44. Sustainability of translation as a profession: Changing roles of translators in light of the developments in machine translation systems

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Abstract

Translation as a profession has been radically affected by the developments in machine translation systems in recent years. In light of these developments, translators are expected to assume new roles and acquire new skills. Translators no longer work on only a source text. They are faced with raw machine translation outputs in many translation workflows. Thus, in a setting supported by machine translation, the translators are required to post-edit these outputs according to some pre-defined criteria, which sounds very different compared to traditional translation workflow in which translators translate a source text from scratch. Post-editing can be at different levels depending on the expectations of the customer and the intended purpose of the text. As such, the skills and competences that translators must have become prominent. In this regard, this study aims to address the changing role of translators within the scope of translator competences considering the developments seen in machine translation systems. To this end, initially, the developments in machine translation systems and their effects on translation as a profession are discussed with an emphasis on translator competences. Moreover, post-editing levels and criteria for these levels are also addressed with regard to these skills and competences. Then, the competences required of translators and post-editors are compared building on the competence frameworks designed by PACTE and EMT groups. The research concludes that the translator competences should be redefined considering the changing roles of translators in an era dominated by machine translation systems.

Keywords: Machine Translation, sustainability in translation, changing role of translators, translator competence

Bir meslek olarak çevirinin sürdürülebilirliği: Makine çevirisindeki gelişmeler ışığında çevirmenlerin değişen rolleri

Öz

Son yıllarda makine çevirisindeki gelişmelerin bir meslek olarak çeviri üzerinde ciddi etkileri olmuştur. Bu gelişmeler ışığında çevirmenlerin yeni roller üstlenmesi ve yeni beceriler edinmesi beklenmektedir. Çevirmenler artık sadece kaynak bir metin üzerinde çalışmamaktadır. Çevirmenler artık çoğu çeviri iş akış şemasında ham makine çevirisi çıktılarıyla karşı karşıya kalmaktadır. Bu yüzde makine çevirisiyle desteklenen böyle bir çeviri bağlamında çevirmenlerin bu ham makine çıktılarını önceden belirlenmiş bazı kriterlere göre düzeltmeleri beklenmektedir. Bu durum çevirmenlerin bir kaynak metni sıfırdan çevirdiği alışılagelmiş çeviri iş akış şemasına göre oldukça farklı görünmektedir. Makine çevirisini düzeltme işlemi müşterinin beklentilerine ve metnin amacına göre farklı seviyelerde olabilmektedir. Böyle bir durumda çevirmenlerin sahip olması gereken beceri ve edinçler önemli hale gelmektedir. Bu

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bakımdan bu çalışma makine çevirisinde görülen gelişmeler ışığında ve çevirmen edinçleri kapsamında çevirmenlerin değişen rollerini incelemeyi amaçlamaktadır. Bu amaçla ilk olarak makine çevirisindeki bu gelişmeler ve bunların bir meslek olarak çeviri üzerine etkileri çevirmen edinçleri kapsamında ele alınmıştır. Daha sonra PACTE ve EMT tarafından tasarlanan edinç şemalarına dayanarak çevirmenlerden ve makine çevirisi düzeltmenlerinden beklenen edinçler karşılaştırılmıştır. Çalışma makine çevirisinin baskın olduğu bu çağda çevirmenlerin değişen rolleri dikkate alınarak çevirmen edinçlerinin yeniden tanımlanması sonucuna varmıştır.

Anahtar kelimeler: Makine Çevirisi, çeviride sürdürülebilirlik, çevirmenlerin değişen rolleri, çeviri edinci

