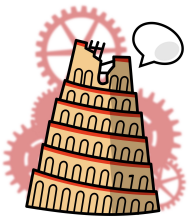
Can Cognate Prediction Be Modelled as a Low-Resource Machine Translation Task?

Clémentine Fourrier, Rachel Bawden, Benoît Sagot



INRIA (ALMAnaCH)

Aug 2021

Our task: Cognate prediction

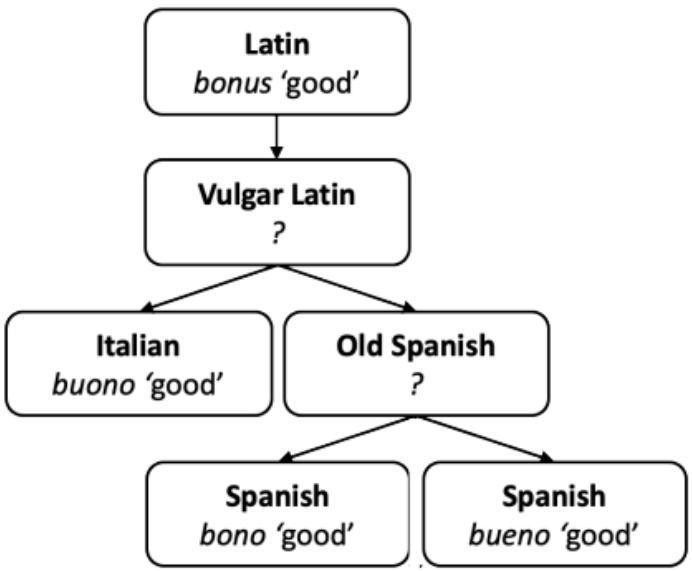
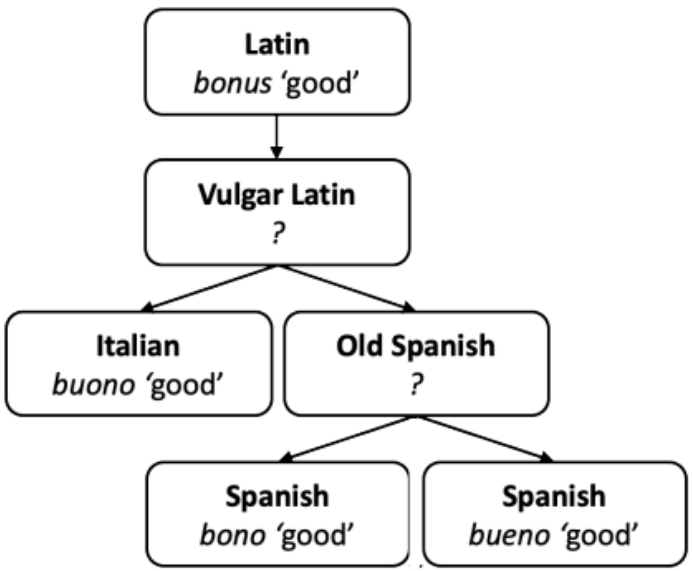


Figure 1: Cognates in our languages of interest

- **Cognates**
  Words in related languages evolved from the same ancestor

Our task: Cognate prediction



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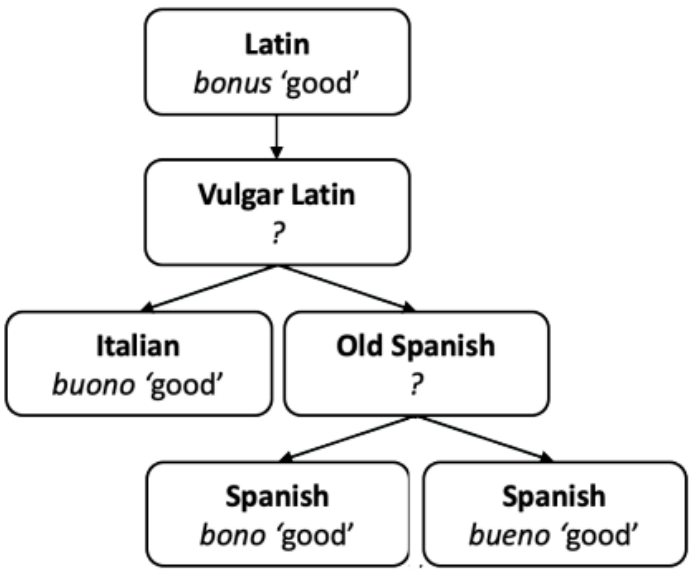

