MTxGames: Machine Translation Post-Editing in Video Game Translation – Findings on User Experience and Preliminary Results on Productivity

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Abstract

MTxGames is a doctoral research project examining three different translation modes with varying degrees of machine translation post-editing when translating video game texts. For realistic experimental conditions, data elicitation took place at the workplaces of professional game translators. In a mixed-methods approach, quantitative data was elicited through keylogging, eyetracking, error annotation, questionnaires as well as qualitative data through interviews. Aspects to be analyzed are translation productivity, cognitive effort, translation quality, and translators' user experience.

1 Introduction

Reports from the video game localization industry suggest that machine translation post-editing (MTPE) is increasing in demand, with game translation buyers hoping to reduce translation time and/or costs. However, there is hardly any research that could provide evidence to base this practice on. Therefore, the MTxGames project aims to shed light on the MTPE process of professional game translators when translating video games. Translators performed three different translation tasks over the course of one day: translation from scratch, static post-editing (PE), and flexible PE. Data gathered during this study allow for analyzing translation productivity, translation cognitive effort, and user experience. At the current stage of analysis, preliminary results on productivity and final results on user experience are available.

The research questions and design of this study were informed by MTPE studies on informative

text types as well as from creative fields such as literary translation and from multimodal fields such as subtitling. While increases in productivity have been reported, they do not necessarily happen for all translators and show high variability (Terribile, 2024). In creative fields such as literary translation, productivity can even be decreased (Guerberof-Arenas and Toral, 2022). With contradictory results on productivity between studies with informative texts and with literary texts, the question remains how productivity is affected when translating video games by post-editing MT output. Video games are complex entities and translating them combines aspects of software localization, technical translation, creative translation, and multimodal translation (Bernal-Merino, 2015). According to several manifestos published by associations representing game translators, among other types of creative translators, translators oppose the use of MT and the MTPE practice (e.g., Deryagin et al., 2021). To include translators' perspectives, the experience of the translator as user of MT is of interest in this study. A recent study on MT user experience (Briva-Iglesias, 2024) showed higher user experience when MT was incorporated into the translation production process in another form than doing static PE. Also, Hansen and Houlmont (2022) suggest using MT as additional resource to a translation memory (TM), instead of for MTPE, to not constrain creativity when translating games. Therefore, this study compares translation from scratch with two different types of MTPE.

2 The Study

The study was conducted in collaboration with the game localization service provider Native Prime. Native Prime recruited and compensated the study participants (14 freelance game translators and 1 in-house game localization project manager), provided the game texts, access to the MT system (ModernMT), the TM and the terminology

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database (TB) from the original game localization project, and set up the project in the translation environment system (memoQ TMS 11.2).

Data were generated at participants' home offices between December 2024 and January 2025. Tasks were carried out on a laptop and a display provided by the researcher. Else, participants used their own equipment (keyboard, mouse, etc.). This setup ensured participants worked in their usual environment instead of in a laboratory and at the same time protected their privacy and data security as no software was installed on participants' PCs.

An eye-tracker (Tobii Pro X3-120 plus EPU) logged the time taken for the translation tasks, keystrokes, mouse actions, and gaze data, and captured screen recordings. Moreover, translations after the three tasks were saved for a subsequent error analysis. Participants replied to a pre-task questionnaire on demographic data and previous experience with MT and PE. After each task, they filled out a short user experience questionnaire (Laugwitz et al., 2008) with 26 opposing adjective pairs. Finally, a short interview discussed the overall experience with all three tasks.

Participants translated 3 texts (ca. 830 words each) that were compiled by selecting similar strings from the same game. These 3 texts were translated from English into French, Italian, German, or Spanish under 3 different conditions: 1) translation from scratch with a TM and a TB available as resources; 2) static PE of the text pretranslated by ModernMT, with TM and TB available; 3) flexible PE, a combination of translation from scratch and static PE, where the target segments were empty, but ModernMT suggestions were available as a resource, additionally to TM and TB. Conditions and texts were rotated among participants to account for learning and fatigue effects. Furthermore, participants were divided into two groups, generic MT and domain-adapted MT. For generic MT, ModernMT was used as is. For domain-adapted MT, a TM with around 74,000 words of the game under translation was added to ModernMT.

3 Results

Results show a poor user experience with static PE, especially when combined with generic MT, a neutral experience with flexible PE that leans toward positive when combined with domain-adapted MT, and a markedly positive experience with translation from scratch (Brenner and

Othlinghaus-Wulhorst, forthcoming). Regarding productivity, results are preliminary. For 5 participants translation from scratch seems to be the fastest, for another 5 flexible PE, and for 2 the fastest seems to be static PE.

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