

# English-Turkish Literary Translation Through Human-Machine Interaction

Mehmet Şahin  
Sabri Gürses



Mehmet Şahin  
Boğaziçi University, Department  
of Translation and Interpreting  
Studies  
mehmet.sahin5@boun.edu.tr;  
ORCID:  
[0000-0002-9077-1241](https://orcid.org/0000-0002-9077-1241)



Sabri Gürses  
Post-doctoral Researcher  
Boğaziçi University, Department  
of Translation and Interpreting  
Studies  
sgurses@gmail.com;  
ORCID:  
[0000-0002-6452-5426](https://orcid.org/0000-0002-6452-5426)

## Abstract

This article investigates perceptions of technology-mediated translations of literary texts by two groups: translation students and professional literary translators. The participants post-edited an excerpt from a classic Dickens novel into Turkish using a machine translation (MT) system of their choice. The analysis of the post-edited texts, participants' answers to survey questions, and interviews with professional translators suggest that MT is currently a long way from being an essential part of any literary translation practice for the English-Turkish language pair. Translators' interactions with MT and negative attitudes toward it may change in a positive direction as MT improves and translation practice evolves.

**Keywords:** literary translation; machine translation; post-editing; human-computer interaction; translation technology

## Resum

Aquest article investiga la percepció de la traducció de textos literaris per mitjà de la tecnologia des de dues perspectives: d'una banda, la d'estudiants de traducció i, d'altra, la de traductors literaris professionals. Els participants han triat un sistema de traducció automàtica (TA), amb el qual han traduït un fragment d'una novel·la clàssica de Dickens al turc. L'anàlisi dels textos posteditats, les respostes dels participants a les preguntes de l'enquesta i les entrevistes amb traductors professionals suggereixen que, actualment, la TA està lluny de ser una part essencial de la traducció literària per a la combinació lingüística anglès-turc. Les interaccions dels traductors amb la TA i les reaccions negatives que han mostrat envers aquest sistema podrien prendre una deriva més positiva si la TA millora i la pràctica de la traducció evoluciona.

**Paraules clau:** traducció literària, traducció automàtica, postedició, interacció persona-ordinador, tecnologies de la traducció



## Resumen

El presente artículo investiga cómo perciben la traducción asistida por ordenador de textos literarios un grupo de estudiantes de traducción y otro de traductores literarios profesionales. Los participantes de nuestro experimento poseitaron la traducción al turco de un pasaje de una clásica novela de Dickens realizada con un sistema de traducción automática (TA) de su elección. El análisis de los textos poseídos, las respuestas de los participantes al cuestionario y las entrevistas con los traductores profesionales indican que, actualmente, la TA dista mucho de ser una parte esencial de cualquier práctica de traducción literaria en la combinación lingüística inglés-turco. Con la mejora de la TA y la evolución de las prácticas de traducción, la interacción de los traductores con la TA y su predisposición negativa hacia ella podrían dar un giro.

**Palabras clave:** traducción literaria, traducción automática, posesión, interacción persona-ordenador, tecnologías de la traducción

## 1. Introduction

Literary translators have hitherto been relatively unharmed by the staggering developments in translation technologies, especially machine translation (MT). We are now witnessing more and more discussions on the possibilities of MT in the translation of texts that require creativity, a concept that is difficult to define due to either personal, cultural, or cognitive factors (Malmkjær, 2019). Yet there are some commonly agreed upon characteristics of creativity in translation, such as originality. As Delisle (1988: 37) states, “The most distinctive trait of human translation is its creativity, for translation involves choices that are not determined by pre-set rules.”

The technologies used in literary translation vary according to translators’ needs and objectives, and translators use technology at different levels. While the basic workflow concerned pen and paper about a century ago, this method has become obsolete with the advent of typewriters and computers. The first level of involvement with modern technology entails using a word processor, online dictionaries, and search engines. With the rapid spread of Web 2.0 applications, social media has become a new gateway for learning new information and for collaborating with colleagues around the world. Literary translators may also use these tools in the translation process to share ideas and promote their work, which can be considered the second level of involvement. Stylistic preferences may require in-depth analysis of source text authors and norms, and perhaps research on the target culture and its conventions. In such contexts, with the ever-increasing volume and availability of texts in electronic format, corpora can benefit translators, as they can shed light on characteristics of language and culture in a specific period of time, register, or mode (Laviosa, 2002). Incorporating corpus-based inquiries into translation work can be considered the third level of involvement. Translation

memories are popular in technical translation, but in literary texts, where more originality is sought and less repetition is expected, a translation memory is usually expected to contribute negligibly to the task. Terminology management systems, generally embedded in digital workspaces along with translation memory systems, are also believed to have little relevance for literary translation tasks. Yet recently, we see examples of these two tools being used in literary translation (see, for example, Rothwell, 2018; Horenberg, 2019; Zakrajšek, 2020). They help ensure consistency in both individual and collaborative translations, provide a linear text structure to minimize any omissions, and facilitate the monitoring of the workflow (e.g., word count, deadlines, publisher requirements, list of Do Not Translate words). We can refer to the addition of such tools to the workflow as the fourth level of involvement with technology for literary translators.

Finally, using the latest neural networks, MT systems produce more accurate results that sometimes amaze general users with their fluency. The affordances of MT in the translation of creative texts have been investigated for a variety of language pairs. Academic events such as the workshops on computer-assisted literary translation at the University of Swansea<sup>1</sup> and the workshop entitled Qualities of Literary Machine Translation at MT Summit 2019<sup>2</sup> were organized to present the results of empirical research and to exchange ideas on the topic. There is a continuing interest in research on the use of MT for creative texts on the part of both translation scholars and translation professionals, as evidenced by the panel on creative texts, technology and ecology at the 7th Conference of the International Association for Translation and Intercultural Studies in 2021. A recent special issue of *Counterpoint* (2020) entitled “Machine Translation and Literature” is another indicator of the growing interest in using technology in literary translation. Hadley (2020: 16-18) lists several benefits that technology can offer to literary translators, yet he concludes that “[a]ny serious challenge to human literary translators is still a long way off, but we are already starting to see tools being developed that will assist literary translators in their work. In the same issue of *Counterpoint*, however, the European Council of Literary Translators' Associations (CEATL) president, Morten Visby (2020: 28), warns that “[t]his is not the time to feel safe in the belief that the human brain will always, in the end, be superior to stupid machines.”

In the present study, we look at the interaction between MT and novice and professional translators in the process of a literary translation task. We were particularly interested in their views about whether their current level of involvement with technology through post-editing machine translation (PEMT) constitutes a component of their translation practice. Olohan (2021a) examines three components of the PEMT-related evolution of translation practice: materials, competences, and meanings. In her book on practice theory, Olohan (2021b: 26) describes these components as follows:

Materials include things, tools and technologies, but also the body. Competence denotes understandings of various forms, including skills and know-how. Meaning comprises symbolic meanings, ideas and aspiration, bringing together what Reckwitz refers to as mental activities, emotion and motivational knowledge. These elements configure each other and the practices in which they participate.