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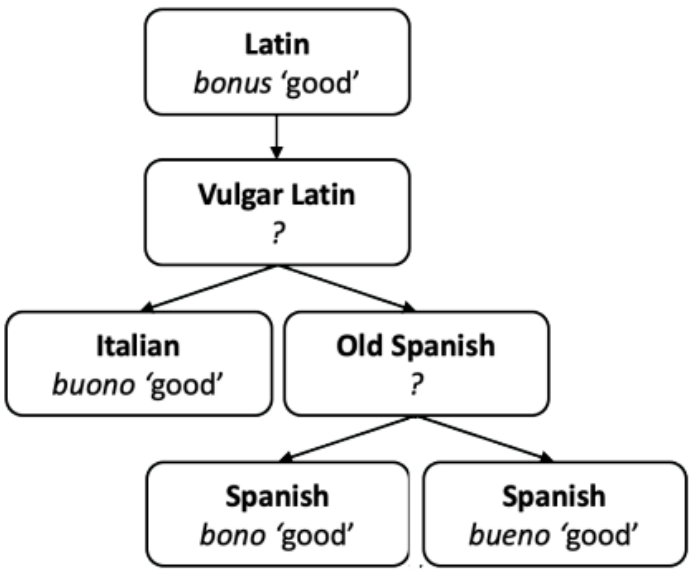

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- **Theoretical comparison**
  - Units and sample length
  - Modelled relations
  - Ambiguity management

Cognate prediction ↔ MT task?