1. Introduction

The developments in translation technologies have brought about dramatic effects on the process, profession and product of translation in recent years. These effects have been investigated and a general overview on the present status of translation has been given in some prior research (Alcina, 2008; Austermühl, 2011, 2013; Christensen & Schjoldager, 2010; Pym, 2011), however, it seems that there are fewer studies that make projections regarding the future of the translation. Furthermore, the review of the relevant literature shows that most of the studies have focused on Computer-Aided Translation which is also called as Translator's Workbench, the basic components of which are Translation Memories (TMs) and Term Bases (TBs) (Bowker, 2003; Bowker & Fisher, 2010; Lauffer, 2006; Melby, 1992; Mellinger, 2014; Taravella A & Villeneuve A.O, 2013). Nevertheless, the focus of attention has moved to machine translation systems with the translation quality improvements in these systems, especially after the 2010s. In this regard, some earlier research has shown that not only professionals but also novices or trainees (e.g. translation students) are increasingly using machine translation engines (Çetiner & İşisağ, 2019; Fullford, 2002; Korošec, 2011; Temizöz, 2016). Nevertheless, it should be noted that machine translation has not been fully accepted by professionals or properly understood by trainees. In this regard, Yuste (2001) drew attention to the misconceptions about machine translation systems among trainees and warned that a learner-centered, as well as practical and realistic approach, should be taken to fight the prejudices among students about machine translation systems in the earlier 2000s. Then, a silence period was reported between 2000 and 2010 with only a few sporadic studies on machine translation as the major focus of attention was on the effects of translation memories and termbases (Bowker, 2003, 2005; Garcia, 2009; García, 2006).

A decade later, Korošec (2011) drew attention to the increasing use of Google Translate among students and warned that students might be unaware of the advantages and disadvantages of using machine translation, for this reason, they "needed structured activities to deal with the pitfalls associated with machine translation successfully" (p. 15). Similarly, in the face of the increasing trend and interest in machine translation systems, Flanagan & Christensen Paulsen (2014) acknowledged the need to teach post-editing to translation trainees while underlying the lack of standard PE guidelines to use in translator training programs. In line with the competences that translator trainees should have, the researcher tried to investigate and report how trainee translators interpret PE guidelines. The researchers concluded that competency gaps should be addressed within the scope of translator training.

As regards the professional perspective, Silva (2014) reported significant results related to the benefits of using post-editing including the increase in productivity and decrease in the lead time of the projects while addressing the difficulties experienced by professional small-sized Language Service Providers (LSPs) in

integrating machine translation into their standard translation workflow (p.43). This research is deemed critical since it took professional practices into consideration. Noting that there was a lack of post-editors in the translation industry owing to the reluctance of translators to accept post-editing assignments, Yamada (2015) carried out a study with college language learners as prospective professionals to conclude that most of the students found post-editing works easier than human translation and students that applied an "analytic approach" to post-editing could get better results than those adopting an "integrated approach" (p.50).

Similarly, in a longitudinal research taking four years, Şahin (2015) investigated the use of Google Translate among translation students at undergraduate level and concluded that students were mostly eager to learn and use translation technologies and students' negative views about English-Turkish Google Translation system mostly stemmed from the fact that translation quality in this language pair was rather low (p.57).

Comparing the uptake of CAT (Computer-aided Translation) tools and Machine Translation systems by translators, Witczak (2016) also acknowledged the negative attitudes that translators had for machine translation systems, unlike translation memories that translators had gotten accustomed to over years. To this end, Witczak (2016) introduced post-editing into a course on CAT tools for MA students and made a post-editing experiment with students. Following the experiment, the researcher designed a questionnaire to learn students' thoughts about this experiment in light of the action research and social-constructivist approaches and drew a conclusion that incorporating post-editing into CAT tool training was an important and interesting experience for the students (p.49). In parallel to previous research, Mellinger (2017) also drew attention to the increasing use of machine translation in the professional industry and the need for trained post-editors, thus discussed the response of translation education programs to this market need.

Given that machine translation has become so common in the professional translation industry, and translator training institutions have increasingly initiated to response the market needs by incorporating courses on machine translation or sparing a part of other translation technology courses for machine translation, skills and competences required for the sustainability of the translation profession occupy the foreground in translation research that aims to discuss the future of the profession. With this in mind, this study seeks to discuss the emerging role and effects of machine translation particularly on the translation profession and to illustrate the skills and competences required for machine translation post-editing. To this end, a brief overview of the machine translation technology is given with a special emphasis on Neural Machine Translation (NMT). Then, types of post-editing are explained with a view to professional practices. Afterwards, the skills and competences of translators and post-editors are compared and discussed within the scope of the sustainability of the translation profession.