<sup>1</sup> See <https://modernlanguages.sas.ac.uk/events/event/19132>. These workshops led to a three-day conference in 2021: <https://calt2021conference.wordpress.com/>

<sup>2</sup> <https://www.aclweb.org/anthology/W19-7300/>

Having conducted an experiment with novice and professional translators, we delineate how these three components – meanings in particular – unfold in the case of English–Turkish literary translation practice. Olohan (2021b: 73), citing Shove et al. (2012), defines meaning as “social and symbolic significance of participation [in a practice] at any one moment.” In the case of PEMT, the triadic combination of translation memory systems, terminology management systems, and MT systems are the materials that a translator is to work with. To be able to handle the text, which is presented in segments as fragmented pieces, the translator needs to have a solid understanding of the capabilities and risks that such materials pose, that is, they need to be competent in post-editing. The overall attitude towards an interaction with the materials, including the text generated from them for further human processing, is also central to PEMT practice, given that it can have implications for the translator’s performance and the level of attachment to professional practices.

### *1.1 Interaction between translators and technology*

The interaction of translators with technology has been investigated extensively in the last decade. Olohan (2011: 346) approached this interaction through a sociological lens and examined TM use in relation to the concept of “agency” as she explored “the dialectic of resistance and accommodation which emerges in TM use as the technological and the social interactively stabilize one another.” O’Brien (2012: 119) looked at translator–computer interaction from a cognitive ergonomic perspective and argued that “there is no one definition of creativity and quality and that editing, revising, or post-editing are valid skills to have alongside translation.” Differences between novice and professional translators in terms of their attitude to post-editing, rates of productivity, edit distance, and engagement with the research study in which they were participating, were investigated by Moorkens and O’Brien (2015) for the English-German language pair. Their study showed that novice translators were more engaged with the research and displayed a more positive attitude.

Şahin (2016) conducted a study with 81 professional translators with various specializations in translation education and the translation market. The aim was to identify their needs and demands in terms of translation technologies. About one fourth of the participants reported using MT every day, despite the fact that they found the output quality quite poor (statistical MT paradigm). The same participants stated that MT should not be integrated into the translation process for literary texts. In an EU context, Cadwell et al. (2016: 237) focused on MT adoption and non-adoption in a group of DGT (Directorate-General for Translation) translators and identified the human factors behind their decisions. The adopters viewed the technology as a means to overcome physical and cognitive limitations. The non-adopters, however, held various beliefs about MT that led them *not* to adopt MT. Those included the following:

- MT output quality is unsatisfactory.
- MT has a negative effect on a translator’s skills.
- Humans are being replaced by machines.
- Using MT causes translators to make errors.

- Translators need to take extra care when using MT.
- Using MT devalues a translator's work and reduces their creativity.
- MT does not protect confidentiality.

Researching the translation process, Bundgaard, Christensen, and Schjoldager (2016) collected data from screenshots, keystroke logs, observations, retrospective interviews and a post-experiment questionnaire to investigate translator-computer interaction in a company setting. The research provided empirical evidence about “how the CAT tool restrains and aids the translation process” (125). They found that, although the translators benefited from the TM system assisted by MT, the translation technology hindered the translation workflow as the translators considered its segmented structure a restraint. Ruokonen and Koskinen (2017), in a study based on professional translators' and translation students' narratives of their interaction with technology, investigated the issue from a sociological point of view. Like Olohan (2011: 321), they highlighted the importance of emotions in the interaction between humans and technology, which can reveal itself as resistance and accommodation dialectically on a day-to-day basis. They concluded that machinic agency is generally not welcomed by translators and underlined the complexity of the interaction, noting that negative feelings would be bound to create positive effects. Balashov (2020: 349) views translators' interaction with computers as part of an extended cognitive system that sometimes involves “other human translators and editors.” He draws attention to the psycholinguistic and neuroscientific aspects of the translation process and presents the highly distributed nature of translator-computer interaction through real-life scenarios.

## 1.2 Computer-aided literary translation

We are witnessing more and more studies on the use of MT for translating literary texts. Besacier (2014), for example, explores how a translation workflow that includes post-editing (PE) MT output that is produced by a domain-adapted MT model can contribute to the translation of literary texts which have not yet been translated into a particular language. Şahin and Dungan (2014) investigated the use of SMT for different text genres, including literary texts, in the English–Turkish language pair. The quality of the freely available online MT output was quite low in their experiments, and student translators reported a negative attitude toward using MT in the translation process, especially for literary texts. Toral and Way (2015) explored the use of literary-adapted statistical machine translation (SMT) systems for translating a literary text, *El Prisionero del Cielo* (Ruiz Zafón, 2011), from Spanish to Catalan, two closely-related languages. Arguing that MT can reduce translation costs, they believe that such a reduction would increase the number of published translations. This, as Toral and Way (2015: 247) maintain, would benefit “(1) readers, who will be able to access a broader selection of translated books in their native language, and (2) authors, who will reach readers from other linguistic communities.” In the same study, the researchers examine two translations of the novel *L'Étranger* (Camus, 1942), comparing the 2013 Google Translate translation into English presented in a study by Jones and Irvine (2013) and the 2015 one. They report an improvement in SMT results in the French–English language pair.

With the emergence of neural machine translation (NMT) models, better results were expected in literary translation. To investigate the post-editing of literary texts, Moorkens et al. (2018: 240) conducted an experiment with six translators with an average of 10 years' experience in professional literary translation. Data was collected from pre- and post-task questionnaires and from debriefing conversations with the translators. The researchers trained two domain-adapted MT systems for novels – phrase-based SMT and NMT models – and measured the post-editing effort temporally in three different modes: SMT PE, NMT PE, and translating from scratch. They reported that “all participants prefer to translate from scratch, mostly due to the freedom to be creative without the constraints of segment-level segmentation, those with less experience find the MT suggestions useful.”

Creativity in translation is often understood as novel and appropriate textual solutions (Beylard-Ozeroff et al., 1998; Summers, 2020; Rojo, 2017) or as linguistic and literary creativity (Boase-Beier, 2011; Malmkjær, 2019). Creativity is often seen as specific to the human species. With translation technologies advancing all the time, attempts to achieve human parity soar, the border between artificial and human intelligence is blurred and creativity is redefined as a co-working process. Youdale (2019: 24-25) argues that “the use of CL [corpus linguistics] and text-visualisation in CDR [close and distant reading] is consciously designed to support and enhance the literary translator's creativity by maximising the amount of stylistic (and frequently narratological) information they have at their disposal.” Creativity, an integral part of literary translation, has been the subject of a number of studies involving NMT. Şahin and Gürses (2019), for example, investigated whether literary retranslations performed with the help of freely available online MT would lead to creative solutions. The participants were 21 fourth-year Translation and Interpreting Studies (TIS) students who were asked to translate two excerpts from *Robinson Crusoe* into Turkish – one with and one without the help of an online MT service (Google Translate in NMT mode). Based on the qualitative analysis of solutions produced for 252 translation units (segments requiring creative solutions), it was concluded that the use of MT likely hinders creativity for novice translators for the English–Turkish language pair.

In another recent study on the topic, Guerberof Arenas and Toral (2020: 10-23) investigated the impact of post-editing and machine translation on creativity and readability. A total of 88 participants, all native speakers of Catalan, evaluated the acceptability of the three translation modalities, namely HT (human translation), MTPE, and MT. Forty-eight units classified as “creative” (sentences that “either contain creative elements or that required creative solutions in the translation” based on reproduction and creative shifts, i.e., abstraction, modification, and concretization) were examined in the study. The researchers developed a creativity scale, and the creativity scores were 68.77% for HT, 58.52% for MTPE, and 11.43% for MT. Reading experiences of 88 readers in the three modalities were calculated on the basis of narrative engagement, enjoyment and translation reception. No statistically significant difference in terms of reading experience was found between HT and MTPE. Although MT received the lowest scores in terms of engagement, enjoyment and translation reception, there was no statistically significant difference either across the modalities when it comes to attentional focus,



emotional engagement and narrative presence. Guerberof Arenas and Toral (2020), however, found that “professional translators, by providing solutions that are both novel and acceptable, add the creativity factor that MT is lacking at present.”

