## TEACHING LANGUAGES IN THE DIGITAL AGE: INCORPORATING MACHINE TRANSLATION

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**Abstract:** The paper discusses the issue of detrimental usage of automated machine translation platforms in foreign language education settings and, in the view of steady advances in translation technology, proposes reconsidering language teaching and learning practices to adjust them to the new reality. It also exposes some of the machine translation limitations and formulates strategies for integrating translation apps into the conventional classroom activities and home assignments. As an anticipated result, university students are expected to minimize the abuse of translation apps, which will lead to more consistent academic progress.

**Keywords:** language teaching, machine translation, human translation, intermediary language, MT limitations

#### 1. Introduction

Translation services have played a vital role in public life throughout the centuries. Today they remain fundamental for various public events and official ceremonies, for dissemination of knowledge and transmission of cultural, literary and scientific achievements. With this account, foreign language teaching curricula have placed considerable emphasis on translation skills, not only in foreign language majors, but in FLSP programs as well. However, with the rise and continuous advancement in artificial intelligence and automated translation, one might question whether the role of human translators and interpreters will remain relevant and, consequently, whether teaching translation as an academic subject or as part of foreign language curricula at universities will still be necessary.

The role of translation technology in the foreign language classroom has been under the spotlight in the last 20 years now. The existing research mostly discuss the divergent attitudes of language teachers and learners to translation apps (Correa 2011; Ducar & Schocket 2018 as cited in Carré et al., 2022: 190; Clifford et al. 2013 as cited

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in Urlaub et al. 2022: 2; Zhu 2020), the resulting ethical issues (Mundt & Groves 2016 as cited in Carré et al. 2022: 190), short- and long-term learning outcomes (Fredholm 2019: O'Neill 2019: Lee 2021 as cited in Carré et al., 2022: 190-191), alternative methodologies of incorporating machine translation into the learning process (Niño 2009; Benda 2013; Ducar & Schocket 2018; Valijärvi & Tarsoly 2019 as cited in Urlaub et al. 2022: 2-3), as well as efforts of machine translation quality evaluation in most common language pairs in contrast with human translation (Anderson 1995). This article explores the potential advantages and obstacles translation technology presents in the realm of teaching and learning foreign languages in the Armenian university environment, in particular, with the view of the inadequacy of databases in the language pairs with Armenian as either a source or target language and the impelled use of an intermediary language (namely, Russian). Considering the overwhelming influence of translation platforms on students and professionals in various fields, we propose that foreign language instruction should become more tolerant and inclusive of technology. Rather than unsuccessfully trying to prevent systematic abuses of translation apps, we need to elaborate constructive activities to mitigate their negative impacts and derive benefits. The study draws from our empirical observation of the working habits, performance and the subsequent academic ability of university students learning English in the fields of Political Science, International Relations and Public Administration.

Translation is a complex and time-consuming process of transferring meaning from one language to another which requires the translator's comprehensive understanding beyond the knowledge of individual words and grammar rules. Considering situational, cultural, structural and other inter-linguistic differences, it "refers to instances of real language use, whether spoken or written" (Kenny 2022: 23). In fact, translation technology has been developed to facilitate translators' work in the contemporary conditions of increased workloads. It is a tool of mediated translation using existing databases and parallel data in any given language pair.

There are two common forms of translation technology. One is the so-called Computer Assisted Translation (CAT), which mediates human translation by providing instant access to vast resources in both languages, such as terminology databases, spelling and grammar references, and pre-existing translation. Paid translation platforms (like *MemoQ*, *Crowdin* and *SDL Trados*, to name just a few) provide invaluable assistance to translation agencies. Their functions and characteristics allow professional translators to create quality content greatly shortening the time and effort the latter used to invest to manage enormous loads of work in the past.

The other important development is machine translation (MT). Although the two terms are interrelated, they represent different phenomena. While CAT is limited to supporting human translators, MT tools are automated and do the entire work on their own: the human only inserts the text. Simply put, it is "translation performed by a computer program" (Kenny 2022: 23).

This paper mostly focuses on machine translation for it has firmly entered the contemporary life and has a profound and controversial effect on many aspects of human activity.