2. Machine Translation: Scope and historical background

The practical initiatives to have a document translated by computers date back to the 1950s when the cold war prepared a competitive setting for the Americans and Russians to have a voice in world politics and science though the first idea to automate the translation can be tracked to the Descartes who is known as one of the first scholars to propose the idea that codes can be given to the languages and these codes can represent the meanings (Quah, 2006). The Americans first saw machine translation as a solution for curbing the expansion in Soviet science and the famous Georgetown experiment was performed in this sense (Gordin, 2016). However, as it is known, these attempts and great expectations and accompanying investments ceased with the results of the infamous ALPAC report, which highlighted the inefficacy of machine translation and the necessity of human involvement in the translation process. Thus, the period

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from the announcement of this report up to the earlier 1980s is called as the "period of germination", in which the importance of computer-aided translation tools is stressed with a view to human assistance in the machine translation process (Sin-wai, 2015, p.5). However, the first corporate operations began in the period of "steady growth" between 1984 and 1992, in which first computer-aided translations were founded and regional expansions were reported with companies opening their branches in Germany, United Kingdom and Brussels (Sin-wai, p.7). Before delving into detail, it is worth stating the difference regarding the definitions of translation technologies. Thus, following linear figure continues to sheds light on the definitions as well as the differences of machine translation and computer-aided translation though nearly three decades have passed since it was first drawn by Hutchins & Somers (1992, p.148).
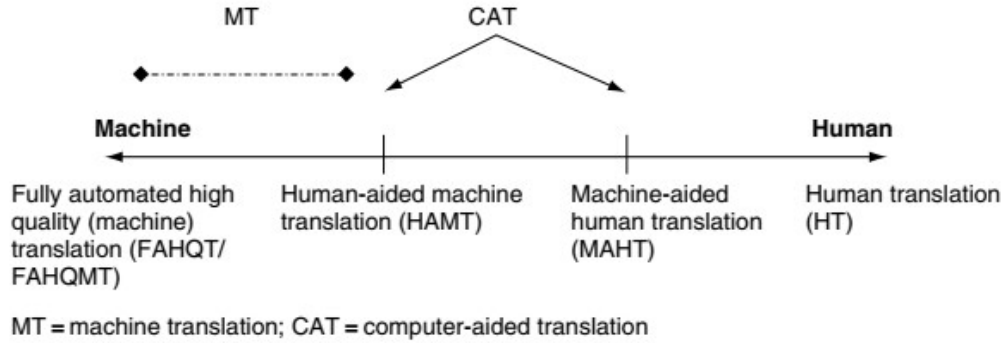

Figure 1. Classification of translation types

As the figure presents, there are two ends in this linear continuum, in which machine translation refers to the translation work that is fully done by computers. As for human translation, it corresponds to the translation process in which aids to automate the translation are not used. Nevertheless, Quah (2006) contests this linearity as differences among these terms are not easy to define in these days. This is related to the fact that "most tools today are integrated systems which contain features from more than one class" (Quah, 2006, p.8). Since the degree to which machine is used in the translation can vary, the boundaries between these binary definitions have become blurred. He further adds that "the main aim of machine translation is still to generate translation automatically, but it is no longer required that the output quality is high, rather that it is fit-for-purpose" (Quah, 2006, p.7).

It is important to address the historical developments in machine translation to be able to explain the reported quality increases in today's machine translation engines. In this regard, the initial machine translation engines were known to be designed as Rule-based systems that worked on pure linguistic rules (Quah, 2006; Sin-wai, 2015). However, with the collection of big data including bilingual or multilingual texts and by means of corpus tools to align these texts, Corpus-based approaches gained attention until the last ten years (Bowker, 2002). All in all, these earlier approaches have been used to some extent both for professional purposes and academic research. However, it can be claimed that machine translation engines didn't get public attention until 2016 when Google announced a new kind of approach called Google Neural Machine Translation (Reichert, 2016). Though it has similarities with its predecessor statistical approaches in that it also makes use of aligned texts, Neural Machine Translation is different as it is designed to work on neural networks (Forcada, 2017). For this reason, it is examined within the scope of Natural Language Processing, as well.