In an article that elaborates on concepts such as the translator’s style and voice, translation quality, and noise in MT in a literary translation context, Taivalkoski-Shilov (2019: 692) issued a warning about unethical uses of MT:

Eventual applications of fully automated MT systems for literary texts, even when offering worse quality than human translators, would be welcomed by mercenary publishers, who are already now selling unedited, poor machine translations to unsuspecting customers. Such publishers might also hire literary translators – or non-professionals – to post-edit machine translations, which would destroy the trade as a creative profession and severely reduce translation quality.

Kenny and Winters (2020: 126-145), in response to such warnings and addressing the lack of studies on the “human translator’s voice in the machine translation of literary texts”, focused on the concept of translation style in a case study with a famous translator. They asked the translator to post-edit the MT output generated by DeepL Pro to determine whether the translator’s “textual voice” was discernible in the text s/he produced through post-editing. They quantified the “style-diminishing retentions” (lack of inversion, less colloquial language, and lower register) and the “style-amplifying changes” (inversion, more colloquial language, and higher register) and then analysed the translator’s comments and answers to interview questions. They concluded that “the translator’s voice is somewhat dampened in his post-editing work.”

Studies have also been conducted on literary translators’ use of technology. Slessor (2020: 246), for example, surveyed 40 literary translators in Canada and found that 70% never used MT in their work, 20% used it rarely, and 10% only occasionally. A similar picture was observed for other tools, e.g., translation memory, terminology management software, voice recognition software, and monolingual and bilingual concordancers. The major reason cited for not using MT was poor output quality. Yet Slessor (2020: 250) notes the following:

Because the survey reflects individual views, it is not known what types of MT systems respondents had experience using nor when that experience was gained. It is possible that their views on the quality of MT are long-held ones, so follow-up research could consider literary translators’ perceptions of neural MT, which produces relatively fluent results for some language pairs.

Along with the findings presented in the literature, new questions continue to arise: Is post-editing a creative process, or a mechanical one? Does computer-assisted translation (CAT) really provide creative solutions, or does it lead to standard, pre-fabricated ideas? In our post-human world, we may feel like cyborgs (Robinson, 1998; Reynolds, 2016), whose work is no longer entirely human and whose translations lack authenticity. Research has shown that a novice translator’s creativity is likely to be suppressed in a time-limited task of post-editing a translated literary text generated by, say, Google Translate (Şahin and Gürses 2019). There is also evidence that post-edited texts are simpler, and that MT negatively affects lexical and syntactical diversity (Toral, 2019; Vanmassenhove, Shterionov, and Way, 2019; Tezcan, Daems, and Macken, 2019). However, if no time limit is imposed on translators’ interaction with machines, is it

possible to view cyborg literary translation as a new pathway to more creative human translation?

In addressing these and similar questions, we assigned a post-editing task to novice and professional translators. We specifically sought answers to the following questions:

1. To what extent do machine translation systems add value to literary translation practice for the English–Turkish language pair?
2. How do novice and professional translators interact with machine translation in literary translation practice?

## 2. Methodology

### 2.1 Participants

The participant pool included 11 novice and 8 professional literary translators<sup>3</sup>. The novice translators were students in a four-year undergraduate degree program in the department of translation and interpreting studies (TIS) at a public university in Turkey. The post-editing task was an assigned activity toward the end of an elective course on translation technologies.<sup>4</sup> The students then completed a survey about their translation background and their opinions about the task. Of the 20 students in the class, 11 granted us permission to use their data in the study. Seven of the 11 reported some experience with literary translation, while the other four reported minimal experience. All students had taken courses that covered literary forms, and most had taken a specialized course on literary translation. The reports of minimal experience might be due to the heterogenous nature of the class population, as it included both third and fourth-year students. This was not expected to have much effect, if any, on the results.

The professional literary translators, all well regarded for their expertise in the Turkish translator community and known by the researchers, were contacted by email. The translators completed the same post-editing task as the one assigned to the students and filled out a questionnaire. All were highly experienced in literary translation: 7 of the 8 had more than 10 years' experience, and the other had 7 to 10 years' experience in the profession. They have translated works by James Joyce, Jonathan Lethem, and Frank Herbert into Turkish and some have also translated Turkish literary works into English.

Before presenting the results about the participants' attitude toward the PEMT in literary translation, we will first report on their previous experience with technology in general and PEMT in particular. As can be seen in Figure 1, most of the professional translators did not feel they were competent in using translation technologies such as translation memory systems, terminology management systems, corpora, and translation management systems. Their self-perceived levels of competence varied. Three did not feel competent at all, whereas only one felt very competent. Three felt competent to

<sup>3</sup> The participants' names were anonymized; students were coded as S1 to S11 and professionals as P1 to P8.

<sup>4</sup> It should be noted that in Turkey TIS education is offered as a four-year program with courses on both theory and practice. The program where the student participants are enrolled in contains courses on a variety of topics such as literary translation, translation criticism and literary forms. The programme also has a variety of elective courses with a focus on both theory and practice.



some extent, and one to a small extent. Except for one, all indicated that using computer-aided translation tools (i.e., translation memory systems and terminology management systems) is essential for a successful translator. One stated that MT is suitable for technical translations but not literary ones.

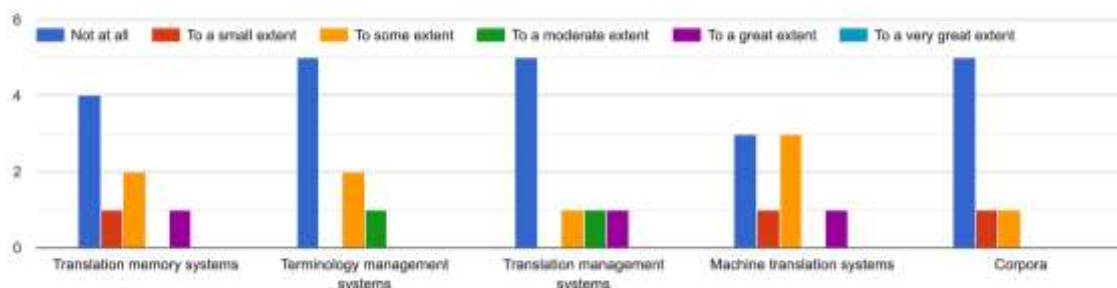


Figure 1. Professional translators' self-reported competence levels in translation technology

The professional translators in our study did not believe using CAT tools would increase a translator's success (see Figure 2). Most noted that it would not be the case in the context of literary translation, as explained by P7:

As an editor, I worked with a translator who used a translation memory system to translate a novel. It made the language somewhat dry and cold. I think literary translation is more than a repetition. It needs an artistic attention. But in scientific or business translations, it certainly helps. I have used it in business translations.

