

A good review of a bad book or a bad review of a good book: Alternating sentiment in AI translation of user-generated content

The study concerns English and Polish AI translations of user-generated content (UGC) namely book reviews posted on Goodreads and hotel reviews posted on Booking.com. As UGC is a central concept in social media (Santos 2021), it plays an important role in decision-making of purchasing goods or services (Wąsowicz-Zaborek 2023; Babić Rosario et al. 2016). What is more, UGC produced by everyday users is more trustworthy than traditional marketing content (Younis 2025). Translation accuracy is also vital for the translated versions to exert a similar emotional response among the target recipients as the original. However, with the development of AI, sentiment may be distorted or manipulated in the translation process.

The goal of the study was to investigate to what extent sentiment in translated UGC can be predicted based on the features of the original text, whether prompts designed to alter the original sentiment affect the predictability of the target sentiment and if the model used for the translation is an important variable. Four corpora were compiled for this study: two with English as the source language and two with Polish as the source language. The compiled hotel reviews focus on hotels located in Poland and the United Kingdom. The book reviews consist of reviews of crime novels written by British and American authors and by Polish authors. All reviews were translated using Claude Opus 4.5 and Gemini 3 Pro with three prompts: neutral, maintaining the sentiment of the source; negative, maintaining the meaning of the source with more negative sentiment than the neutral translation; and positive, maintaining the meaning of the source with more positive sentiment than the neutral translation.

Sentiment analysis using the GPT 4o-mini model by Open AI was performed to estimate the sentiment of the source and the target text. It was followed by statistical analysis with a random forest classification model aiming to test the prediction accuracy of the target text sentiment on the datasets generated with either neutral, negative or positive prompts. Results show that models predicting target text sentiment in the sentiment-altering conditions are consistently less accurate than in the neutral prompting condition. At the same time, in each of the classification models source sentiment, rating, and review length turn out to be more crucial in the classification task than language direction or the AI tool used.

The outcomes show that sentiment-altering prompts can weaken the alignment between source-text and target-text sentiment. Interestingly, both tested AI tools offer similar results even though they were developed independently, trained on different data and built on different architectures. Additionally, since language direction and specific AI tools have a limited impact on sentiment prediction, models may generalise well across languages. Our results suggest, among others, that AI-powered translation QA systems could help ensure consistency in sentiment between source texts and translations.

Word count: 465

Keywords: AI translation, sentiment analysis, user-generated content, manipulated translation

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