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3. Post-editing and its levels

Translation quality in machine translation systems has been addressed in some previous research within the scope of speed and productivity gains (Arianna, 2018; Fiederer & O'Brien, 2009; Gaspari, Toral, Naskar, Groves, & Way, 2014; Torron-Sanchez & Koehn, 2016). However, it is needless to say that machine translation has not reached a level that doesn't need human assistance either in the pre or post-production stages. For his reason, the machine translation outputs need human editing before any translation project is deemed as complete and can be submitted to the client or the initiator. This need has given rise to a new field of practice and research called as post-editing. In one of the earliest studies, post-editing is defined as the correction of a translation product that is translated by a machine translation engine (Allen, 2003).

As for the types or levels of post-editing, there are two types of post-editing including light and full post-editing which are also called as partial or complete post-editing respectively. As it can be understood from these terms, in light post-editing, only minor errors are edited while in full post-editing, both minor and major errors are detected and corrected (Almeida, 2013; Temizöz, 2016). Deciding on the level of post-editing depends on the purpose of the translation, but it may sometimes be difficult to select the right option as the translator or the post-editor can remain in between the client's quality expectations and remuneration for the work. As such it may be necessary for translators or project managers, if there are any, to ask the client or the initiator the purpose of the translation before starting any post-editing task.

4. Comparison of skills and competences required of translators and post-editors

The competences and skills that translators are expected to have or develop over time have been studied by translation scholars for a very long time. To this end, there have been not only some individual but also institutional attempts to define and explain the competences, each of which has focused on the competences from a different perspective. (Albir, 2007; Ehrensberger-Dow & Massey, 2013; EMT Board, 2017; Göpferich, 2009; Pym, 2003; Robert, Remael, & Ureel, 2017).

Needless to say, the new approach in machine translation has also brought about the need for new skills and competences to be gained by translators to use before, during and after the translation process. In this regard, Rico & Torrejón (2012) drew attention to the increasing popularity of post-editing in the professional translation industry and defined and grouped the competences as in the following figure (p.169).
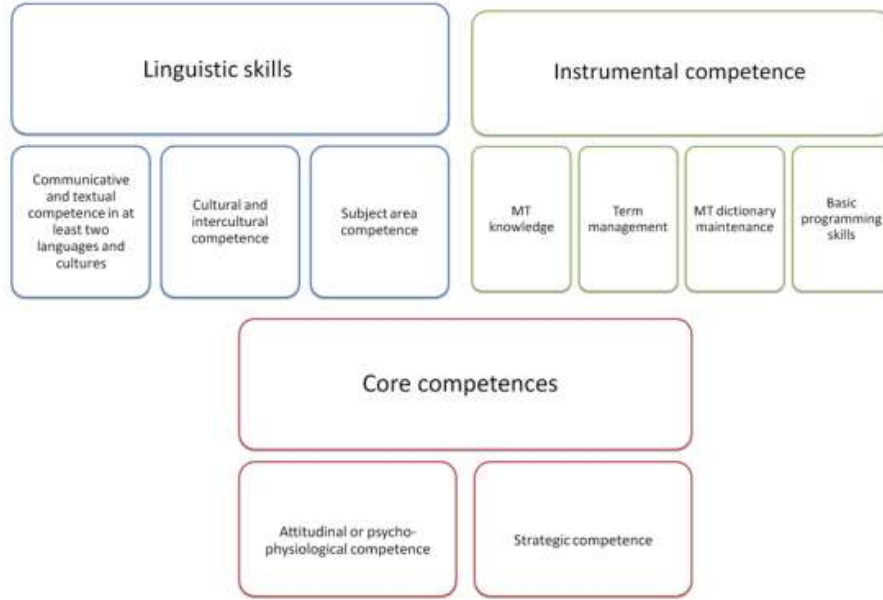
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Figure 2. Post-editing Skills and Competences

A closer review of the figure presents that the skills are classified into three main categories, each of which has sub-competences. Rico & Torrejón (2012, p.169) acknowledge that this classification was drawn building on the seminal work of Krings (2001) on post-editing, in which different processes related to post-editing machine-translation were addressed including "source text-related processes, machine translation-related processes, target text production processes, target text evaluation processes, reference work-related processes, physical writing processes, global task-related processes".

