

Transitude: Machine Translation on Social Media: MT as a potential tool for opinion (mis)formation

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Abstract

Misinformation on social media is a concern for content creators, consumers and regulators alike. Transitude looks at misinformation generated by machine translation (MT) through distortion of the intention and sentiment of text. It is the first study of MT's impact on the formation of users' views of society through refugees in Ireland. It extends current MT evaluation methods with a new quality evaluation framework, producing the first dataset annotated for information distortion. It provides insights into the risks of relying on MT, with recommendations for users, developers, and policymakers.

1 Previous Research

The spread of misinformation on social media has attracted collective efforts nationally and internationally. For example, the Irish government proposed the 2020 Online Safety and Media Regulation Bill to regulate online activities and tackle harmful content. However, such initiatives focus on source texts, overlooking machine translation (MT) use, which is embedded into social media platforms. MT as a translation tool carries risks in terms of misinformation as it can sometimes deliver misleading translation where the meaning becomes different from what was intended, leading to major consequences. For example, Facebook's MT once provided 'attack them' as a translation for 'good morning', prompting the Israeli

police to arrest the Palestinian author of the message.¹ Highlighting the need to consider MT and its implications is vital for any multilingual/multicultural society. Recent humanitarian crises such as the Syrian refugee crisis emphasised the importance of communication and the consequences of misinformation. These populations rely on MT to stay informed (Marlowe, 2020). Commercial MT systems are not trained on conversational user-generated content (UGC), which is mostly written in colloquial, abbreviated language, using symbols and hashtags (Al Sharou et al., 2021). Previous research revealed that MT tends to generate critical errors when translating UGC (Al Sharou and Specia, 2022). Social media posts often contain political or social opinions, expressed with a specific purpose (Xiong and Fiu, 2014). Such content depends heavily on persuasive language to influence opinions, and employs irony, sarcasm and/or metaphor. However, there is no guarantee that MT preserves the intention and sentiment of the original. As a result, readers of the translation may form a different opinion to the one intended. Transitude's research objectives (RO) are: 1. Provide an account of MT's role in information sharing on social media. 2. Estimate MT's role in forming asylum seekers and refugees' views of, and attitudes towards, a new society. 3. Propose recommendations on how the risks of using MT can be mitigated.

2 Research Design and Methodology

Transitude employs analytical frameworks, drawing on Translation Studies models (text in context,

¹ <https://www.theguardian.com/technology/2017/oct/24/facebook-palestine-israel-translates-good-morning-attack-them-arrest>

focusing on intentionality and sentiment) (Hatim, 1997; Van Dijk, 1998) that are typically used to judge human translation, and Natural Language Processing techniques (keyword extraction and automatic sentiment analysis). Target participants are Arabic-speaking Syrian and Iraqi asylum seekers and refugees (AS&Rs) living in Ireland.

2.1 MT use on social media

A review of how MT is documented and used on social media was conducted and presented in Vieira and Al Sharou (forthcoming). Preliminary content analysis of MT on the X platform was also carried out on a set of posts/tweets (4120), collected using the NewsWhip Spike platform. From this dataset, 500 tweets with a focus on MT were manually identified and categorised as Neutral, Positive or Negative. Around half of the tweets (221) showed that users are not satisfied with its quality with only 68 tweets revealing a positive perception of MT. MT is utilised for translating restaurant signs, news articles, menus, and songs and employed across various contexts including journalism, medical, and refugee assistance. Google Translate is the most commonly used, followed by DeepL and ChatGPT. Future work will include a survey to explore whether Arabic-speaking AS&Rs use MT on social media.

2.2 MT's role in forming AS&Rs' attitudes

RO2 will involve two stages of analysis:

- **Content-oriented quality assessment:** a source-target type of linguistic analysis will be used to identify linguistic changes in the message caused by the MT to show its role in forming AS&Rs' attitudes. Opinion-based posts with a focus on immigration, racism and discrimination, and political parties will be selected.
- **Survey 2:** The project will carry out a target-language quality assessment of MT's impact. Sets of opinion-based posts (30 posts in total) will be selected to examine the opinions formed by AS&Rs after reading the machine-translated version of the posts. Machine distortions that could have altered their interpretation will be examined.

2.3 MT risks and mitigations

To meet RO3, 30-minute interviews will be conducted to further understand AS&Rs' experience with MT and how it affects their integration into

society. The interviews will address the topic from a socio-technical perspective and will consider policy options to address MT's impact on users and society. This in turn could influence Ireland's future policies to reduce online misinformation. Guidance for users to avoid misunderstandings due to MT will be based on MT literacy framework (Bowker and Buitrago-Ciro, 2019).

Acknowledgment

Transitude is a two-year project (Dec 2023 – Nov 2025), funded by the Irish Research Council as part of the GOI Post-doctoral Fellowship scheme. It is led by Dr Khetam Al Sharou and mentored by Dr Joss Moorkens, School of Applied Language and Intercultural Studies (SALIS) at DCU, Ireland.

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