#### 2. A Brief Overview of Major Translation Tools in Armenia

It seems reasonable to overview translation platforms freely accessible to Armenian students and professionals. Responding to the request to name the apps they find helpful for translating from and into Armenian, the greater part of our students at YSU faculty of International Relations (CEF Levels A2-B2) highlighted *Google Translate* as the most popular tool with numerous functions, including but not limited to translating words, sentences, print or handwritten texts, whole websites and even images. Sadly, due to the limited parallel data in the AR< >EN language pair, the quality of the output still leaves much to be desired. Since *Google Translate* manages to convert RU< >EN sentences and texts with decent quality, many students translate into Russian first and then into Armenian using Russian as an intermediary language.

Number 2 well-liked website is *Yandex Translate*, despite the same problem as above. A text filled with minor syntactic and logical errors still makes sense and allows saving time on reading comprehension. Students are attracted by the prospect of transforming challenging political texts into relatively intelligible passages in just one click. The image translation feature comes in particularly handy converting texts from photos on the phone.

A few students opt for *iTranslate*, which provides text, voice, keyboard, camera and offline translation, with quality of service in Armenian being somewhat better than the aforesaid systems. A less familiar platform for translation from and into Armenian is *Translate.com*, which sets limits for character entries, thus making it unsuitable for long text translations. On the other hand, the text divided into smaller chunks is more easily processed, resulting in a more accurate output.

International Relations students at MSU Yerevan Branch and other learners with good knowledge of Russian give preference to *DeepL Translate* and *Reverso Translation*, both providing more sensitive and nuanced interpretation of original texts. In addition, the former offers translation editing opportunity to optimize the translated sentences, whereas the latter cites supplementary real-life examples and explanations to assist students in improving their language skills.

As can be seen, being presented with a good choice of free MT software, our students lack tools of quality translation from and into their mother tongue and hence have to seek alternative solutions. Many use Russian in some way or another to mediate between Armenian and English. Others make use of spelling and grammar checking, proofreading and paraphrasing platforms, such as *Quillbot*, *Grammarly* and *ChatGPT*.

Finally, online or mobile dictionaries represent a special case of MT. The best dictionaries by far, according to our students' estimate, are *Multitran* dictionary and app, followed by *ABBYY Lingvo*. Due to the increased accessibility to language resources and parallel data, they combine single words, set expressions, idioms and proverbs in one tool, thus facilitating the search. Although, in this respect too, the Armenian software still falls short of being ideal, *Ankyunacar Online Armenian Dictionaries* partly fill the deficiency.

#### 3. Controversies over Translation Technology Efficacy

Undoubtedly, the creation of translation technology has brought about numerous benefits. People around the world use it for various personal and professional purposes, whether to study, work, communicate or recreate themselves. One area that has gained from it immensely is translation industry. Applying high-quality paid CAT tools, freelance translators, translation offices and businesses dealing with foreign partners and/or clients are now capable of managing more workloads in shorter time periods. Similarly, there are a lot of prospects for using machine translation in the academic field and everyday life. In particular, through technology people can translate from and into a completely unfamiliar language to learn about the results of groundbreaking research, to comprehend instruction sheets for medical drugs and various appliances, read books not available in their native language, and so on. This usage is commonly referred to as machine translation for assimilation (Kenny 2022: 34). In addition to foreign language teaching apps, automated translation provides self-learning opportunities to those who wish to master a foreign language on their own, such as self-check in translation practice, composing a piece of writing, keeping a diary, watching a movie. Furthermore, sophisticated platforms deriving data from rich corpora are able to decipher intricate phrases and offer appropriate translation of syntactically confusing sentences, which human translators would struggle with.

Nevertheless, the widespread availability and unprincipled usage of MT raise some controversial issues both in language education and professional translation practices. Designed to facilitate students' comprehension and vocabulary expansion, MT can actually hinder their language development by discouraging them from valuable independent learning experiences. On the one hand, the ability of MT tools to convert whole passages in a matter of seconds, even on mobile devices at any place and any time, with no extra capital investment, makes them indispensable for students preparing for exams, employees assigned with the job of handling business correspondence, and busy translation professionals alike. At the same time, foreign language students depend on these apps too heavily for completing their assignments not only at home but also in class, thus depriving themselves of steady language improvement opportunities. Sad as it may be, it actually encourages academic dishonesty. Further, some cases of machine translation for dissemination (Idem), such as small offices and private translators abusing unpaid translation tools, may lead to such issues as whether it is ethical to 'sell' machine translation at the price of humandone work. In fact, many small offices in Armenia avoid hiring professional translators and engage other employees with some knowledge of foreign languages in translation works. Not surprisingly, the latter will have to rely on MT to fulfil the task regardless of significant inaccuracies in the output.