When the sub-competences are analyzed with a view to translation competences addressed in previous models like EMT Board (2017) and PACTE (2003), it can be asserted that translator and post-editor competences are mostly similar and overlap. However, the sub-competences under the instrumental competence can be directly related to post-editing rather than translation since machine translation knowledge, machine translation dictionary maintenance and basic programming skills are special topics that are connected to post-editing. In other words, a translator without machine translation knowledge can fulfil the translation task but a post-editor should know the basic knowledge regarding machine translation systems.

As for the core linguistic skills mentioned in Figure 2, it can be acknowledged that all these are the competences that a translator should have in order to produce an adequate translation product. For instance, a translator is expected to "know how to understand grammatical, lexical and idiomatic structures as well as the graphic and typographic conventions of language A and one's other working languages" as per the core language competence defined by EMT (2009, p.5). By the same token, this competence is addressed under the bi-lingual and extra-linguistic sub-competences in PACTE (2003). In this regard, this competence is known to comprise "pragmatic, sociolinguistic, textual, grammatical and lexical knowledge in the two languages" (PACTE, 2003, p. 39).

Though they are common to both translators and post-editors, core competences and their sub-competences addressed in Figure 2 are particularly important for the proper performance of a post-editing task since post-editors are usually confronted with the difficulty of deciding on the level of post-editing, and

this strategic competence can help them decide accordingly. This is again similar to translator competence known as "strategic competence" in PACTE (2003) framework, which is reported to be used to "plan the translation project; detect translation problems; apply translation strategies; activate, monitor and compensate for shortcomings in other competences; monitor and evaluate both the translation process and the partial results obtained in relation to the intended target text; etc." (p.39). This competence is addressed by European Master's in Translation as a sub-title of translation competence (EMT Board, 2017, p. 7)

What's more, Rico & Torrejón (2012) adds that core competences help post-editors to work out "subjectivity issues involved in defining and applying PE specifications, adequately handling client's expectations in terms of text quality acceptance, and overcoming uncertainty" (p.170).

Focusing on the translation risk management related to post-editing tasks, Nitzke, Hansen-Schirra, & Canfora (2019, p. 250) drew the following competence framework for post-editors:

Figure 3. Post-editing competence model

Noting that post-editing is a complex process, in which post-editors play an important role in competently managing the risks associated with many aspects in translation including the clients' quality expectations, economic considerations and security of the data etc., Nitzke et al. (2019, p.249) posit that the competences of post-editors may differ from those of translators. Nevertheless, they also state that they constructed the model building on the existing translator competence models (PACTE, 2003) and reviser competence models (Robert et al., 2017).

Compared to the skills and competence framework drawn by Rico & Torrejón (2012), this model seems different at the core competence level which includes risk assessment competence, consulting competence, and service competence. However, when the subsidiary sub-competences are analyzed in detail, it is seen that these are more or less similar to that of Rico & Torrejón (2012). For instance, MT competence, instrumental competence, research competence, and bilingual competence are seen to exist in both frameworks. Unlike the framework of Rico & Torrejón (2012), this competence model, however, has

revision competence. Drawing attention to the problem-solving strategies inherent to translation, Nitzke et al. (2019) underlines the importance of this revision competence by stating that a post-editor should achieve a balance between "necessary changes and over-editing" (p.249). For this reason, it is vital for post-editors to have revision skills to be able to decide whether the editing of the pre-translated material is essential or not.

