Comparing Human and Machine Translation: a Survey with Italian University Students Learning Russian

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Abstract. The paper presents the results of a survey conducted to evaluate the ability of Italian-speaking students learning Russian to compare three types of translation: machine, human, and post-edited. The task was assigned to four groups of students enrolled in two Italian universities and comprised three parts. First, participants were asked to classify the three translations. Second, they were required to state which text was more suitable for journalistic use and which one they preferred. In the third section, they were asked to identify the differences between the three translations. The results showed that students who attended more specialized courses on translation performed better in the classification task. Some students expressed a preference for automatic and post-edited translations and found them more suitable for journalistic use. Interestingly, this was sometimes the case even for students who did not fail in the classification task. Finally, the analysis of individual responses to the last question revealed that the distinctions between the three translations are not always easily recognized, and the students' use of metalanguage often lacks precision and awareness.

Keywords: Machine Translation, Human Translation, Translation Training.

1 Introduction[1]

This paper documents the initial stages of an extensive project aimed at determining appropriate levels of training for translation professionals who work with the Russian-Italian language pair in Italy, considering the increasing role gained nowadays by machine translation tools.

Specifically, we report the results of a preparatory didactic experiment that tested the ability of Italian-speaking learners of Russian to compare three types of translation:

[1] This work stems from the close collaboration between the three authors. Francesca Biagini is responsible for Sections 1, 1.1 and 2; Valentina Noseda for Section 3; and Anna Bonola for Section 4.

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a fully machine-translated text, a fully human-translated text, and a machine-translated text that underwent post-editing.

The article is organized as follows: in Section 1.1 we provide a brief state of the art on the role of machine translation today, with a focus on language education and, in particular, on translation training. Section 2 is devoted to the description of the experiment and of the methodology adopted to analyze participants' answers. Section 3 presents and discusses the results. Conclusions will be offered in Section 4.

1.1 Machine translation and translation training

The development of neural machine translation[2] (NMT) [Monti 2023: A58-59] has led to the creation of new translation software that can achieve high levels of accuracy when translating different types of text [Mattioda et al. 2023; Popel et al. 2020]. This has significant implications for the labor market and language education, particularly in the training of interlingual translation professionals[3].

Insights on the impact of MT on university teaching began several years ago, even before the advent of neural systems. Clifford et al. [2013: 109] offer a review of studies between 1997 and 2011 that question how students can use these tools constructively. Today, the relevance of such reflections has increased due to the precision achieved by NMT. This inevitably leads to a reconsideration of the role of humans in the translation process. It is not a coincidence that the European Master in Translation of 2022 has updated the list of core competencies for future translators and interpreters to address the new challenges posed by the market.

Currently, it is certain that NMT software will not replace human translators but will rather expedite their work. This is especially true for some text types, such as literary texts [Arenas, Toral 2020; Brusasco 2022; Toral, Way 2018]. However, even with other genres where NMT seems to be very promising, scholars caution that while NMT software may exhibit high morphosyntactic performance, it often produces 'invisible' sense errors that require accurate proofreading and post-editing to identify [Mattioda et al. 2023: A4]. Similarly, Riediger and Galati [2023: A45] argue that the fluency and readability of machine-translated texts can cause non-experts to lower their attention threshold, leading them to trust a product that is, in many respects, limited. This is consistent with Monti's findings [2023: A63], according to which the quality currently achieved by neural systems also has its pitfalls: a translation that appears to be correct and fluent on the surface may hide semantic and terminological errors, omissions, additions and so forth. Mattioda et al. [2023] also highlight the significance of pre-editing, since this optional step can aid the machine translation process by correcting potential errors in the source text, particularly at the grammatical, spelling, and punctuation levels, as well as eliminating ambiguities and simplifying syntactic

[2] At present, neural machine translation systems are the ones offering better translations, but in the near future a central role will be played by large language models (LLMs) as well [Eloundou et al. 2023]. At present, several scholars are investigating the role of LLMs in automatic post-editing, exploring the potentialities and limitations of such instruments [Raunak et al. 2023].