### 4. Adapting Machine Translation Tools for Proper Usage in Foreign Language Practices

Considering the drawbacks and potential negative effects of machine translation as observed in EFL/ESP contexts, language teachers should introduce translation apps as

a tool to *supplement*, not to substitute learners' independent effort, as well as incorporate a variety of language learning activities alongside translation. Providing that students take a conscientious and conscious approach to learning, they will be willing to use MT outputs scrupulously in order to benefit their language acquisition rather than facilitate their homework or get higher grades.

Research suggests that "a language classroom that integrates machine translators must provide learners with experiences where they discover the limitations of machine translators" (Urlaub et al. 2022: 3). This chapter will explore how identifying and overcoming these limitations can help achieve a balance between using translation apps and actively practicing language skills.

#### [1.] Potential for inaccuracies and miscommunication

Although the quality of machine translation today has improved dramatically, it is not flawless, especially for languages not backed up by good corpora. When translating a single word (out of context), slow learners tend to take the first translation for granted rather than consider other available options. This can lead to miscommunication, especially in complex and context-dependent sentence translations. Alternatively, translation of passages from and into Armenian may abound with grammatical, semantic, stylistic and comprehension errors. Take this short episode from *David Copperfield* by Ch. Dickens, as translated by Google:

This was the state of matters, on the afternoon of, what I may be excused for calling, that eventful and important Friday. I can make no claim therefore to have known, at that time, how matters stood; or to have any remembrance, founded on the evidence of my own senses, of what follows. (Dickens 2023)

Այսպիսին էր գործերի վիճակը, այն իրադարձություններով լի և կարևոր ուրբաթ օրվա կեսօրին, ինչի համար ես կարող եմ արդարանալ։ Հետևաբար, ես չեմ կարող պնդել, որ այն ժամանակ գիտեի, թե ինչպես էին գործերը. կամ ունենալ որևէ հիշողություն, որը հիմնված է իմ սեփական զգայարանների ապացույցների վրա, այն, ինչ հաջորդում է։

Cf. Human Translation - Այսպիսին էր իրավիճակը այն ուրբաթ կեսօրին, որը ես որակեցի կարևոր և իրադարձություններով լի և հուսամ, ինձ կներեն դրա համար։ Հետևաբար, ես չեմ կարող պնդել, որ գիտեի, թե այն ժամանակ ինչ էր կատարվել, և կամ ունեի դրան հաջորդած դեպքերի մասին տպավորություններ, որոնք հիմնված էին սեփական զգացողությունների վրա։

Compensating for poor translation output can be challenging but there are some common strategies teachers can adopt to train students to minimize the errors and simultaneously improve their language skills. Prompt your students to do the following:

a) Use various translation platforms and compare the results to get a more meaningful final text (even though most machine translation tools that support Armenian offer roughly the same interpretation). It may be helpful to doublecheck through Russian translation apps.

- b) Break down complex sentences into simpler parts. Long sentences are trickier for technology to cope with. This activity will also enhance learners' syntactic understanding.
- c) Translate a short text through technology, and then translate it manually back into the source language to check against the original version and examine discrepancies.
- d) Challenge the technology by translating a passage more accurately and skillfully. Compare both translations in terms of word choice, grammatical structures, style, etc. In class, encourage peer assessment, maintaining the anonymity of the translator.
- e) Review and post-edit the translation manually, using their own knowledge or judgement and consulting 'constructive' thought-provoking language apps like thesauruses and collocation dictionaries, where insightful choices have to be made thus promoting active learning.