Another significant difference as to the competences uttered in these two frameworks is that post-editing competence is defined as a separate subsidiary competence in the framework proposed by Nitzke et al. (2019). The researchers relate to this to the fact that neural machine translation engines give results that sound better in terms of translation quality compared to the past when statistical machine translation engines reigned and translation errors could be easily detected. For this reason, post-editors need to be alert to the translation problems that are hard to identify when it is the case for neural machine translation (Nitzke et al. 2019). Hence, post-editing competence is stressed as a separate competence.

All in all, the comparison of these two frameworks for post-editor competences with the translator competences mentioned in previous research ((EMT, 2009; EMT Board, 2017; PACTE, 2003) shows that there are many common points both at core and sub-competence levels. In this regard, Olohan (2021) contests the view held by Nitzke et al., (2019) and Rico & Torrejón (2012) that post-editing is a distinct practice from translation in that the competences uttered are remarkably similar. Furthermore, the competences and qualifications required by international standards for post-editing, and translation services are also similar to a great extent (also see ISO 18587:2017, ISO 17100:2015). This paves the way for discussing post-editing as an additional practice to translation tasks rather than a separate field of practice that has competences on its own. Considering this, Olohan (2021) posits that "PEMT constitutes an additional activity that may take place as part of the translation practice, rather than a separate, recognizable practice in its own right" (p. 13). However, the researcher also notes that the professional translation industry demand post-editors and some companies provide training for this purpose. Thus, it can be said that post-editing is seen as a separate job or task that require additional training. Moreover, LSPs were reported to attach great importance to the feedback of post-editors regarding frequently encountered errors. Hence, post-editors should have basic knowledge particularly on MT engines and their maintenance in addition to the competences required for an ordinary translation task.

In short, the competences required of translators and post-editors seem similar in many ways apart from the specific ones that focus on Machine Translation. With this in mind, translator training institutions and trainers should consider these additional competences while designing courses for translator trainees.

5. Conclusion

Machine translation has shaped the language industry profoundly especially in the last ten years. Both translation companies whether small or large scales and individual translators have started to make use of this technology. This is greatly related to the reported increase in the quality of the translation product and this quality increase, in turn, has been acknowledged to stem from the fact that most machine translation engines today are based on a new approach called as Neural Machine Translation. This state-of-the-art technology uses the possibilities of artificial intelligence and tries to imitate human translation in some ways. For this reason, in Neural Machine Translation engines, the translation outputs seem and sound better and more fluent than its predecessor Statistical Machine Translation (SMT). These seemingly better translation outputs hide errors in themselves, hence these errors are not obvious to detect easily. However, they need to be found and edited if the translation is to be fulfilled in a professional way. To this end, the

companies have started to look for trained post-editors that can be aware of the errors and be competent to edit them in line with the requirements laid down either by the company or the client. As such, competences of post-editors become prominent both for the industry and translation academia. Translation companies look for candidates that have these competences and translator training institutions try to equip their students with these competences.

This study first sought to highlight the importance of post-editing for both translation companies and translator training institutions. To this end, previous research was reviewed and discussed with a view to professional requirements and the future of the translation. Then, machine translation was addressed in its historical background, building on which the latest trend Neural Machine Translation was explained. It is seen that more theoretical, empirical, and practical research is needed for this state-of-the-art technology from translation studies perspective since most of the present research takes this technology from an engineering and programming perspective into consideration.

After the historical background of machine translation and its present status were explained, post-editing levels were briefly mentioned in line with the purpose of the translation (e.g. inbound or outbound). It was concluded that translators are having difficulty in deciding on the binary levels of post-editing (e.g. light or full post-editing; partial or complete post-editing). For this reason, the conclusion withdrawn from this study supports that of the previous ones in that the post-editors should be informed about the purpose of the translation by the project manager or the initiator.

As the last step, this study tried to investigate post-editor competences and compare them with translator competences. This comparison showed that competences are mostly similar both for translators and post-editors, however, post-editors are expected to know machine translation-related subjects, as well. For this reason, in competences for post-editors, machine translation knowledge, basic programming skills, and knowledge as to the maintenance of machine translation engines are particularly stressed. With this in mind, translator training institutions can offer courses that directly focus on post-editing considering these competences and professional requirements.

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