NATIONAL RESEARCH
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School of Foreign Languages

MACHINE TRANSLATION METHODS FOR CREATING A CORPUS OF SIMPLIFIED TEXTS

Project Proposal

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PLAN OF THE PRESENTATION

- Research Background
- Literature review
- Purpose + research gap
- Methods
- Expected outcomes

Time limit: 6-7 min

RESEARCH BACKGROUND

Sentence simplification:

They are culturally akin to the coastal peoples of Papua New Guinea.

↓

Their culture is similar to the culture of the coastal peoples of Papua New Guinea.

Key points about sentence simplification

- Can be beneficial for people with cognitive disabilities and language learners
- Can be done automatically with special tools
- Needs parallel corpora
- May benefit from machine translation

LITERATURE REVIEW

Relevant studies

- Nishihara, Kajiwara & Arase (2019). Controllable text simplification with lexical constraint loss
- Martin, Fan, de La Clergerie, Bordes & Sagot (2020). Multilingual unsupervised sentence simplification
- Coster,& Kauchak (2011). Simple English Wikipedia: a new text simplification task

Investigated issues:

- Encoder-decoder approach to the task
- Task transferring (using translation models for simplification)
- Availability of parallel corpora in English

Limitations:

- Language and task transferring for many languages, including Russian
- Creation of a high-quality parallel corpus in many languages, including Russian

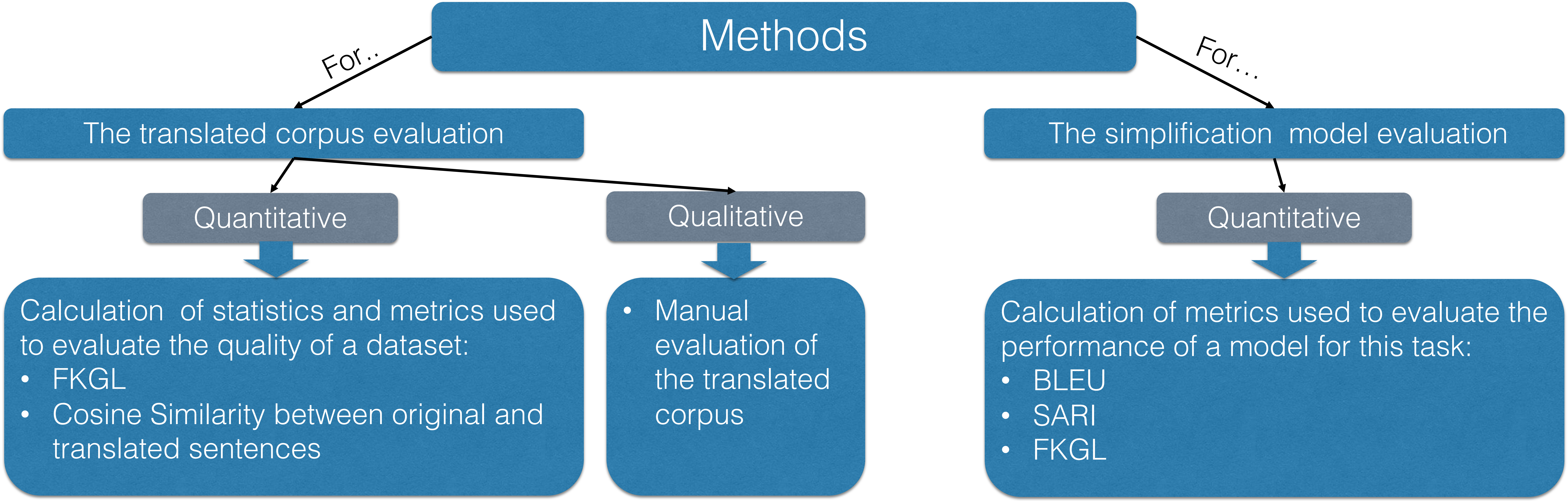
PURPOSE + RESEARCH GAP

To investigate the machine translation role in parallel corpora translation and facilitating sentence simplification for the Russian language

To address the gap

- To better understand machine translation in general and in the context of sentence simplification
- To provide a parallel simplification corpus translated to Russian

METHODS



Methods

For..

The translated corpus evaluation

Quantitative

Calculation of statistics and metrics used to evaluate the quality of a dataset:

- FKGL
- Cosine Similarity between original and translated sentences

Qualitative

- Manual evaluation of the translated corpus

For…

The simplification model evaluation

Quantitative

Calculation of metrics used to evaluate the performance of a model for this task:

- BLEU
- SARI
- FKGL

EXPECTED OUTCOMES

- Train a simplification model on both the original and the translated data and achieve a high quality of sentence simplification

- Show that the automatically translated data could be used successfully for training simplification models

- Identify common drawbacks of automatically translated data and aspects that may need additional manual correction

CONCLUSION

- Usefulness for the translation of foreign corpora and creation of original Russian parallel simplification corpora

- Contribution to the improvement of cross-lingual models for machine translation and sentence simplification

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Thank you for your attention!

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