Obviously, the above activities can prove effective providing students' target language proficiency is above intermediate. Below is an extract machine-translated into Russian and post-edited by a student of MSU, Yerevan Branch (corrections are given in parentheses):

The experiences of Abzug, Schroeder, and Kirkpatrick – women with very different political perspectives (two liberal Democrats and one conservative Republican) – are examples of the difficulties that women face when they try to enter the elite world of foreign policy decision-making. In this book, however, I do not intend to focus on strategies to increase the number of women in high foreign policy positions. I believe that these gender-related difficulties are symptomatic of a much deeper issue that I do wish to address... (Tickner 1992: 7)

Опыт Абзуг, <u>Шредера</u> (Шредер) и Киркпатрик – женщин с очень разными политическими взглядами (две либеральных демократки и одна консервативная республиканка) – <u>является примером трудностей</u> (иллюстрирует те трудности), с которыми женщины сталкиваются, пытаясь войти в элитный мир принятия внешнеполитических решений. Однако в этой книге я не <u>собираюсь</u> (намерена) сосредотачиваться на стратегиях увеличения числа женщин на высоких внешнеполитических <u>должностях</u> (постах). <u>Я считаю, что</u> (По моему убеждению) эти <u>связанные с полом трудности</u> (гендерные препятствия) являются симптомами гораздо более глубокой проблемы, которую я <u>действительно хочу затронуть</u> (считаю необходимым рассмотреть)...

#### [2.] Difficulty in grasping idiomatic expressions and cultural nuances

When translating set expressions and idioms through technology, one can encounter a word-for-word translation rather than an exact equivalent. This is because machine translation systems are often incapable of capturing the semantic, syntactical and cultural nuances in both the source and target languages. The resulting expressions may either sound awkward, ridiculous or meaningless to native speakers or, at best, fail to transfer the figurativeness of the original. E.g. 'pnip &b&ble' is translated as 'beat water' instead of 'beat about the bush' or 'drop a bucket into an empty well' (Cf.

'бить воду' in Russian, 'battere l'acqua' in Italian, 'batir el agua' in Spanish, 'Wasser schlagen' in German). Here is also an example of literal reverse translation: 'beat about the bush' — 'διδεί pni μ μωμίι.' Using the idiom in a context repairs the Russian output only: Don't beat about the bush anymore! Come straight to the point! - Uŋ μυ υβ διδεί p ριβ μ ωμιμίι: Πιηρη είμε μειημίι: (Cf. Больше не ходите вокруг да οκοπο! Сразу к делу!). Yet, using Russian as an intermediary language results in another awkward translation into Armenian: 'Uŋ μυ ριβερ 2 μιρ διδιμπιτρ είμιι: Πιηρη μειημίι:' As for Armenian idioms not having direct equivalents in Russian, the translation may turn out fairly misleading. E.g. 'Uβ μυριβ δεριμίνω — 'he cmapemb' — 'don't get old.'

The inadequate grasp of idiomatic expressions by machine translators poses a significant challenge. Yet, the teacher may turn this deficiency into a source of valuable language-learning activities, like the following:

- a) Assign small groups of learners a reading matter that contains idioms in context. Encourage them to work out their meanings by analyzing the contextual clues and using creative thinking and mother tongue awareness to come up with a similar native expression. Afterwards, discuss idiom-related cultural similarities or differences in both languages, such as how they reflect local customs and beliefs. As a follow-up home task, have students translate the entire passage through an app and correct its idiom-related mistakes. This assignment can also be done the other way round. An app provides the literal translation of idioms in context, from which the students try to 'guess' their correct meanings. These activities challenge them to use their critical thinking and creativity, as well as sharpen their native language knowledge.
- b) Require students to use idioms and proverbs in their writing. On the one hand, the task will challenge them to use figurative language thus broadening the range of their vocabulary; on the other hand, it will potentially prevent them from translating the whole piece through an app, as the resulting awkward expressions in the target language will 'let the cat out of the bag.'
- c) Encourage students to prepare idiom quizzes for their peers. These can be as simple as matching the two parts of each idiom. Such practice will stimulate critical and creative thinking and fuel their cultural imagination.
- d) Assign a reading passage with idioms. Encourage students to prepare a quiz by providing definitions from a monolingual English, Armenian or Russian dictionary, whether a virtual or physical one. Their peers are then to adapt the definition to a culturally appropriate expression in the target language.