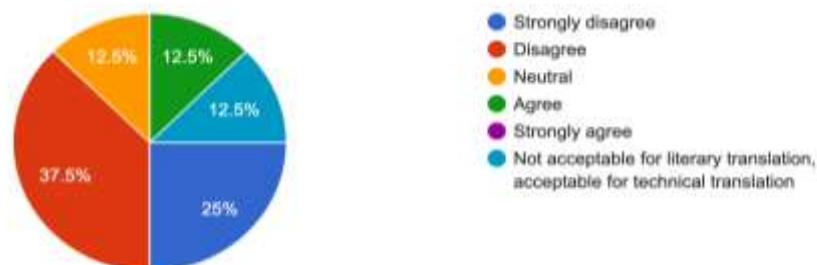


Figure 2. Contribution of CAT tools to success in the translation profession according to professional translators

As for the student participants, all had taken a course on information technologies<sup>5</sup> and another on translation technologies that covered both theoretical and practical aspects of machine translation, translation memory systems, terminology management systems, corpora, and localization. Issues such as ethics and data protection were also included. Like the professional translators, the students were of the opinion that MT is unsuitable for literary translation. One (S1) highlighted the risk of “diminishing the original author's literary skills and his/her style in general.” Another (S9) mentioned the positive contribution of post-editing machine-translated literary texts:

<sup>5</sup> The course focuses on information technologies for translators and language professionals. It involves basic training for the most widely-used software applications, with a special emphasis on word processors and translation memory software. Discussions on benefits, uses and limitations of existing technologies are also part of the course.

Reading *Great Expectations* and other 19<sup>th</sup>-century English literature, I never thought I would be able to translate books with such long sentences and ancient language. But now it seems less intimidating. I think seeing the MT's translation and the mistakes helped me understand which aspects of the book were intimidating to me and for what reason. I think this assignment worked well for an aspiring literary translator like me to gain insight as [sic] and to see PE in a different light.

We asked the students about their level of competence in using the technologies before they took the elective course on technology and about the extent to which the course helped them improve their skills for the technologies. Most reported an improvement in their competence levels. The students were more positive about the use of CAT tools in the translation process.

## 2.2 Procedure

We provided the participants with a translation brief for the post-editing task. We asked them to produce a literary translation of publishable quality. They were free to use MT output from any freely available online MT program. We asked them to use MT output as much as possible and not to translate from scratch unless it was absolutely necessary. We also asked them to time the whole process and to note the linguistic and research resources they used. Owing to COVID-19 pandemic measures, none of these activities were physically observed by the researchers; the participants completed all tasks independently at their own convenience. Informed consent was obtained in electronic format. The experiment with students was carried out in June 2020 and with the professional translators in December 2020. We provided no information about the background and history of the text, nor did we mention the name of the author, as we wanted to see whether any of the participants would see a need to seek recourse to the whole of the source text to facilitate the post-editing process.

## 2.3 Instruments

### 2.3.1 Text

The text used in the experiment was an excerpt from Charles Dickens' *Great Expectations*, chosen for its lexical and syntactic richness (see Appendix 1).

### 2.3.2 Survey

We administered surveys to both the student and professional translators in electronic format using Google Forms.

Questions	Multiple choice	Likert scale	Open-ended	Grid
Students	1	2	8	1
Professionals	2	4	8	1

Table 1. Survey questions

The survey for students consisted of 12 questions; the one for professionals had 15. The different number of questions was due to rewording and dividing some of the

questions, and a stronger focus on demographics for the professionals. All survey questions were asked and answered in English.

### *2.3.3 Interview*

Two of the professional translators were invited to an interview for an in-depth discussion about their experience and their views on the use of MT in literary translation. The semi-structured in-depth interviews were conducted via an online meeting platform. They were conducted in Turkish, each lasting 30–45 minutes. The meetings were audio-recorded with the consent of the participants and then transcribed and translated. Some of the questions were as follows:

1. Which steps did you follow in your post-editing activity? How would you describe the workflow?
2. What was your first reaction to the MT output?
3. Were there any parts in the MT output that you found helpful?
4. Have you felt any tension between the text and yourself because of MT's presence?
5. If this were a translation submitted to you by a human to be edited, would you feel differently?
6. How do you think MT would contribute if you were to post-edit the whole book instead of a short excerpt?
7. What other technologies can be used in literary translation?

### *2.4 Analysis*

We analysed the degree of post-editing in translations, made possible because the participants were instructed to use Microsoft Word's track changes tool. We manually coded the survey and interview data and analysed the data based on the scheme proposed by Auerbach and Silverstein (2003). We highlighted the repeating ideas by grouping together related passages and we organized themes by grouping repeating ideas into coherent categories. We first identified main themes and categories in the answers to the survey questions. Those themes and categories informed the interview script.

## **3. Results and discussion**

Our first question investigated the extent to which machine translation systems add value to literary translation practice for the English–Turkish language pair. The participants used an online MT system to get the text pre-translated. The first finding is that, not surprisingly, all participants used online neural MT systems. In other words, none of the participants had access to any domain-adapted MT system. Both students and professionals performed a large number of edits on the MT output. The most commonly used system, again by both students and professionals, was Google Translate (GT).

8 out of 11 students used Google Translate, citing the following reasons:

1. It is mainstream MT.
2. It is the most easily accessible NMT system.
3. It was the most effective and successful one.
4. It is the most popular and so far the most reliable one available to the public.
5. It would be interesting to see how NMT software would handle a literary text.
6. It is a neural machine translation program.
7. It is free, has a large corpus and is surprisingly accurate for an MT that is not trained for a specific type of text.
8. It is very easy to access and use.

Two students used Microsoft Bing Translator for these reasons:

1. They had never heard of anyone using it, so they wanted to give it a try. They also found that it uses neural networks.
2. They had seen enough of Google Translate and wondered how other options would perform.

One student used SmartCat because the user interface is practical, and the MT was known to be “quite good.” The student exported the translation from SmartCat and edited it in Word.

	Student complaints (June '20)	Professional complaints (December '20)
<b>Problems with the MT output</b>	<b>extensively literal</b>	<b>too literal, non-idiomatic</b>
	<b>syntactical inaccuracies</b>	<b>syntactical inaccuracies</b>
	<b>lexical inaccuracies</b>	<b>semantic problems</b>
	<b>lack of stylistic features</b>	<b>lack of contextual understanding and style</b>
	<b>untranslated parts</b>	<b>mistranslation</b>
	<b>nonsense</b>	<b>unintelligible</b>

*Table 2. Problems with the MT output*

As for the professionals, all except one preferred GT. That individual used Reverso, but no reason was given. The GT users chose GT mainly because it was the first one that came to mind. One stated that he used GT simply because he had never tried it. Regardless of the MT system used for the pre-translation, all participants reported serious problems with the quality of the MT output (see Table 2). Here it should be noted that there were a number of differences between the MT outputs produced by GT in June

2020 and those in December 2020. The former exhibited more errors. Microsoft Bing Translator, however, produced exactly the same output both times.

One professional, (P8), described the MT output as follows:

It's going to sound alarmingly romantic, but, oh well: plainly, the whole thing was ugly. Granted, it gave you the basic info presented in the passage almost right, but to me, literary translation is more a matter of style, tone and even beauty than grammatical approximation. It should therefore be built from [sic] the ground up with the goal of attaining these, rather than having to cut and paste through thoroughly impersonal swathes of text, trying to Frankenstein it into life.

As one can infer from Table 2 and the quotation above, all participants found the quality of MT output to be very low. Most rated it 2 or 3 out of 10. Only one professional rated it 5 out of 10, stating that it is “not a real translation, but it can help understanding something in a foreign language.”

Our second research question focused on how translators interact with machine translation tools in their literary translation practice. This question is related to the PEMT-related evolution of translation practice, which can be examined on the basis of its three constituents: materials, competences, and meanings, as described by Olohan (2021a).