[3] An exhaustive literary review on this topic is provided by Ragni and Nunes Vieira [2022], although it considers only the period 2015-2019.

structures. Finally, Riediger and Galati [2023: A39] argue that while NMT can compete with or surpass human translators in terms of equivalence, it cannot match human translators in situations where communicative sensitivity, cultural adaptation, and transformation are required. Therefore, there is no doubt about the permanence of the 'centrality of the human'. Human work in preparing and revising texts will remain indispensable. However, it is also undeniable that training new professionals to ensure the quality of automatically translated texts is necessary [Monti 2023: A57; Brusasco 2023: 25]. In this context, universities play a fundamental role in equipping students with the necessary tools and skills to work effectively and conscientiously with NMT [Silvestrini 2023; Brusasco 2023: 27].

One aspect to consider when dealing with translation is the specificity of each language. Referring to other works, Rico Pérez [2024] lists several types of errors commonly produced by NMT engines, adding that translators need to be aware of them during post-editing. However, given the existence of language-specific structures, we emphasize that any guidelines or training programs for translators must be tailored to each language pair. Moreover, it is important to take into account the variability in NMT performance. For instance, while it is generally high when translating between European languages and English, it is less so for languages with less 'trained' software: "because NMT systems are corpus based [...], they will produce poorer results when too little data is available to train the system" [Carré et al. 2022: 195].

Considering all this, language-specific criteria for intervening on machine-translated texts should be established, considering the textual structure of each language and distinguishing between different literary genres. Specific training courses should be created, and a model for introducing machine translation tools into language teaching should be offered to promote their conscious and profitable use from the earliest years of the university cycle. To achieve this goal, it is important, first of all, to assess the current level of students' proficiency in managing NMT tools in order to address the issue in a targeted way. The experiment we conducted was precisely aimed at this intent.

2 Description of the experiment

The experiment involved distributing a survey during class time to four groups of Italian-speaking students (85 total), each with varying proficiency levels and enrolled in two different degree programs: one from the Department of Interpreting and Translation of the University of Bologna (Forlì Campus) and the other from the Faculty of Linguistic Sciences and Foreign Literatures at the Catholic University of the Sacred Heart in Milan. In the following table, a schematic description of the four groups is presented:

Table 1. Description of the groups.

Group ID	University	CEFR level	N. of students
1	Forlì	B1	12

2	Forlì	C1	8
3	Milan	B2	41
4	Milan	C1	24

It is worth noting that the Forlì groups are following a specific degree program aimed at training translators. Therefore, they should be more familiar with both translation practice and the use of translation aid technologies[4].

Prior to commencing the survey, students were provided with four texts: an original text in Russian and three Italian translations. One translation was completed by a student (from now on, H [human]), another with a Machine Translation tool (specifically, DeepL[5]) (M), and the third was initially translated by DeepL and then edited by a student (PE [post-edited]). Despite being completed by a student, in our judgment, the human translation was of a high standard, with only one minor lexical error, which went unnoticed by the majority of respondents. In contrast, the post-editing performed on PE was rather superficial[6].

The source text – an excerpt (276 words) of a newspaper article from the Russian BBC website[7] about the Nagorno-Karabakh conflict – was selected based on its level of difficulty, ensuring it was appropriate for all groups. As suggested by [Riediger, Galati 2023: A47], we then assessed its "automatic translatability" to determine its suitability for post-editing.

The survey consisted of three questions asking students to classify each translation as either H, M, or PE. Following this, they were asked to determine which translation would be more suitable for publication in a newspaper[8] and which one they preferred. These questions aimed to assess how an average reader would appreciate the texts. Finally, students were asked to detect the aspects that distinguished the text that, according to their judgment, had been translated by a person from that translated by a NMT tool. Students were not asked to detect possible errors or mistranslations in M, but just to identify what precisely differentiated one text from the other. For the analysis, we identified some keywords in the answers to this last question and then counted the number of students who mentioned them. Note that the list of keywords has the mere purpose to report students' perception of the analyzed texts, in order to assess their knowledge and awareness of the differences between H and M. Therefore, although some terms are not "scientific" *per se*, they were kept in their original

[4] We point out that all students involved in the study, despite being L2 learners in the traditional sense, are trained to translate between their L2 and L1. However, students from Forlì attended a greater number of courses focused on translation studies and translation training compared to those from Milan.

[5] DeepL was chosen because, at the time the experiment was conducted (February 2024), it was found to provide the most accurate Italian translation of our source text compared with other tools (Google translate and Yandex translate).

