Sentiment Analysis of Russian Political Discourse: Does Translation Matter?

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1 Introduction

Current trends in the automated analysis of online media texts endeavor to identify 'misinformation', or the spread of misleading information. Although emotional and subjective language can be exploited for disinformation purposes, automated analyses often struggle to classify texts on the level of discourse pragmatics. This difficulty is compounded in cross-cultural communication, where speaker intent can be misinterpreted due to the transformation of meaning that occurs in translation (Lotman, 1990). Few authors question how pragmatic systems may be encoded across languages (Comstock, 2015), and whether this will affect the interpretation of their model outputs. By comparing the emotional and subjective language employed by journalists while questioning the Russian president, this paper problematizes the assumption that a sentiment analysis performed on a translation and its source text will be equivalent.

2 Related work

The successful classification of discourse-level phenomena combines multiple linguistic features or domains (Becker et al., 2020). Co-occurring markers of polarity and subjectivity may isolate contexts that promote misinformation (Carrasco-Farré, 2022); however, analyses performed on Russian texts in translation typically fail to ascertain whether the pragmatics of the translated text more closely reflect that of the source or target language (Araujo et al., 2016). As a result, even with the numerous authors that have applied sentiment analysis techniques to misinformation in Russian discourse (Pocyte, 2019; Yaqub et al., 2020), the effect of translation on analysis outputs remains an important topic of study.

Summit	Term	Russian	English
G8	2000-2003	757	874
	2004-2007	2129	2611
	2008-2011	1412	1709
	2012-2015	611	737
G20	2000-2003	–	–
	2004-2007	–	–
	2008-2011	1598	1887
	2012-2015	2241	2474
Total		12338	14667

Table 1: The number of words collected in each summit are presented for the Russian transcripts and English translations. The translations are nearly 19% longer.

3 Methods

We investigated (i) if the total lemma count and frequency of emotional and subjective words differ by the nature of the political event (the more exclusive G8 summit versus the G20 summit); (ii) if the total lemma count and frequency differ by presidential term (2000-2019); and (iii) how the observed frequencies of lemmas produced during press conferences correspond to the expected lemma frequencies calculated from Russian-language or English-language online media sources (the National Russian Corpus and Google Ngrams).

The corpus comprises all publicly available transcripts of press conferences held by the Russian president at G8 and G20 summits from 2000-2015 (Comstock, 2023). The written transcripts were accessed at the Kremlin online press archives (http://kremlin.ru, http://en.kremlin.ru/). Questions were originally posed in Russian. A composite list of positive, negative, and subjective words was compiled from the Harvard IV-4, Loughran, McDonald, and Lexicoder sentiment dictionaries. Translation accuracy and the applicability of the composite list were confirmed by a professional Russian translator.

4 Results

We observe that the language context in which the sentiment analysis is performed does not remain consistent, even across similar political venues and short time differences.

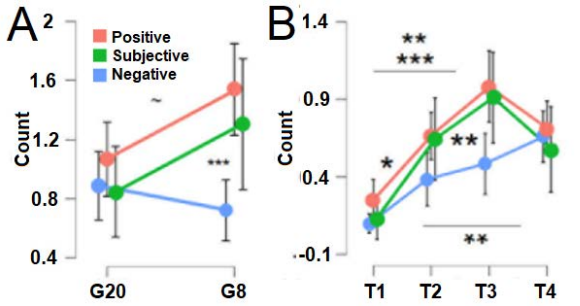

Figure 1: Sentiment analysis by summit. (A) The total lemma count differed by sentiment type and summit. (B) The total lemma count differed by presidential term.

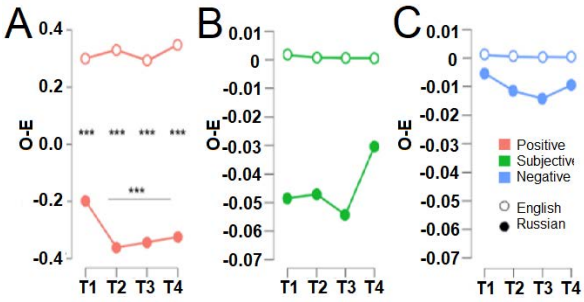

Figure 2: Sentiment analysis by sentiment type. The difference between observed and expected frequencies by (A) positive, (B) subjective, and (C) negative sentiment.

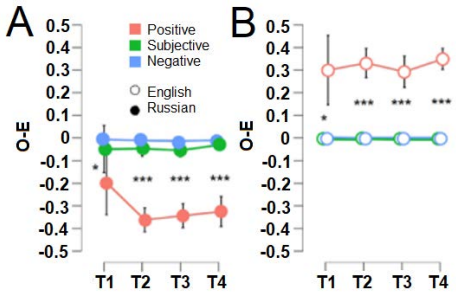

Figure 3: Sentiment analysis by language. The observed frequency of lemmas in each language relative the expected frequency of the same lemmas.

5 Discussion

The translation and original text do not produce an equivalent effect. The translation largely reproduces the expected distribution of emotional content, with a slight increase in positive items, whereas the original Russian text employs significantly less positive emotion. Subjective words trend with positive items in terms of the total count, which may reflect general pragmatic norms to upgrade positive assessments and minimize negative ones. Overall, the translator used a smaller range of words than the Russian text, accommodating general language norms, whereas the Russian text remains more specific and illustrates a wider range of lemmas. This is generally considered to be the advantage of utilizing a human translator: the text reads more naturally because it conforms to target language norms. However, we see that this practice also changes the emotional tone of the text.

6 Conclusion and limitations

The sentiment analyses illustrate that classification outputs, like reader perceptions of a translated text, may differ notably. We anticipate greater significance will appear with a more robust exclusion of outliers. Analysis of the effect of extreme outliers by language type is a future direction of research.

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