	Students	Professionals
Online dictionaries	✓	✓
Extended source text	✓	✓
Web search	✓	✓
YouTube	✓	
CAT tool (SmartCat)	✓	
Google as a corpus tool	✓	

Table 3. Resources used in the translation process

In our study, we focused on the meanings of PEMT for translators, that is, the significance for their engaging in post-editing in literary translation. The meaning of translating literary texts may have changed over time with the advent of new technologies and the rise of machine translation. Although basic tools like word processors and online dictionaries have probably been adopted by almost all translators, it is worth looking into how translators’ perception of new technologies might have changed with the introduction of new technologies such as NMT.

We asked the participants to report the resources they used in the translation process, apart from the MT tools. All had access to a variety of resources, all in an online environment, as presented in Table 3. Students relied on more resources than the professionals.

The participants timed their post-editing work, including time spent using resources. Figure 3 shows that some professionals spent more time on PEMT than the students. The longest time spent was by P8, whereas the shortest time was by S9.

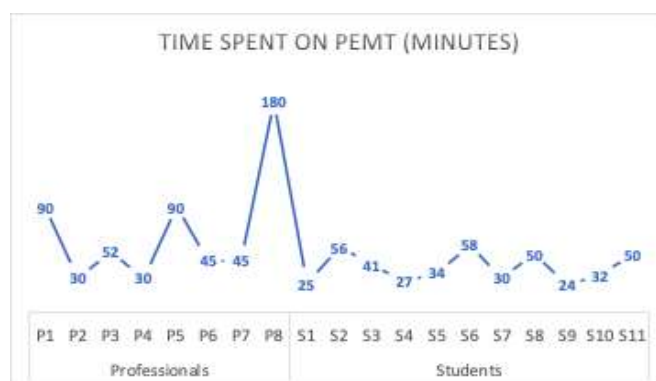


Figure 3. Time spent on PEMT

One question in our survey aimed at gathering participants’ views about the usability of MT in literary translation. All participants stated that MT is not usable in literary translation. They listed various reasons. Three participants – one professional and two students – stated that even though MT is not usable in literary translation, they had relatively positive attitudes toward the use of MT in literary translation, but with certain reservations. The professional (P5) highlighted the possible use of MT for generating templates for longer texts. The two students (S8 and S11), however, added a positive comment along with their overall negative attitude and pointed to the practical use of MT within a CAT environment, even for literary texts. The reasons cited for not using MT in literary translation (see Table 4) are worth discussing.

Reason	Professionals	Students
Low quality	1	4
No creativity & originality		3
PE more difficult than HT	2	1
Lack of contextual knowledge	1	
PE time-consuming	2	3
Not useful	2	5
Lack of human memories, experiences and cultural acquisitions		1
Not reflective of the author’s style		1
No sense of professional pride in MT		1

Table 4. Reasons for preferring not to use MT in literary translation

Both professionals and students found MT impractical, as it was difficult and therefore time-consuming to correct the low-quality output. Some reasons, on the other hand, were mentioned only by students. These included lack of creativity and the source author’s style in the MT output, as mentioned by one student (S9):

I would not [use MT], because, even if I disregard all the material mistakes, there is the issue of the author’s style. Post-editing/translating the text, I could not disregard the content expressed through form (long sentences reflecting Pip’s anxiety), but I also could not build sentences that are long to the point of incomprehension. To be honest, I had great difficulty understanding the source text myself, but I tend to think that a native speaker would have an easier time and try to recreate that experience in the target text. Sometimes, to keep the balance, you have to omit from somewhere and then add something to another place in order to make up for that omission. I do not think MT can make such complex conscious decisions, because even if we could give MT the ability to take



the initiative and solve problems creatively, I do not know how we can give it the “professional pride” humans can have about what they do. Personally, by professional pride, I mean an amalgamation of the respect I have for the author, my fellow translators, the profession itself; the sense of responsibility I feel towards the future of the profession; and the pride I take in being able to call myself a translator, because I consider it a very respectable title which goes beyond being a simple “occupation”.

All professional translators disagreed with the proposition that MT can contribute to literary translation, saying that

- dealing with the machine-created text was more a waste of time than a contribution. (P1)
- MT makes mistakes precisely in the features that make a text literary, e.g., nuance, context, irony. (P2)
- MT does not do justice to literary translation, at least for the time being. (P3)
- MT can have adverse effects –contributing to plagiarism, for example – because more often than not, it is easy to transform the MT templates into “readable” texts. (P5)
- MT can even misguide a translator. (P7)

One professional (P5) added that “[w]orking on the MT templates might be a good exercise for future translators. And in that regard, it can be good for educational purposes.”

Finally, to find out their projections about the practice of PEMT and technology in general, we asked the participants to describe the future of the translation profession in one sentence. Most of them, mainly the professionals, believe that machines will not be an effective tool for literary translators in the near future. Only one professional (P3) stated that MT would “continue to develop in more ways than we can imagine and will help and replace human translators.” Another (P8) expressed fear that MT will be “handed straight to editors, eliminating translators in the process and making editors the new de facto translators.” He added that this would increase the demand for high quality literary translation. Almost all participants acknowledged the growing role of technology in the translation practice.

MT outputs from four services – Google, Microsoft Bing, Yandex (as the only freely available system available in SmartCat), and Reverso – were all problematic, according to the participants (see Table 2). Yet in our analysis of the post-edited texts, we observed that a number of serious errors were either unnoticed and therefore passed on from the MT output, or else misinterpreted in the human intervention. It is likely that the participants were negatively influenced in their post-editing task by the poor quality of the MT output.

Student translators tended to produce more mistranslations than professional translators, which is understandable, but it is important to note that some of the students appeared to have given up toward the end, resulting in an unintelligible sentence in their post-edited text. Only one divided a sentence into two parts, changing the MT solution. The others focused on the MT word choice. Most of the professional translators produced creative solutions. The probable reason for this higher creativity of the professional translators is that the original sentence was highly stylistic—full of idiomatic expressions

(e.g., to imbrue one’s hands in someone), had low frequency collocations (e.g., constitutional impatience), and exhibited uncommon usages (e.g., to think oneself accredited to something) and therefore received more attention from the translators.

The examples below are worth examining for purposes of comparing different approaches to translation problems:

### 3.1 Textual Background

Most of the participants seemed not to have a full grasp of the background and history of the text, although such information could have been obtained by a web search, as this was allowed in the experiment. The passage we selected from Dickens refers to the famous conversation in the churchyard between Pip and the convict. Pip refers to the convict as “the man with the iron on his leg who had sworn me to secrecy.” The “iron on his leg” refers to shackles (see Figure 4) and is not common usage. MT translates this expression quite literally and therefore does not produce a good translation. But almost all participants in the role of post-editor kept the MT solution and failed to create an adequate translation that would allow the reader to easily understand the expression. It is also important to note that even a published translation in Turkish (a 1967 translation by a famous translator, Nihal Yeğınobalı) also uses a literal method to transfer the expression into Turkish as “bacağı demirli adam” (the man with an iron leg), which makes little sense and is very similar to the MT output. In our experiment, however, two of the professional translators were able to create an accurate rendering of the expression.



Figure 4. *Pip and The Convict* by Sol Eytinge (1857), scanned image by Philip V. Allingham.

### 3.2 Idiomatic expressions

Another idiomatic expression was “leg of trousers,” an expression that appears three times in the book (based on the CLIC Dickens Corpus). This is where the boy hides a piece of buttered bread to give it to the convict. The literal translation in Turkish would

be “pantolonun bacağı” and such a literal translation would reflect the source text meaning adequately, and MT produces the same. We observed that, with the exception of one, all student participants kept this solution. Some professional translators, however, have chosen to shorten this to simply “bacak” (leg), leading to an inadequate meaning, as if Pip is trying to hide the bread in his leg. The published translation in Turkish that we refer to above uses “paça” (the lowest part of a trouser leg), which is also hard to understand. In this case, MT produced a more accurate equivalent, and post-editors were unable come up with a better solution. The first sentence of our selection, which contains this expression, is a tricky one in that the translator and/or the post-editor have to determine what is hidden in these trousers by making a search in the previous part of the text.