[6] By the term 'superficial', we mean that M was only slightly improved from a syntactic and lexical point of view. Furthermore, some minor errors that appeared in M were not corrected.

[7] https://www.bbc.com/russian/features-54427054, last accessed 2024/03/22.

[8] This parameter was left open to the interpretation of the students included in the study, regardless of their university. It was assumed that they all possessed at least a general understanding of the key features defining a newspaper article.

formulation as they reflect students' knowledge of the metalanguage. Only in a few cases, it was deemed necessary to reinterpret students' definitions and group them under a single label. Moreover, although the concept of "literal" or "non-literal translation" encompasses a multitude of specific nuances, such as word order, explicitation, segmentation and so forth, every mention of these aspects was considered and accounted for (in Section 3, an example is provided).

3 Results and discussion

In this section, we present the results of the analysis. Table 2 and Figure 1 provide a summary of students' responses to the first three questions. In the table, errors in the identification of the texts are highlighted in red.

Table 2. Responses to the first three questions.

Group	Answers	1. Which text has been translated with a machine translation system?	2. Which text has been translated with a machine translation system and then revised by a person?	3. Which text has been translated by a person?
1	H	0	1	11
	M	12	0	0
	PE	0	11	1
2	H	1	0	7
	M	7	0	1
	PE	0	8	0
3	H	9	3	29
	M	24	12	5
	PE	8	26	7
4	H	1	9	14
	M	21	1	2
	PE	2	14	8

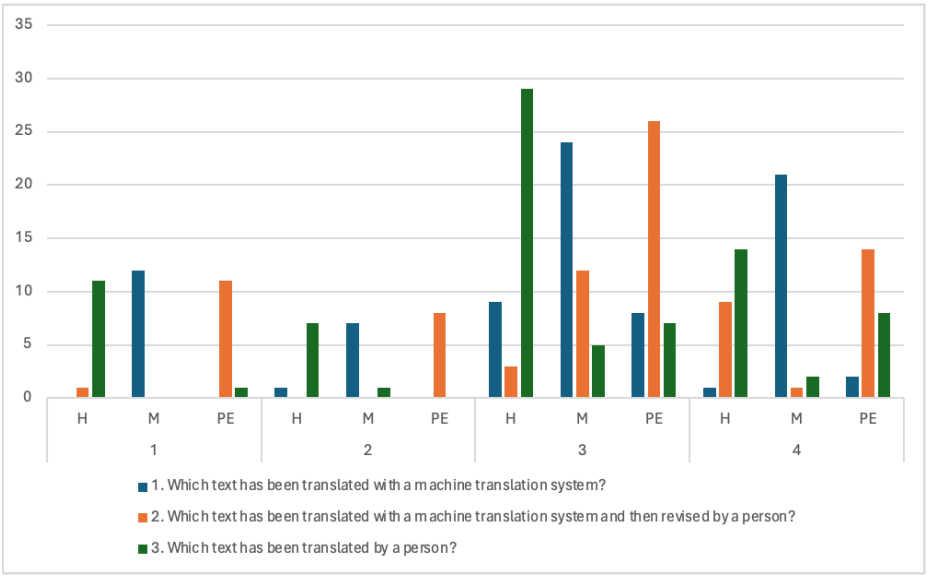

Fig. 1. Responses to the first three questions.

While the groups are not perfectly comparable due to their different sizes, the relative frequencies indicate that the two Forlì groups (1 and 2) generally provided more correct answers. This observation is in line with the assertion made in Section 2, namely that students in Forlì are enrolled in a specific university course aimed at training translators, making them more familiar with both translation practice and machine translation tools.

Specifically, in group 1, only one student out of 12 (8.3%) confused H with PE. However, this student's classification of the distinguishing aspects of H and M was precise and appropriate. This suggests that s(he) subsequently identified the correct texts[9]. In group 2, only one student out of 8 (12.5%) mistook H for M. However, as this student's comments solely comprised a list of examples without explanation, they were disregarded. In contrast, groups 3 and 4 exhibited less familiarity with translation practice and NMT. In group 3, the identification of H versus automatic text (post-edited or not) was correct in 29 out of 41 cases (70.73%). Among these, only in 21 cases (51% of the total) the identification of all 3 texts (H/M/PE) was correct, while in the remaining 8 cases, H was recognized, but M and PE were confused with each other. Those who failed to identify H (12 out of 41, i.e., 29%) confused it with M in 5 cases and with PE in 7 cases.