Experiments

- Cognate data (ES-IT-LA)
- NMT (RNN, Transformers), SMT

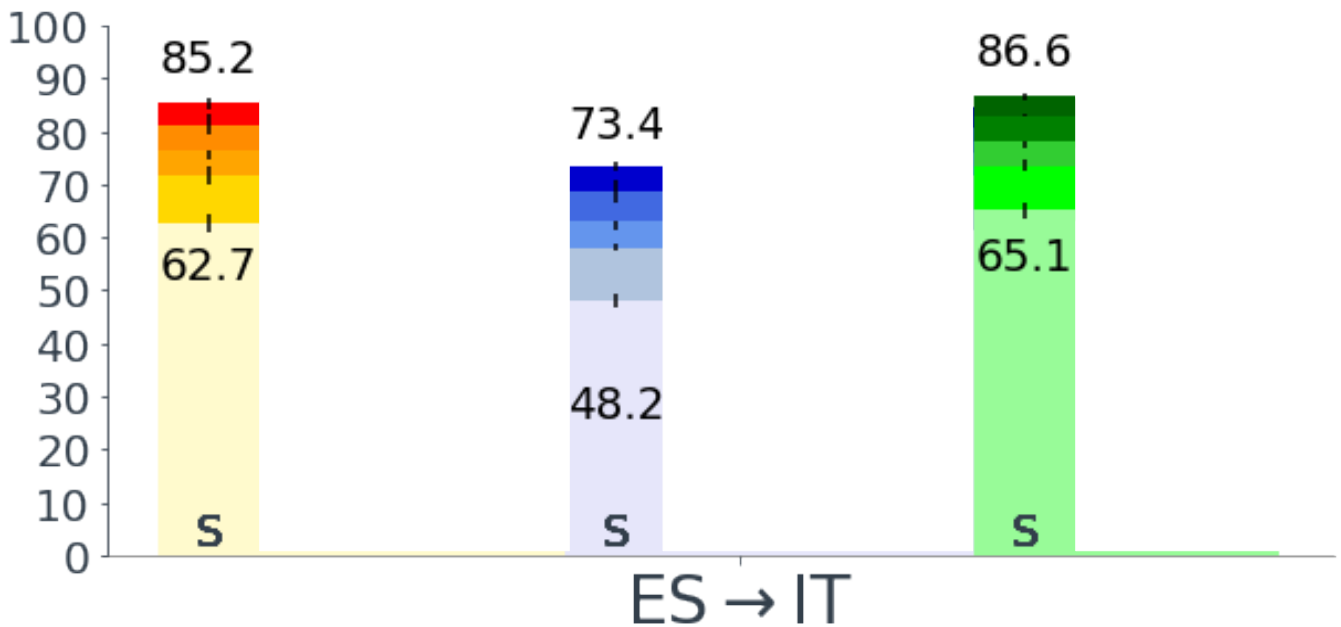

Figure 2: Results of our different setups for a language direction

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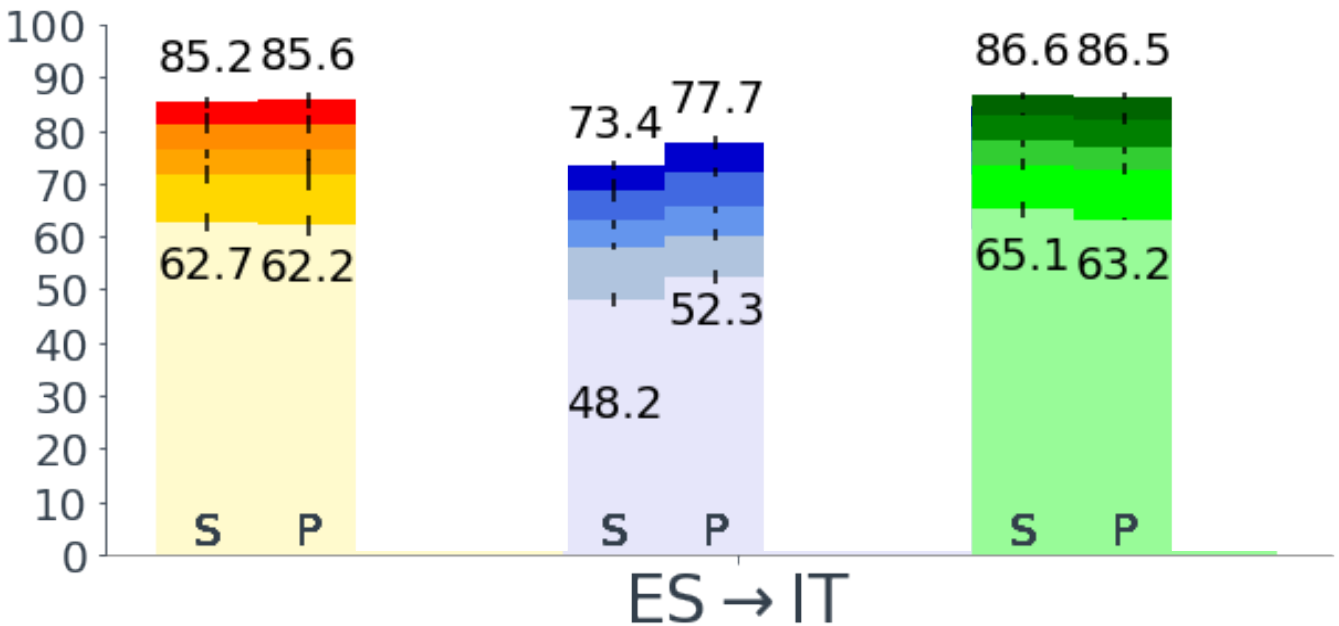
- NMT (RNN, Transformers), SMT
- Data augmentation: pretrain



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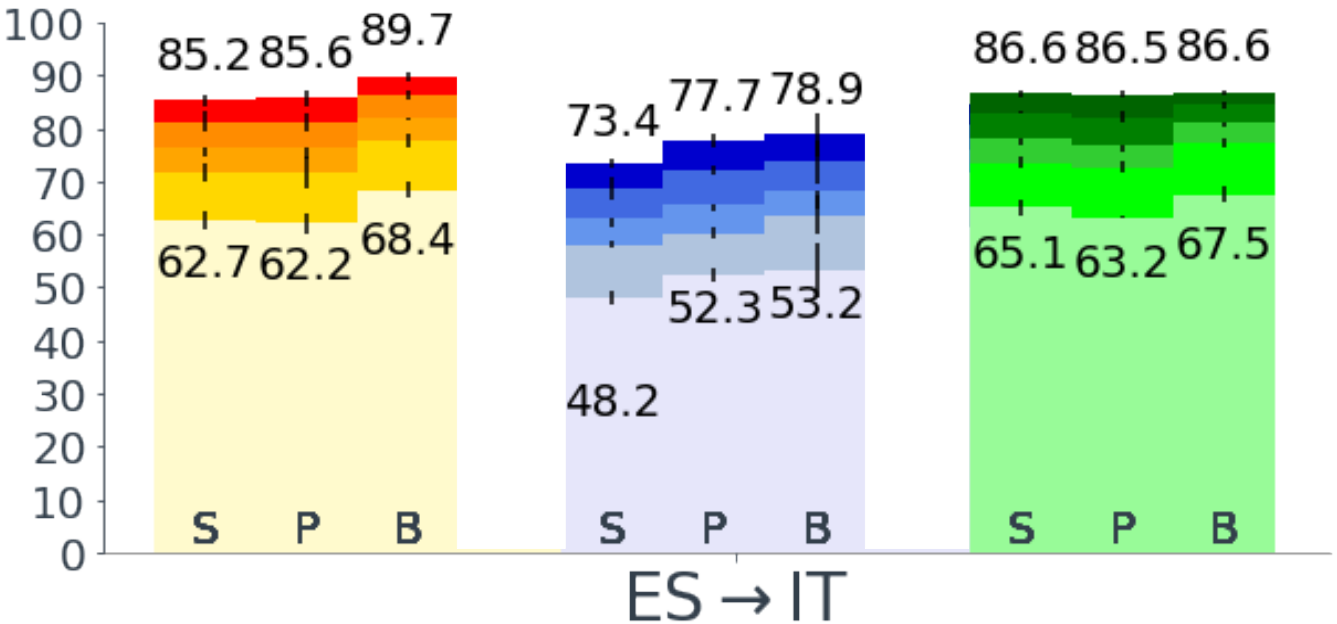