### *3.3 Long and stylistically complex sentences*

The 48-word sentence (“What if the young man . . .”) in the passage posed problems for MT and our participants alike. MT kept the style of the original, giving a whole sentence, and both student and professional post-editors tended to keep it. In general, our post-editors retained both the errors and the style of the MT output. MT seems to protect the integrity of the original. But we observed that the 1967 Turkish translation dealt with the complex structure by dividing it into two sentences for easy reading and an adequate translation. The result still fails to give a meaningful solution. The translator also apparently fails to comprehend the expressions such as “constitutional impatience” and “imbruing hands in me.” But she produced a creative solution by changing the style.

Another complex sentence in the passage contains a reference to an earlier part of the novel where the convict mentions a “young man.” It is very difficult to figure out who this refers to without knowing the characters and the subject of the novel. However, the analysis of the post-edited outputs suggests that the participants saw no need to look into this issue.

### *3.4 Interviews with professional translators*

In our interview with two professional literary translators, we focused on how they perceive MT in the translation workflow and how they view possible changes in the profession with the potential introduction of MT to the literary translation practice, with reference to what has transpired in other domains. The first interviewee, reiterating the problems with MT output, described it as a “soulless” and “distant” product that detaches the translator from the spirit of the source text and the author and blocks creative and free thinking. They reject tools such as translation memories for the same reason, despite the capabilities they offer, adding that enjoyment of the art of translating outweighs any practical help machines would offer. The second professional translator’s answers to the interview questions overlapped to a great extent with the first’s.

Both translators believed they had over-edited the MT text, as if they were translating from scratch. We asked both whether they looked up earlier published translations of the text while post-editing. They replied that they did not bother to do so, arguing that it was not necessary for editing. The first interviewee found looking at past translations

unethical. The second interviewee even proposed that a need to look up other translations of the text is a sign of insufficient knowledge of the language. We also tried to ascertain whether their attitude to the text would change if they knew it had been created by an incompetent human translator instead of a machine. The first interviewee accepted that it would probably change. The second interviewee had already tackled the MT output as if it had been produced by a human and acted accordingly, that is, accurate solutions were kept even if they could have been replaced with better solutions. The second interviewee reported using online digital dictionaries and sites regularly.

### 3.5 Discussion

Analysing data from the survey and interviews and from the post-editing work gave us an idea about the place of MT in literary translation. We noted that, because of the highly sophisticated language in the source text chosen for the experiment, the MT output that the participants worked on was of poor quality, which resulted in their negative opinion about the use of MT in literary translation. However, considering the problems of the 1967 published translation (and its stylistic complexity) and the PEMT work produced by the participants, it would be fair to argue that the MT output was reasonably acceptable. The results support our choice of a relatively complex classic literary text because it includes several stylistic challenges that a literary translator might normally encounter. We should also bear in mind the linguistic distance between English and Turkish and the relatively small volume of parallel texts available in the MT database for this language pair. We believe that if individual segments of the source text had been evaluated separately, we would have found instances where MT could have provided the translator with a solid base to work on, which might have contributed to a more positive attitude and better interaction. For example, in some segments, the MT output seems to be more faithful to the syntactic features of the source text, which is usually a positive point so long as the target structure makes sense and carries the stylistic features of the source material. This suggests that MT, even at this stage, is in competition with human translators for basic literary texts. The 2020 machine translation is more faithful to the source text than the published 1967 translation of the same passage; it preserves the syntactic and stylistic structure of Dickens. In the 1967 translation, all sentences are divided, punctuation marks have been changed or added, and a few utterances have been mistranslated. For example, “I never thought I was going to rob Joe” was mistranslated as “bu utancı Joe’ya karşı duymuyordum” (“I never felt shame against Joe”).

This raises the question of whether the professional translators in our experiment would have preserved the syntactic structure if they had been asked to translate it from scratch instead of post-editing the MT output. We observed that, in general, they preserved the syntactic features of the MT output. Is it because they found it necessary to keep the style of the author (Dickens), or is it just because they were editing? If they had translated it from scratch, would they have done the same? We believe they would prefer to transfer the author’s style and syntax.

## 4. Conclusion

Recent research (e.g., Slessor 2020, Youdale 2019) shows that literary translators can and do use technology extensively in their work. Yet there is little research on how translators interact with the machines in literary translation tasks and how they perceive the use of automatic translation in their work. In this study, we investigated the affordances of machine translation tools in literary translation practice for the English–Turkish language pair with a focus on novice and professional literary translators’ opinions. We also looked at the meaning of MT for these two groups. In a post-editing study, we examined whether and how MT can contribute to literary translation and how translation students and professional literary translators approach the use of MT in such practice. In addition to post-edited MT outputs, we collected data through electronic surveys to 11 translation students and 8 professional translators and interviewed two of the professional translators.

Drawing on an analysis of participants’ answers to the survey questions, on interviews with two of the professional translators, and of the post-editing activity, we were able to answer the first research question. Our participants believe that MT, with its the current capabilities, is not yet able to contribute to literary translation from English into Turkish. The high degree and cognitive intensity of post-editing, and the multiplicity of errors in the MT output substantiate their reaction. This suggests that literary translation is still an area where publicly available online neural MT is far from replacing humans and that it requires assistance from and intensive editing by humans for English–Turkish translation. As one of the professional translators (P8) pointed out, the post-editing task was as challenging as creating something meaningful out of mismatched pieces.

Our second research question focused on the interaction between translators and machine translation tools. We were able to see their interaction only through the post-edited MT outputs and their answers to the survey and interview questions. The participants interacted with the MT tools at different levels. Although they generally found MT output useless and nonsensical, they seemed to accept it at both the syntactic and lexical levels. They left the long sentences undivided, although it is not an uncommon practice to divide sentences in literary translation practice (one of the lengthy sentences was divided in the published translation, for example).

It can be argued that the human-machine interaction may have decreased the participants’ sense of immersion in the act of “translation.” In other words, the interaction probably caused a certain level of confusion about their role. Were they editors, or translators? O’Brien (2012: 119) says that “editing, revising, or post-editing are valid skills to have alongside translation” and it might be that the participants were unable to assume the role of editor to the fullest extent and therefore adhered to their role as a translator. We have to remember that we had two groups of translators, and it was interesting to see how assuming the role of editor unfolded for professional translators already in the market, as they need to keep their professional identity, which had been shaped so far without MT in the picture. For student translators, however, there is another future where they will be able to develop a professional identity that is integrated with MT tools.

From this experiment, we can also argue, even paradoxically, that both translation students and professional translators have already turned into cyborg translators, albeit to different extents. They rely on a variety of online resources and seem to have fully adapted to translating on screen. In other words, they are accustomed to the digital workspace and the mind–body coordination that takes place in such a translation workspace. Thus, we can argue that the wholesale rejection of MT at this point may be a sign that using MT in literary translation has not yet been adopted as a norm by either students or professional translators. In other words, our small-scale study shows that the *meaning* of literary translation practice has not yet changed for translators, regardless of recent developments in machine translation and other translation technologies. They still consider this practice human-driven with little (if any) machine intervention. With an analogy to the divide between digital natives and digital immigrants (Prensky, 2001), we can also make a distinction here between MT natives and MT immigrants. Translation students, who embarked on studying translation in an era when machine translation is omnipresent, can be called MT natives. All the translation professionals in our study, however, met MT in later periods of their career and thus can be called MT immigrants. We project that the MT natives are likely to develop a more positive attitude toward the use of MT in literary translation as the practice becomes more common, as was the case when word processors and online dictionaries first entered the scene.