Regarding group 4, only 13 out of 24 students (54%) correctly identified all three translations. Of the 11 students who made at least one mistake, the majority (8) correctly identified M, but confused PE with H, which is surprising, given their supposed level of proficiency (C1). Among them, one student failed to correctly identify any of the texts, one confused M with H, and another confused M with PE.

[9] It was not possible to modify previously submitted answers.

Table 3 and Figure 2 show how students responded to the questions on suitability for a newspaper and appreciation of the texts:

Table 3. Responses on suitability for a newspaper and appreciation.

Group	Answers	1. Which text would be more suitable for publication in a newspaper?	2. Which one do you prefer?
1	H	10	11
	M	0	0
	PE	2	1
2	H	7	7
	M	1	1
	PE	0	0
3	H	35	26
	M	3	5
	PE	3	10
4	H	14	13
	M	0	1
	PE	10	10

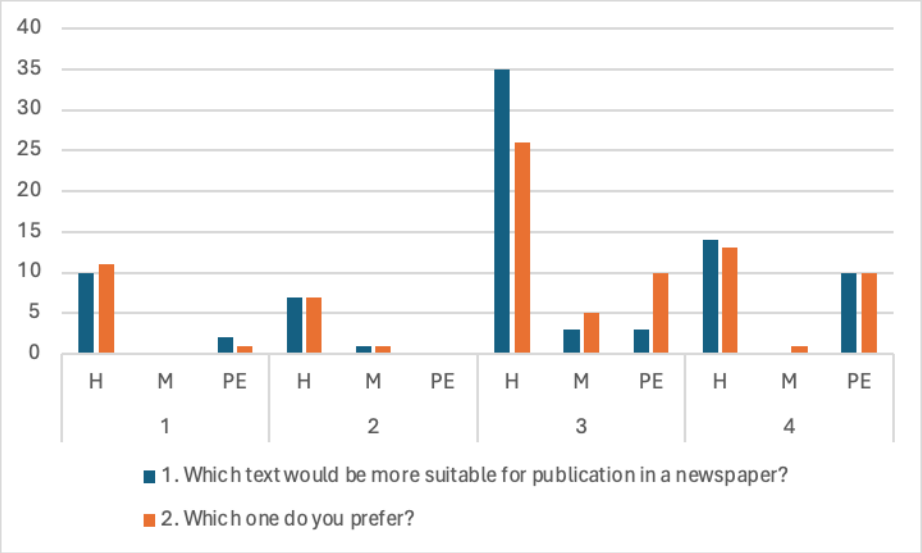

Fig. 2. Responses on suitability for a newspaper and appreciation.

In this case there were no right or wrong answers. Not surprisingly, students who prefer and find M or PE more suitable for a newspaper are mostly those who made identification errors. For example, in group 2, the only student who preferred M and thought it would fit more in a newspaper, was the same who mistook it for H. As far as group 3 is concerned, among the 20 students who made at least one mistake in identifying the texts, three chose M and one chose PE in the first question, five out of 20 preferred M, and three preferred PE. Finally, in group 4, among the 11 students who failed to correctly identify the translations, three considered PE to fit more in a newspaper and liked it best; one considered PE more suitable for a newspaper, but preferred M, while three participants preferred PE, but judged H more suitable for a newspaper.

More significant, however, is the case in which M or PE were preferred by students who correctly identified the three texts. For instance, in group 1, two of such students considered PE to fit more in a newspaper and one of them even liked it best. In group 3, among the 21 respondents who correctly identified all three texts, two considered PE more suitable for a newspaper and one of them also preferred it. Six respondents out of 21 liked PE more, although they considered H more suitable. Similarly, in group 4, among the 13 students who correctly identified all texts, six found PE to fit more if published in a newspaper and three of them liked it best.

