CREAMT: Creativity and narrative engagement of literary texts translated by translators and NMT

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Abstract

We present here the EU-funded project CREAMT that seeks to understand what is meant by creativity in different translation modalities, e.g. machine translation, post-editing or professional translation. Focusing on the textual elements that determine creativity in translated literary texts and the reader experience, CREAMT uses a novel, interdisciplinary approach to assess how effective machine translation is in literary translation considering creativity in translation and the ultimate user: the reader.

1 Introduction

Research has shed some light on the usability of machine translation (MT) in literary texts (Toral, Wieling, and Way 2018), showing that MT might help literary translators when it comes to productivity. At the same time, translators' perception is that the "more creative" the literary text, the less useful MT is (Moorkens et al. 2018). But can we quantify the creativity in texts translated by humans as opposed to those produced with the aid of machines? And, since one of the aims of the translation of a literary text is to preserve the reading experience of the original, what is the reader's experience when faced with machine-translated texts? Do users exposed to different translation modalities have different reading experiences?

To provide answers to these questions, the CREAMT is articulated in two main axes with a two-year duration. The first axis proposes to

identify creative shifts (see section 2.2) while the second axis seeks to identify reader's narrative engagement and gather data on enjoyment and translation reception.

2 First axis

We translated two stories: *Murder in the Mall* by Sherwin B. Nuland (1995) was translated into Catalan for a pilot project and *2BR02B* by Kurt Vonnegut (1999) was translated into Catalan and Dutch for the main experiment.

2.1 Translation Process

The conditions human translation (HT) and post-editing (PE) were processed by two professional literary translators. To reduce the effect of the translator, each professional translated and post-edited 50% of each modality.

The MT condition was based on the output of state-of-the-art literary-adapted neural MT systems based on the transformer architecture (Vaswani et al. 2017) trained to translate from English to Catalan (Toral, Oliver, and Ribas-Bellestín 2020) and to Dutch (Toral, van Cranenburgh, and Nutters 2021). The training data did not contain the text used for the experiment nor any by these authors.

2.2 Creativity

The source text (ST) was first annotated for units of creative potential (e.g. metaphors, wordplay and puns, comparisons). A team of five professional reviewers annotated the target texts (TT) as either reproduction, omission, or creative shift (Bayer-Hohenwarter 2011). The creative shifts could be 1) modification (i.e. ST is modified for the target culture), 2) concretisation (i.e. ST is

replaced by a more concrete example in the TT) and 3) abstraction (i.e. ST examples are replaced by generic ones in the TT). The texts were also checked for acceptability (number and type of errors) with the Multidimensional Quality Metrics (MQM).[2] The number of creative shifts minus the error points divided by the number of ST words resulted in a creativity score.

3 Second Axis

An on-line questionnaire consisting of three parts was distributed to 88 Catalan participants in the pilot and 223 Catalan and Dutch participants in the main project using an on-line survey software.

3.1 Demographics and Reading Patterns

This section covers questions that serve to analyze variables affecting narrative engagement (e.g. "What genre do you usually read?").

3.2 Narrative Engagement

After reading the text (the translation modality was assigned randomly), the participants answer ten four-option questions we created to assess comprehensibility. Afterwards, they filled in a 12-item narrative engagement questionnaire (Busselle and Bilandzic 2009), e.g. "At points, I had a hard time making sense of what was going on in the story", "While reading, I found myself thinking about other things" or "I felt sorry for some of the characters in the story").

3.3 Readers' Reception Questionnaire

Participants responded to questions designed to address understanding of the text (e.g. "How easy was the text to understand?"), enjoyment (e.g. "How did you enjoy the text?"), translation assessment (e.g. "How would you like to read a text by the same author and translator?").

4 Outcomes

A pilot was run in Catalan in 2020. The results showed that HT presented a higher creativity score if compared to PE and MT. HT also ranked higher in narrative engagement, and translation reception, while PE ranked marginally higher in enjoyment. (Guerberof-Arenas and Toral 2020). The main experiment for Dutch and Catalan confirmed these results for Axis 1: HT has the highest creativity score, followed by PE, and lastly, MT, in both languages. Post-editing MT output constrains the creativity of translators,

resulting in a poorer translation often not fit for publication according to experts. (Guerberof Arenas and Toral 2022). Axis 2 was finished in March 2022 and it is under evaluation.

5 Acknowledgements

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[2] https://www.taus.net/qt21-project