It is also probable that our results would have been different if we had selected a different passage that made no reference to earlier parts of the novel or a passage with simpler stylistic features. But the material we chose helped us see differing translator decisions and attitudes. Do they act like a machine without artificial intelligence (AI) which does not take into account the textual background and the whole literary piece, or do they act like an AI translator which may be equal to a human translator? This remains unclear. In general, all participants criticized and changed the MT outputs, and all were dubious about the machine's skill in translation. Most importantly, the majority of them researched the original text. This kind of intelligence, as far as we know, is lacking in today's MT systems.

We have no evidence that computer-assisted translation (CAT) can provide creative solutions, but we know it can lead to standardised, pre-fabricated texts. MT is, however, already here as an option, and its affordances will be tested more and more in different settings. There will be both short and long-term impacts on the translation practice, the educational training of translators and the profession as a whole. We should not forget that there are also ethical issues: One concern raised by a professional translator was that, in the future, MT might be used by editors as a tool against translators, to eliminate them from the process. Our participants envisage the future in various ways. Some give no place to MT in literary translation, while others foresee an inevitable takeover.

This study was an attempt to portray the possible contributions of MT to literary translation in the English–Turkish language pair and to identify translators' attitude to this still-unconventional practice in the role of post-editors. Such experiments can be replicated with customized MT systems that have been trained with a parallel corpus of



literary texts, and they can be conducted with longer texts and in more controlled settings so that the translation process can be observed closely. Future studies may also add other language pairs. We need experiments that involve PEMT from German, Spanish, French and Russian texts into Turkish, as translations of literary texts from these languages into Turkish are common. Literary MT evaluation also needs a comparative study that would analyse literary MT in English with pairs such as Spanish–English or German–English and English–Turkish. This sort of comparative study could help us see other possible uses of MT, such as indirect translation, a common practice in Turkey. More longitudinal studies are needed that examine how attitudes change as MT quality increases and translation practices evolve.

### Acknowledgements

We would like to thank the students and the professional translators who participated in this study. We also thank two anonymous reviewers and the guest editors for their valuable comments and feedback.

### Bibliography

- Auerbach, C.; Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. New York [etc.]: New York University.
- Balashov, Y. (2020). The Translator's Extended Mind. *Minds and Machines*, v. 30, n. 3, pp. 349-383. <<https://doi.org/10.1007/s11023-020-09536-5>>. [Accessed: 20211115].
- Besacier, L. (2014). Machine translation for literature: a pilot study (Traduction automatisée d'une œuvre littéraire: une étude pilote). In: *Proceedings of TALN 2014 (Volume 2: Short Papers)*. Marseille: Association pour le Traitement Automatique des Langues, pp. 389-394. <<https://aclanthology.org/F14-2001/>>. [Accessed: 20211115].
- Beylard-Ozeroff, A.; Králová, J.; Moser-Mercer, B. (eds.). (1998). *Translators' Strategies and Creativity: Selected Papers from the 9th International Conference on Translation and Interpreting, Prague, September 1995: In honor of Jiří Levý and Anton Popovič* (Vol. 27). Amsterdam [etc.]: John Benjamins. <<https://doi.org/10.1075/btl.27>>. [Accessed: 20211115].
- Boase-Beier, J. (2011). *A critical introduction to translation studies*. London [etc.]: Continuum.
- Bundgaard, K.; Christensen, T. P.; Schjoldager, A. (2016). Translator-computer interaction in action—an observational process study of computer-aided translation. *Jostrans, The Journal of Specialised Translation*, n. 25, pp. 106-130. <[https://www.jostrans.org/issue25/art\\_bundgaard.pdf](https://www.jostrans.org/issue25/art_bundgaard.pdf)>. [Accessed: 20211115].

- Cadwell, P.; Castilho, S.; O'Brien, S.; Mitchell, L. (2016). Human factors in machine translation and post-editing among institutional translators. *Translation Spaces*, v. 5, n. 2, pp. 222-243. <<https://doi.org/10.1075/ts.5.2.04cad>>. [Accessed: 20211115].
- Delisle, J. (1988). *Translation: An Interpretive Approach*. Ottawa: University of Ottawa.
- Eytinge, S. (1867). Pip and The Convict. *The Victorian Web*.  
<<https://victorianweb.org/art/illustration/eytinge/98.html>>. [Accessed: 20211115].
- Guerberof-Arenas, A.; Toral, A. (2020). The impact of post-editing and machine translation on creativity and reading experience. *Translation Spaces*, v. 9, n. 2, pp. 255–282. <<https://doi.org/10.1075/ts.20035.gue>>. [Accessed: 20211115].
- Hadley, J. (2020). Literary machine translation: Are the computers coming for our jobs? *Counterpoint*, n. 4, pp. 14-18.  
<[https://www.academia.edu/44701250/Literary\\_machine\\_translation\\_Are\\_the\\_computers\\_coming\\_for\\_our\\_jobs](https://www.academia.edu/44701250/Literary_machine_translation_Are_the_computers_coming_for_our_jobs)>. [Accessed: 20211115].
- Horenberg, L. W. (2019). Using CAT in Literary Translation-How Tools May Support Translators in Source-Text Analysis, Translation and Retranslation: A Case Study of 'Mr Loveday's Little Outing' [Master's thesis]. Utrecht University.  
<<https://dspace.library.uu.nl/handle/1874/383930>>. [Accessed: 20211115].
- Jones, R.; Irvine, A. (2013). The (un) faithful machine translator. In: *Proceedings of the 7th Workshop on Language Technology for Cultural Heritage, Social Sciences, and Humanities, edited by Piroska Lendvai and Kalliopi Zervanou, 96–101*. Stroudsburg, PA: ACL.
- Kenny, D.; Winters, M. (2020). Machine translation, ethics and the literary translator's voice. *Translation Spaces*, v. 9, n. 1, pp. 123-149.  
<<https://doi.org/10.1075/ts.00024.ken>>. [Accessed: 20211115].
- Laviosa, S. (2002). *Corpus-based translation studies: theory, findings, applications* (Vol. 17). Amsterdam: Rodopi.
- Malmkjær, K. (2019). *Translation and Creativity*. New York [etc.]: Routledge.
- Moorkens, J.; Lewis, D. (2019). Research questions and a proposal for the future governance of translation data. *Jostrans, Journal of Specialised Translation*, n. 32, pp. 2-25. <[https://jostrans.org/issue32/art\\_moorkens.pdf](https://jostrans.org/issue32/art_moorkens.pdf)>. [Accessed: 20211115].
- Moorkens, J.; O'Brien, S. (2015). Post-Editing Evaluations: Trade-Offs between Novice and Professional Participants. In: *Proceedings of the 18th Annual Conference of the European Association for Machine Translation*. Antalya: Association for Computational Linguistics, pp. 75-81. <<http://www.aclweb.org/anthology/W15-4910>>. [Accessed: 20211115].
- Moorkens, J.; Toral, A.; Castilho, S.; Way, A. (2018). Translators' perceptions of literary post-editing using statistical and neural machine translation. *Translation Spaces*, v. 7, n. 2, pp. 240-262. <<https://doi.org/10.1075/ts.18014.moo>>. [Accessed: 20211115].
- O'Brien, S. (2012). Translation as human-computer interaction. *Translation Spaces*, v. 1, n. 1, pp. 101-122. <<https://doi.org/10.1075/ts.1.05obr>>. [Accessed: 20211115].