These data may be attributed to the fact that M and PE present less complex language and syntactic structures, which may appeal more to today's young readers accustomed to a 'sub-standard' variation of Italian [Amenta, Assenza 2018]. M, and to some extent PE, follow the structure of the Russian ST, which is simpler and paratactic as opposed to standard written Italian, whose syntax is more complex and hypotactic [Govorucho 2001]. Recent works focusing on the language of Italian university students[10] [Amenta, Assenza 2018; Restivo 2022; Restivo 2023;] have documented that their written language is predominantly paratactic [Restivo 2022: 803], "subordination does not extend beyond the second degree; moreover, a preference for implicit subordinate constructs over explicit ones is observed" [*ibidem*, 804]. According to Restivo [2023: 9], in general, "traits that characterize the formal texts produced by university students include incorrect prepositional regencies, improper use of personal and relative pronouns, failure to observe the consecutio temporum, fragmented syntax, lexical poverty, and deficiencies in textual cohesion and coherence". Several issues are also noted in the sphere of punctuation [Pecorari 2022; Titus-Brianti 2019].

All these trends may be linked to the fact that some of the features characterizing the language of chats and text messages, defined by Titus-Brianti [2019] "*e-italiano*" [e-Italian], have entered the written language of students, even in contexts involving formal writing, such as graduation theses. However, a comprehensive understanding of this phenomenon needs further investigation which goes beyond the scope of our study.

Figure 3 provides an overview of students' responses to the last question, where they were asked to specify the aspects that differentiated H from M. As mentioned in Section 2, we took some keywords that were more or less present in the responses and parametrized them for the analysis. Responses from students who mistakenly confused H with M or PE were excluded, while those from students who recognized H but

[10] See the project "UniverS-Ita": https://site.unibo.it/univers-ita/en (last accessed on 13 June 2024).

confused M and PE were included, given their similar characteristics. Ultimately 63 responses were retained: 12 from group 1 (blue line in Fig. 3), 7 from group 2 (orange), 30 from group 3 (gray), 14 from group 4 (yellow).

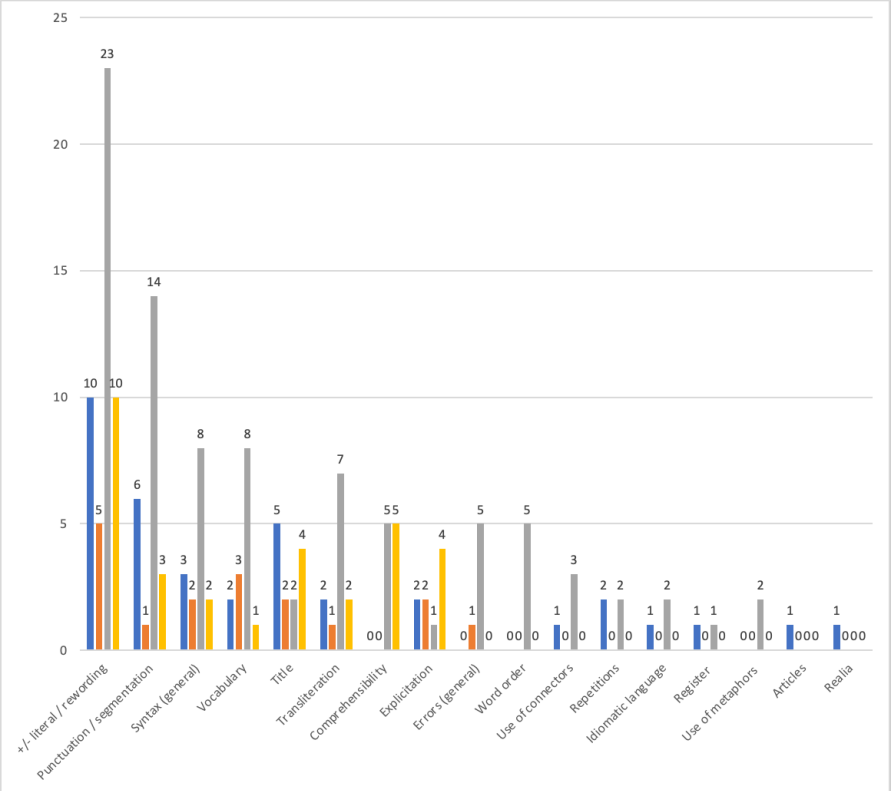

Fig. 3. Responses on the differences between M and H.

