ D :75$
$ S :94$	$ S :470$
$ A_s :204$	$ A_s :1020$
$ A_r :674$	$ A_r :3370$
$\times 5 =$	$\times 2 =$
	$ D :150$
	$ S :940$
	$ A :4390$

## 5 Could we not simply focus on supporting one language in the EL system and translate the input text to that language?

## 6 Plotting the averaged scores of the systems with/without machine translation.



(a) Results of the Relaxed Version of VoxEL



(b) Results of the Strict Version of VoxEL

## 7 Conclusion

- In the context of the VoxEL dataset, all evaluated systems get better results using machine translation instead of using their own multilingual models.
- Surprisingly, in this experiment Babelfy obtains its best score when it is configured in Spanish/Italian for the relaxed/strict versions of VoxEL and translating the texts into these languages. On the other hand, DBpedia Spotlight, FREME and TAGME obtain their best value when they are configured in English.