#### [3.] Deficiency in professional lingo database

On the whole, translation technology seems to cope with professional literature quite competently, even when translating from English into Armenian. Nevertheless, translation of highly specific terms, including professional idioms, presents considerable difficulties as these platforms often lack professional lingo databases.

 $<sup>^{\</sup>rm 1}$  The same translation is produced both by https://translate.google.com/ and https://www.m-translate.ru/

With CAT tools, the translator has an option of adding glossaries to the system or tuning it with domain-specific parallel corpora. In contrast, the less sophisticated MT systems clearly struggle through terminology, whether in or out of context. Consider the Google-translated political terms and idioms below as compared with their human-translated equivalents:

Turf wars — խոտածածքի/տորֆային պատերամզներ (Cf. պայքար ազդեցության ոլորտներ ձեռք բերելու համար), spear-phishing — նիզակ-ֆիշինգ (Cf. նպատակաուղղված խարդախություն անձնական տվյալների հափշտակման համար), water-holing — ջրի փոս (Cf. գրոհ կայքի վարակման միջոցով), to throw in the towel — ձեռնոց նետել (Cf. հանձնվել)

Some black hat organizations even have call centers. — Որոշ սև գլխարկներով կազմակերպություններ (Cf. սև հաքերային կազմակերպությունները) նույնիսկ զանգերի կենտրոններ ունեն։

The party usually punishes those who don't toe the party line. – Կուսակցությունը սովորաբար պատժում է նրանց, ովքեր չեն անցնում կուսակցական գիծը (Cf. չեն հետևում կուսակցության քաղաքականությանը)։

To overcome this limitation, encourage students to seek understandable definitions elsewhere on the web. The last resort is to consult English-Russian online dictionaries, such as *Multitran*, supported by a comprehensive terminology database, and translate into Armenian manually. If no exact translation is found, a descriptive translation can be given. Once a number of terms are converted into the target language, students can challenge their peers through quizzes.

#### [4.] Weakening of brain power and memory function

Human translation involves using such cognitive processes as focused attention, memory, perception, reasoning, problem-solving, critical thinking and decision-making. Overreliance on machine translation weakens the ability of our brain to process information making connections, limits development of thinking skills, as well as stifles creativity and the ability to react spontaneously. Although our primary concern is about machine translation platforms, it is worth noting that even electronic dictionaries are not the best solution for language learners as they also impair their ability to enlarge the target language vocabulary. Words translated through technology are not well retained in memory. When looking words up in a physical dictionary, we perform the physical (strenuous) activity of searching for meanings and studying contexts where the words are used, which stimulates the memorizing function of the brain. When using translation technology, we do not learn actively, but rely on automatically provided equivalents.

To respond to this challenge, encourage students to make use of online thesauruses and collocation dictionaries instead of MT apps and reflect their 'brainstorming' process on paper. Promote vocabulary buildup through creating opportunities for a meaningful interaction and engaging students in follow-up activities to reinforce the

key new words. These can include conventional practices, like writing and narrating short stories using the target words, with each student in a small group producing his/her share of work; creating mental associations with the words in the native language; integrating the new words in classroom communication; peer quizzes with one student naming a word in the source language and another providing a sample sentence.

#### [5.] Hindering language production skills

Overreliance on translation and, in particular, on MT tools may discourage learners from immersing themselves and experimenting in the target language and culture. Moreover, they become dependent, or even addicted to technology and may feel unarmed to communicate or perform an assignment without access to it. The only adequate remedy to this problem is to adopt a communicative approach and interactive exercises, including but not limited to the following:

- a) If your students are already addicted to technology, turn this into a useful habit by incorporating language apps and games, such as *Alias, Lingio, WordUp, Wordle, Word Wipe, Word Scramble,* and many more. For professional terminology, use game-generating platforms like *Educaplay* to create engaging learning opportunities tailored to your students' proficiency level, as well as encourage students to develop their own games. Guide them into practicing the language independently through AI-supported systems like *TalkPal, GPTionary, Soofy* and *Languate*.
- b) Alternatively, use conventional gaming activities and contests, such as *Spelling Bee* and *Who Wants to Become a Millionaire*, encourage acting out dialogues, news reports, polls, negotiations and conferences.
- c) Have students listen to/watch short audio or video clips and transcribe what they hear. Depending on their proficiency level, you can allow them to read along the subtitles and then reproduce the content in writing or verbally. As an easier option, students are to take good notes of what they hear in small groups and discuss them supplementing each other's omissions.
- d) For news rendering assignments get students to watch a video footage in the native language and spontaneously render the content in English to a partner.