In what follows, we present the answer of a student to exemplify how the keywords have been extracted:

"L'uso della **punteggiatura**, di **periodi complessi** e la tanta **rielaborazione** (già visibile dal **titolo** del testo 1[11]) sono tratti tipici di una traduzione svolta da una persona. Il testo tradotto dal sistema di traduzione automatica è più una traduzione **letterale**".
[The use of **punctuation**, **complex periods** and so much **rewording** (already visible from the **title** of Text 1) are typical traits of a translation carried out by a person. The text translated by the machine translation system is more **literal**]

In this case, one point was assigned to the parameter 'punctuation / segmentation', one point to 'syntax (general)', one point to 'title', and one point to '+/– literal / rewording'.

Below, we provide a more detailed explanation of each parameter.

[11] When given to the students, the three texts were simply numbered. 'Text 1' equals H.

- *More/less literal – rewording:* this general description is the most widespread across all groups, with 76.1% of students noting that M was "more literal", meaning it closely adhered to the source text (ST), while H often deviated from the ST. An example provided by a student illustrates this phenomenon:

(1)

ST	[...] *вызвало* ***всплеск эмоций*** *в Азербайджане*. [caused a **surge of emotions** in Azerbaijan]
H	[...] *scatenò* ***non poche reazioni*** *in Azerbaigian* [triggered **quite a few reactions** in Azerbaijan]
M	[...] *provocò* ***un'ondata di emozioni*** *in Azerbaigian* [caused **a surge of emotions** in Azerbaijan]

In (1) we can see that the Russian expression *vsplesk ėmocij* [a surge of emotions] is rendered literally in M, whereas it has been rephrased in H, shifting the focus from the metaphorical meaning of the construction '*vsplesk* + GEN' to its merely quantitative function [Benigni 2022].

- *Punctuation – segmentation*: 38% of students observed a difference in punctuation, leading to different sentence segmentation in the two texts (H vs M). An example is illustrated in (2), where in H two sentences are linked through a relative pronoun (*i quali*), while M reproduces the original split in two distinct sentences.

(2)

ST	*Нагорно-Карабахская автономная область входила в состав Азербайджанской ССР, но была населена преимущественно армянами. В конце 1980-х годов армяне обратились к руководству СССР* [...] [The Nagorno-Karabakh Autonomous Oblast was part of the Azerbaijani SSR, but was predominantly populated by Armenians. In the late 1980s, Armenians appealed to the USSR leadership]
H	*La regione autonoma del Nagorno Karabakh faceva parte della Repubblica socialista sovietica azera, ma era prevalentemente abitata da armeni,* ***i quali*** *alla fine degli anni '80 si appellarono alla dirigenza dell'URSS* [...] [The autonomous region of Nagorno Karabakh was part of the Azerbaijani Soviet Socialist Republic, but was predominantly inhabited by Armenians, **who** in the late 1980s appealed to the USSR leadership]
M	*L'Oblast' autonoma del Nagorno-Karabakh faceva parte della RSS azera, ma era popolata prevalentemente da armeni. Alla fine degli anni '80, gli armeni si appellarono alla leadership dell'URSS* [...] [The Nagorno-Karabakh Autonomous Oblast was part of the Azerbaijani SSR, but was predominantly populated by Armenians. In the late 1980s, Armenians appealed to the leadership of the USSR]

Moreover, a few students mentioned that punctuation was "more adequate" in H, without providing any examples.

- *Syntax (general)*: 23.8% mentioned the general use of syntax, describing it as "better-constructed", without specifying any particular aspect.

- *Vocabulary*: 22.2% of students named some differences in the use of vocabulary, claiming that in H it was more "refined" or "more proper", "with the aim of enhancing meaning and fluency". No specific examples were provided.

- *Title*: as shown in example 3, the title of H underwent significant rewording. Surprisingly, only 20.6% of students noticed this, despite the substantial differences between M e H in relation to ST:

(3)

ST	*С чего начался конфликт и при чем здесь Армения и Азербайджан?* [Where did the conflict start and what do Armenia and Azerbaijan have to do with it?]
H	*Nagorno Karabakh: alle radici del conflitto tra l'Armenia e l'Azerbaigian* [Nagorno Karabakh: at the roots of the conflict between Armenia and Azerbaijan]
M	*Dove è iniziato il conflitto e cosa c'entrano Armenia e Azerbaigian?* [Where did the conflict start and what do Armenia and Azerbaijan have to do with it?]