- Olohan, M. (2021a). Post-editing: A Genealogical Perspective on Translation Practice. In: Bisiada, M. (ed.) *Empirical Studies in Translation and Discourse*. Berlin: Language Science Press, pp. 1-26 <<https://doi.org/10.5281/zenodo.4450077>>. [Accessed: 20211115].
- Olohan, M. (2021b). *Translation and Practice Theory*. London: Routledge. <<https://doi.org/10.4324/9781315514772>>. [Accessed: 20211115].
- Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they really think differently? On the horizon. <<https://marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part2.pdf>>. [Accessed: 20211115]
- Reynolds, M. (2016). *Translation: A very short introduction*. Oxford: Oxford University.
- Robinson, D. (1998). Cyborg Translation. <<http://home.olemiss.edu/~djr/pages/writer/articles/html/cyborg.html>>. [Accessed: 20211115].
- Rojo, A. (2017). The Role of Creativity. In: Schwieter, J. W.; Ferreira, A. (eds.). *The Handbook of Translation and Cognition*. Hoboken, NJ: Wiley-Blackwell, pp. 350-368 <<https://doi.org/10.1002/9781119241485.ch19>>. [Accessed: 20211115].
- Rothwell, A. (2018). *CAT tools and creativity: Retranslating Zola's La Joie de vivre*. Oxford: Oxford University.
- Ruokonen, M.; Koskinen, K. (2017). Dancing with technology: translators' narratives on the dance of human and machinic agency in translation work. *The Translator*, v. 23, n. 3, pp. 310-323. <<https://doi.org/10.1080/13556509.2017.1301846>>. [Accessed: 20211115].
- Shove, E.; Pantzar, M.; Watson, M. (2012). *The Dynamics of Social Practice*. London: SAGE.
- Slessor, S. (2020). Tenacious technophobes or nascent technophiles? A survey of the technological practices and needs of literary translators. *Perspectives*, v. 28, n. 2, pp. 238-252. <<https://doi.org/10.1080/0907676X.2019.1645189>>. [Accessed: 20211115].
- Summers, C. (2020). Authorship. In: Baker, M.; Salhanda, G. (eds.) *Routledge Encyclopedia of Translation Studies*. London: Routledge, pp. 35-39.
- Şahin, M. (2016). Translation Technologies for a Less Commonly Translated Language: Promises and Challenges. *Translatologia*, n. 1, pp. 1-21. <[https://www.academia.edu/30585370/Translation\\_Technologies\\_for\\_a\\_Less\\_Commonly\\_Translated\\_Language\\_Promises\\_and\\_Challenges](https://www.academia.edu/30585370/Translation_Technologies_for_a_Less_Commonly_Translated_Language_Promises_and_Challenges)>. [Accessed: 20211115].
- Şahin, M.; Dungan, N. (2014). Translation testing and evaluation: A study on methods and needs. *Translation & Interpreting*, v. 6, no. 2, pp. 67-90. <doi: <http://10.12807/ti.106202.2014.a05>>. [Accessed: 20211115].

- Şahin, M.; Gürses, G. (2019). Would MT kill creativity in literary retranslation? In: *Proceedings of the Qualities of Literary Machine Translation*. Dublin: European Association for Machine Translation, pp. 26-34. <<https://aclanthology.org/volumes/W19-73/>>. [Accessed: 20211115].
- Taivalkoski-Shilov, K. (2019). Ethical issues regarding machine (-assisted) translation of literary texts. *Perspectives*, v. 27, n. 5, pp. 689-703. <<https://doi.org/10.1080/0907676X.2018.1520907>>. [Accessed: 20211115].
- Tezcan, A.; Daems, J.; Macken, L. (2019). When a 'sport' is a person and other issues for NMT of novels. In: *Proceedings of the Qualities of Literary Machine Translation*. Dublin: European Association for Machine Translation, pp. 40-49. <<https://aclanthology.org/volumes/W19-73/>>. [Accessed: 20211115].
- Toral, A. (2019). Post-editeese: an Exacerbated Translationese. In: *Proceedings of Machine Translation Summit XVII Volume 1: Research Track*. Dublin: European Association for Machine Translation, pp. 273-281. <<https://aclanthology.org/volumes/W19-66/>>. [Accessed: 20211115].
- Toral, A.; Way, A. (2015). Machine-assisted translation of literary text: A case study. *Translation Spaces*, v. 4, n. 2, pp. 240-267. <<https://doi.org/10.1075/ts.4.2.04tor>>. [Accessed: 20211115].
- Toral, A.; Way, A. (2018). What level of quality can Neural Machine Translation attain on literary text? In: *Translation Quality Assessment*. Cham: Springer, pp. 263-287. <[https://doi.org/10.1007/978-3-319-91241-7\\_12](https://doi.org/10.1007/978-3-319-91241-7_12)>. [Accessed: 20211115].
- Vanmassenhove, E.; Shterionov, D.; Way, A. (2019). Lost in Translation: Loss and Decay of Linguistic Richness in Machine Translation. In: *Proceedings of Machine Translation Summit XVII Volume 1: Research Track*. European Association for Machine Translation, pp. 222-232.
- Visby, M. (2020). The future relationship of literary translation and AI: Reflections from CEATL president. *Counterpoint*, n. 4, pp. 28-31. <[https://www.ceatl.eu/wp-content/uploads/2020/12/Counterpoint\\_2020\\_04\\_article\\_08.pdf](https://www.ceatl.eu/wp-content/uploads/2020/12/Counterpoint_2020_04_article_08.pdf)>. [Accessed: 20211115].
- Youdale, R. (2019). *Using Computers in the Translation of Literary Style: Challenges and Opportunities*. New York: Routledge. <<https://doi.org/10.4324/9780429030345>>. [Accessed: 20211115].
- Zakrajšek, K. (2020). CAT tools: The literary translator's new assistant? *Counterpoint*, n. 4, pp. 24-25 <[https://www.ceatl.eu/wp-content/uploads/2020/12/Counterpoint\\_2020\\_04\\_article\\_06.pdf](https://www.ceatl.eu/wp-content/uploads/2020/12/Counterpoint_2020_04_article_06.pdf)>. [Accessed: 20211115].

## Appendix 1

### *Text*

Conscience is a dreadful thing when it accuses man or boy; but when, in the case of a boy, that secret burden co-operates with another secret burden down the leg of his trousers, it is (as I can testify) a great punishment. The guilty knowledge that I was going to rob Mrs. Joe—I never thought I was going to rob Joe, for I never thought of any of the housekeeping property as his—united to the necessity of always keeping one hand on my bread and butter as I sat, or when I was ordered about the kitchen on any small errand, almost drove me out of my mind. Then, as the marsh winds made the fire glow and flare, I thought I heard the voice outside, of the man with the iron on his leg who had sworn me to secrecy, declaring that he couldn't and wouldn't starve until to-morrow, but must be fed now. At other times, I thought, What if the young man who was with so much difficulty restrained from imbruing his hands in me should yield to a constitutional impatience, or should mistake the time, and should think himself accredited to my heart and liver to-night, instead of to-morrow! If ever anybody's hair stood on end with terror, mine must have done so then. But, perhaps, nobody's ever did?