Machine Translation: Investigation of the Limits and Potentialities of Machine Translation in Some ConcreteCases

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Abstract

The role of automatic translation tools in the globalized market is more and more pervasive, with the potential consequences of errors and mistakes in machine translations. The interest in machine translation has shifted from being a field of work for computer scientists to being more typical of the humanities area of translators and linguists. While machine translation saves time, it is considered incapable of producing high-quality translations. The article details experiments conducted to explore and compare the potential, limitations, and characteristics of some of the most common online machine translators. The experiments showed that human intervention, specifically in the post-editing phase, is necessary to varying degrees depending on the raw text obtained by different automatic translators. The article also discusses the importance of factors such as the cultural context in which the source text originated, the writer's system of thoughts and patterns, and their use of verbal and non-verbal language in language and communication. Possible future developments in the field of machine translation are also hypothesized.

Keywords: automatic translation tools; errors; machine translations; linguists, high-quality translations; human intervention; post-editing phase; verbal language; non-verbal language; language and communication.

1.   Introduction

In today's globalized market, automatic translation tools play a vital role. This paper provides a discussion about the function of automatic translation tools in the current globalized market and the potential issues associated with them. It acknowledges the significance of these tools while highlighting that their usage does not ensure error-free translations and the potential consequences that may arise as a result. Furthermore, the study mentions a shift in interest regarding machine translation since the late 1990s. Initially, the field of machine translation was primarily explored by computer scientists. However, over time, it has become more relevant to professionals in the humanities area, including translators and linguists. This suggests that the focus has expanded beyond technical aspects to encompass linguistic and cultural considerations.

Lewis [1] appropriately points out three specific uses of machine translation: (a) 'Rapid Translation', (b) 'Browsing' within proposed foreign language content, and (c) 'Drafting', where the target text is the raw output of the machine translation system that will need to bepost-edited to improve its quality and style.

The evolution of the role of translation and the translator has been constant, and recently it has seen an acceleration thanks to new technologies in the field. Initially, translation was seen as a mechanical task, and translators often held a subordinate position compared to the text they were translating. However, the idea that the role of the translator was changing and becoming increasingly important began to spread.

The tension between the desire to remain faithful to the original text and the need to meet the client's requirements or respect the poetic tradition of the target language has led to a different concept of translation and the role of the translator. According to Gambier [3] Translation is no longer seen merely as a straightforward transposition of a text from one language to another, but as a form of cultural mediation. This shift in perspective has focused attention not only on the final product of translation but also on the translation process itself.

There has been a shift towards considering the "how" and the role the translator plays in this process. Translation has become the subject of study as a mediation between two different languages and as a discipline that shapes professionals in the field. Over time, translator training has taken on a multidisciplinary character to make translators competent and well-prepared in various aspects. The translator is increasingly recognized as an important linguistic and cultural mediator.

The translations proposed by the most common translation software, such as Google Translate, are based on new 'statistical translation models' and therefore allow for more acceptable textual results than Systran-type translation systems, which are based more on linguistic rules. While the quality of the system may be more easily verifiable in the case of translations of technical-scientific, descriptive or journalistic texts, this will not be the case with more creative texts with specific linguistic connotations. In fact, any type of software used for Machine Translation purposes will inevitably present translation difficulties arising from certain peculiarities of the languages involved. Homographical elements, complex locutions or expressions, collocations, and metaphors, just to mention a few examples, are easy traps for even the most sophisticated software. Synonyms, polythematic words such as "to lend a hand", "to flush", "by dint of", metaphorical hemetonimic uses of words all constitute further obstacles to the effectiveness of machine translation, as Chiari [2] has rightly observed.

In general, machine translation is considered to be incapable of producing high-qualitytranslated texts, even though it saves the user considerable time. The intention to explore and compare the potential, limitations, and characteristics of some of the most common online machine translators led us to carry out several experiments, also using different types of texts.The work made it possible to prove how human intervention, specifically in the post-editing phase, is necessary to a greater or lesser extent depending on the raw text obtained by the different automatic translators, as well as to hypothesize possible future developments in this field.

The research and experimentation conducted in this study were based on a comparative analysis to determine the accuracy and effectiveness of machine-generated translations of the source text. Various factors of fundamental importance in language and communication were also taken into consideration, such as the cultural context in which

the source text originated, the writer's system of thoughts and patterns, and their use of verbal and non-verbal language.

In the comparative analysis and study of the results of the texts obtained by machine translation, the authors evaluated various aspects of the translations, including their literal accuracy, idiomatic rendering, syntactic and semantic structures, and overall comprehensibility. The authors also considered the context of current research in automatic machine translation evaluation.