- *Transliteration*: 19% of the participants noticed that M does not employ scientific transliteration, which is required in Academic context in Italy. For example, *Горбачёв* was rendered as *Gorbaciov* in M, instead of *Gorbačëv*. Although scientific transliteration is not commonly used in newspaper articles and is not mandatory, we decided to include this parameter because it helped several participants to distinguish between H and M.

- *Comprehensibility:* comments related to greater clarity of H compared to M were grouped under the heading "comprehensibility". This aspect was mentioned by 15.9% of the students, although no specific examples were provided.

- *Explicitation*: this aspect was noticed by 14.2% of the participants. In H, acronyms were made explicit (see example 2, where *SSR* became *Repubblica socialista sovietica* in H, but remained *RSS* in M) and some implicit passages were better clarified, as shown in (4):

(4)

ST	*Правительство СССР пыталось решить вопрос силой, но аресты представителей национального движения в Карабахе, Армении и Азербайджане только усилили их поддержку среди населения и вражду между двумя республиками. В январе 1990 года армянские погромы произошли в Баку, а 20 января в столицу Азербайджана вошли армейские подразделения* [...] [The Soviet government tried to resolve the issue by force, but the arrests of representatives of the national movement in Karabakh, Armenia and Azerbaijan only increased their support among the population and the enmity between the two republics. In January 1990, Armenian pogroms took place in Baku, and on 20 January army units entered the capital of Azerbaijan]
H	*Il governo sovietico tentò di risolvere la questione con la forza, ma gli arresti dei membri del Movimento Karabakh nell'enclave, in Armenia e Azerbaigian*

	non fecero altro che rafforzare il loro sostegno tra la popolazione e inasprire l'ostilità tra le due repubbliche, ***come dimostrano*** *il pogrom armeno di Baku del gennaio 1990 e l'entrata delle unità dell'esercito armeno nella capitale azera il 20 gennaio dello stesso anno* [...] [The Soviet government tried to resolve the issue by force, but the arrests of members of the Karabakh Movement in the enclave, Armenia and Azerbaijan only strengthened their support among the population and exacerbated the hostility between the two republics, **as evidenced by** the Armenian pogrom in Baku in January 1990 and the entry of Armenian army units into the Azerbaijani capital on 20 January of the same year]
M	*Il governo sovietico cercò di risolvere la questione con la forza, ma gli arresti dei rappresentanti del movimento nazionale in Karabakh, Armenia e Azerbaigian non fecero altro che aumentare il loro sostegno tra la popolazione e l'inimicizia tra le due repubbliche. Nel gennaio 1990 si verificarono pogrom armeni a Baku* [...] [The Soviet government tried to resolve the issue by force, but the arrests of representatives of the national movement in Karabakh, Armenia and Azerbaijan only increased their support among the population and the enmity between the two republics. In January 1990, Armenian pogroms took place in Baku]

In both the ST and M the logical connection between the first and the second sentence remains implicit and open to interpretation. In contrast, in H this connection is made explicit by adding *come dimostrano* [*as evinced by*].

- *Errors*: one participant noticed that in M the expression "Armjanskaja SSR" was erroneously rendered as "Armenian URRS", instead of "RSS". In addition, some of the students who incorrectly identified M in PE, noticed a mistranslation in this version, attributing it to M. Example 5 shows how the adverbial subordinate introduced by the gerund is ambiguous, leading to a distortion of the original meaning.

(5)

ST	*Нагорно-Карабахская автономная область входила в состав Азербайджанской ССР, но была населена преимущественно армянами.* [The Nagorno-Karabakh Autonomous Oblast was part of the Azerbaijani SSR, but was predominantly populated by Armenians]
PE	*L'Oblast' autonoma del Nagorno Karabakh,* ***facendo parte*** *della Repubblica Socialista Sovietica Azera, era però a quel tempo abitata principalmente da armeni* [...] [The Autonomous Oblast of Nagorno Karabakh, **being part** of the Azeri Soviet Socialist Republic, was however at that time inhabited mainly by Armenians]

- *Word order*: 7.9% mentioned a difference in word order, indicating that M more closely resembled that of the original.