#### [6.] Promoting academic dishonesty

When students in the information age use MT to get the gist of their intricate political English readings and save time, they cheat consciously: they are convinced AI is intended to assist humans. When students use MT to reproduce their compositions, essays, projects and speeches that they preliminarily produced in their mother tongue, they cheat unwittingly in the belief that their work comprises no plagiarism. In both cases, they submit decent pieces of dubious value and no growth can be achieved in the long run. In fact, "students will get caught out not because their writing is riddled with errors but because it is too good for their level" (Carre et al. 2022: 189). However, in Armenian educational settings this will often go unnoticed leaving the teachers silently discontent.

To prevent such striking instances of academic dishonesty, promote independent writing and translation through the following strategies (Karapetyan 2022: 91-92):

- a) Before actually writing an essay, encourage students to draw up a plan and express their thoughts on the topic orally in class. Equip them with the lacking vocabulary to put the ideas on paper later. Oblige them to follow through with the original plan and ideas.
- b) Get them to write one paragraph using their existing vocabulary, no matter how limited. Motivate peer assistance and correction.
- c) Avoid grading their writing. Students usually cheat to get high grades.
- d) Require students to provide two or three alternative translations for the same sentence, with different grammatical structures and wording.
- e) Have paired students simulate consecutive interpreting to their partner.
- f) Assign all translation/interpreting assignments to be done on the spot in class (without smartphones).

#### 5. Reducing the Need for Human Translators?

On the surface, the availability of finest translation tools seems to question the worth and purpose of teaching and learning the art of translation per se. With translation apps at hand, most students opt for not taking trouble of working on translation assignments themselves (which is a time-consuming and challenging task). It is not rare to witness entire translation projects being carried out through technology, with little or no independent post-editing.

In addition, many students question whether the translator's skills will still be necessary in the years to come, upon the ongoing refinement in translation technology? According to the MT evaluation results of 1994, "on the average, MT systems perform only about 65% as well as expert human translators" (White, et al. 1994 as cited in Anderson 1995: 69). In contrast, the recent developments already provide superior quality written text translations in dominant languages and have even brought about devices that instantly convert one spoken language into another.

It is true that translation technology has the future in its hands. Let us not forget, however, this software is designed through collaboration of programmers and translation professionals, and so expert human translators will always be in demand, at least to ensure further developments in technology.

"Human translation has a role to play, in other words, in both the evaluation of machine translation output and in the diagnosis of problems in that output. Secondly, and even more crucially, most contemporary machine translation relies on translations completed by humans to learn how to translate in the first place." (Kenny 2022: 30)

Moreover, there are still many areas of expertise that technology cannot reach. After all, language proficiency is much more than an unsophisticated exchange of messages, but rather a result of the "richness and complexity of human interaction, identity, and culture" (Urlaub et al. 2022: 3). No matter how effectively technology

works, human intelligence will always excel because of creativity, ingenuity, expertise, as well as the ability to feel linguistic nuances and adapting to them.

#### 6. Conclusion

Admittedly, translation will always play an essential role in human activity and interactions. With the advent of translation technology, human translators' work has been greatly facilitated. However, while this revolutionary innovation brings efficiency to large businesses and helps smaller ones to enter global markets, its impact on foreign language education as observed in Armenia has been mostly adverse in that it deprives learners of independent work and favorable learning outcomes, causing reluctance to use their own creativity and critical thinking skills.

Let us face it, though. In the age of information and communication technology we cannot prevent our students from using translation apps to do the whole work for them. Instead, we should naturally change with the times and guide the young generations into using technology to benefit their learning. In fact, translation technology may be indispensable for the future success if employed correctly, and so learners of foreign languages and future translators should adopt a judicious and responsible approach to using it.

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#### **Conflict of Interests**

The author declares no ethical issues or conflicts of interest in this research.

#### **Ethical Standards**

The author affirms this research did not involve human subjects.