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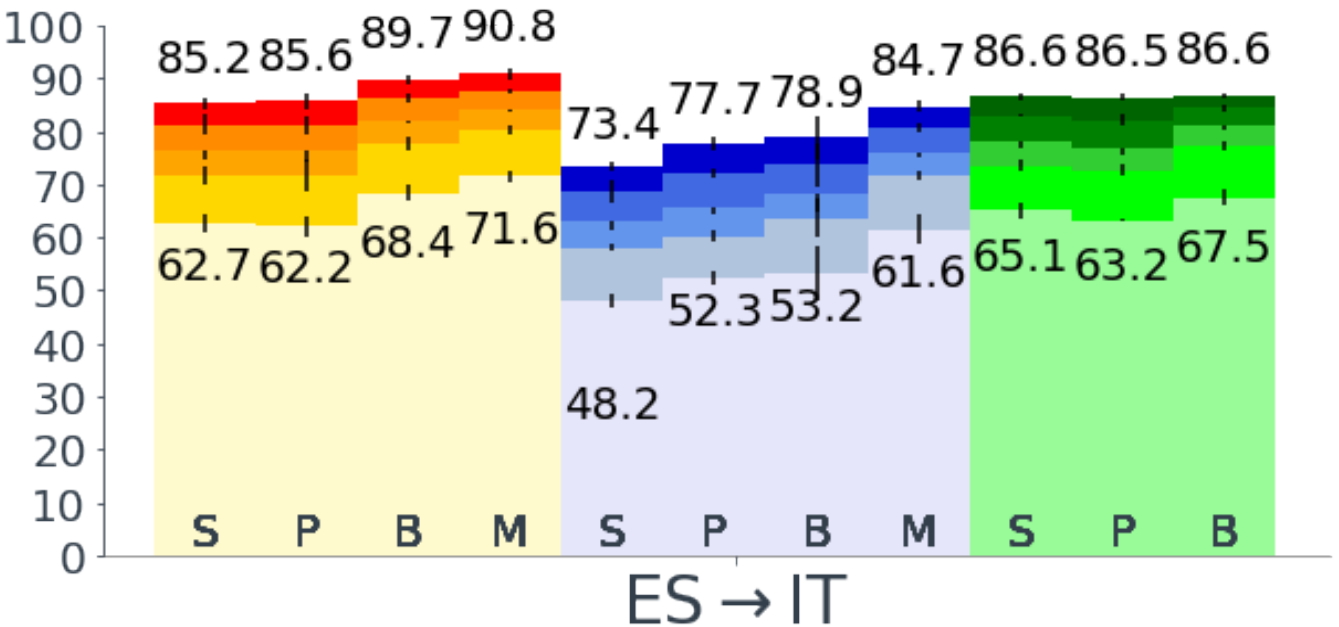

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About the methods

- SMT » NMT in low resource settings
- RNN » other methods when enough data
- Data augmentation:
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→ Cognate prediction ↔ low-resource MT to an extent (needs to be studied with its specificities).

Thank you for listening, more info in the paper!
Poster session at LChange'21
Code and data at: github.com/clefourrier/CopperMT