- *Use of connectors*: those who mentioned this parameter (6.34%) likely referred to the aforementioned fact that, unlike Russian, Italian exhibits a higher degree of hypotaxis, whereas M tends to reproduce the parataxis typical of Russian texts. This

was evident, first of all, through the use of relative pronouns, actively employed in H to link two sentences (see example 2).

- *Repetitions*: 6.34% mentioned the attempt to avoid repetitions in H. Example 2 illustrates an instance of how this was achieved: the use of the relative pronoun avoids repeating the word "Armenians". A further example is illustrated in (6), where in M the word "conflict" is repeated, as in ST, whereas H proposes a variation, using *conflitto* [conflict] and *avvenimento* [event]:

(6)

ST	[During the **conflict**, the total number of casualties on both sides amounted to more than 30,000 people, and more than a million became refugees. The **conflict** has become a defining factor in post-Soviet history]
H	*Il **conflitto** portò a un numero complessivo di vittime da entrambe le parti di oltre 30.000 persone e a più di un milione di profughi. Questo **avvenimento** fu determinante nella storia postsovietica* [...] [The **conflict** led to total casualties on both sides of more than 30,000 people and more than a million refugees. This **event** was decisive in post-Soviet history]
M	*Durante il **conflitto**, il numero totale di vittime da entrambe le parti ammonta a più di 30.000 e più di un milione di rifugiati. Il **conflitto** è diventato un fattore determinante della storia post-sovietica* [...] [During the **conflict**, the total number of casualties on both sides amounted to more than 30,000 and more than one million refugees. The **conflict** has become a defining factor in post-Soviet history]

Finally, a smaller number of respondents noticed differences in the register (3.17%, 2 out of 63) – claiming that it was "higher" and more varied in H – use of articles (1 student, 1.6%), metaphoric (3.17%) and idiomatic language (4.7%), and the use of realia (1,6%). Unfortunately, none of them provided specific examples.

4 Conclusions

The aim of this study was to assess the ability of a group of Italian students learning Russian to classify human, machine and post-edited translation, identifying the main features distinguishing human and automatic texts.

In summary, students from the University of Bologna (Forlì Campus), who are more specialized in translation, demonstrated superior performance in identifying the three assigned texts: H (human translation), M (machine translation) and PE (post-edited translation). Interestingly, in both Milan and Forlì, the accuracy of responses did not appear to be directly proportional to the level of language proficiency. Instead, students from Forlì with a lower level of proficiency compared to students from Milan often provided more pertinent descriptions when asked to specify the differences between the three translations. This indicates that the ability to recognize problems linked to NMT is acquired only by specifically trained groups. Therefore, the need to identify the

necessary steps to develop specific training courses that take account of the ongoing technological revolution in the field of translation is actual and relevant.

While the majority of respondents preferred H and considered it the most suitable for a newspaper, some students expressed a preference for M or PE and considered them more fitting for publication in a newspaper. This trend was observed most often when students misidentified the texts, but sometimes also when there was no misattribution. This is an interesting finding that prompts reflection on the type of language used and preferred by the younger generation.

A review of the responses to the last question revealed that the specific differences between M and H are not always clearly identified, and that the metalanguage employed by students is generally immature. The majority of respondents observed a higher degree of rewording in H, in contrast to a greater degree of literalness typical of M. This finding is often associated with higher fluency in H. The rewording observed in H includes parameters such as syntax, segmentation, word order, connectors and punctuation. These elements of the syntactic-textual structure exhibit significant differences between Russian and Italian: Italian syntax is more complex, with longer periods and hypotaxis, resulting in a greater use of connectors. In contrast, Russian texts are more segmented and paratactic, which is reflected in punctuation. Despite producing a correct translation in terms of morphosyntax, M reproduces the typical syntactic and textual structure of Russian written language.

The lexical aspect of text reformulation was observed to a lesser extent and includes parameters such as idiomatic and metaphorical uses, register (higher in H) and repetitions (more frequent in M). Finally, some students noted that the use of calques and some improper lexical choices in M result in a lower comprehensibility of the text.

Based on these findings, we believe that university training courses focused on machine translation tools and post-editing are undoubtedly needed and should prioritize a contrastive approach at the syntactic, textual and pragmatic levels. A clear identification of the syntactic, textual and pragmatic differences between Russian and Italian will guide our students through the post-editing process.

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