The texts and the sites used for the translation were diverse, and links to the sites, date, and time of consultation were provided for each text. This abundance of detailed information is necessary to acknowledge that the results obtained at a specific moment in time may be different in subsequent attempts, as automatic translation systems are constantly being improved by their creators in light of new research and feedback.

Words, expressions, or parts of text that the were subject to comparative and contrastive analysis the were highlighted with underlining and accompanied by commentary. The authors chose to use the following free machine translation sites for the study: Google Translate, DeepL, and Systran. The decision to include Google Translate in the study was based on its widespread usage and recognition. Despite the system's use of English as an intermediate language, which can result in problems with translation accuracy, the authors chose to include it in the study as it is a widely used service. The authors also included DeepL, which was launched later than Google Translate in 2017, and Systran, a pioneer in machine translation founded in 1968. DeepL utilizes highly advanced neural networks.

SYSTRAN, founded in 1968, is considered a pioneer in the field of machine translation. The company has a history of working for organizations such as the US Department of Defense and the European Commission. It was born out of initial experiments conducted in 1954 by Georgetown University. Despite the negative evaluation of machine translation's potential usefulness in the ALPAC (Automatic Language Processing Advisory Committee) report published in 1966, which led to a significant reduction in funding for this area of research, SYSTRAN managed to survive.

During the Cold War, SYSTRAN's machine translation system was primarily used to translate technical and scientific documents into Russian, and the quality of the translations produced was not optimal, but the content of the texts was generally comprehensible. Today, the company is based in Paris and has been sold to the French Gachot family. With the development of the new economy, SYSTRAN now provides paid services to interested companies.

Given SYSTRAN's historical and evolutionary importance in the field of machine translation, it was included in the current study. It is important to note that all of the translators were used in their free versions. This was done to make it clear that the observations resulting from the case study arise from the free outputs provided by the services, with all the limitations that this implies: less accuracy and precision than in the paid versions, with no additional services offered by the non-free options.

2. Materials and Method

In this study, a comparative analysis was conducted on an official text obtained from the European Community website. It offers both official documents and articles on various topics that can be consulted in multiple languages, depending on the user's settings. This provided the opportunity to compare the translation output of various machine translation systems, such as Google Translate, DeepL, and Systran, with the original text edited by expert translators and post-editors from the organization's offices. Below is a small excerpt from an original English-language text relating to the tragic war events in Ukraine: (https://european- union.europa.eu/index_en, accessed on May 13, 2022 at 12:25 pm)

TEXT 1: "The EU stands united in its solidarity with Ukraine and will continue to support Ukraine and its people together with its international partners, including through additional political, financial and humanitarian support.

The EU has reacted swiftly and decisively to Russia's aggression by adopting further restrictive measures in response, which will have massive and severe consequences for Russia."

Official translation on the site set to the Italian language:

"L'UE è unita e solidale con l'Ucraina e continuerà a sostenere l'Ucraina e il suo popolo insieme ai suoi partner internazionali, anche attraverso un ulteriore sostegno politico, finanziario e umanitario.

L'UE ha reagito rapidamente e con decisione all'aggressione della Russia adottando in risposta ulteriori misure restrittive che avranno conseguenze gravi e massicce per la Russia."

Google translate version: "L'UE è unita nella sua solidarietà con l'Ucraina e continuerà a sostenere l'Ucraina e il suo popolo insieme ai suoi partner internazionali, anche attraverso un ulteriore sostegno politico, finanziario e umanitario.

L'UE ha reagito in modo rapido e deciso all'aggressione russa adottando in risposta ulteriori misure restrittive, che avranno conseguenze massicce e gravi per la Russia."

DeepL translate version: "L'UE è unita nella sua solidarietà con l'Ucraina e continuerà a sostenere l'Ucraina e il suo popolo insieme ai suoi partner internazionali, anche attraverso un ulteriore sostegno politico, finanziario e umanitario.

L'UE ha reagito in modo rapido e deciso all'aggressione russa adottando ulteriori misure restrittive che avranno conseguenze gravi e massicce per la Russia."

Systran translate version: "L'UE è unita nella sua solidarietà con l'Ucraina e continuerà a sostenere l'Ucraina e il suo popolo insieme ai suoi partner internazionali, anche attraverso un ulteriore sostegno politico, finanziario e umanitario.

L'UE ha reagito in modo rapido e deciso all'aggressione russa adottando ulteriori misure restrittive che avranno conseguenze gravi e massicce per la Russia."

The three machine translations are identical and jointly literary in the underlined expression. The texts are all 3 understandable but both Google translate, DeepL and Systran have rendered the expression "nella sua solidarietà" in "its solidarity' where the professional translators have used the adjective 'solidale' instead of the noun 'solidarietà'.

TEXT TWO: Another section of the European Union's English-language the website reads as follows:(https://ec.europa.eu/info/strategy/priorities-2019-2024/stronger-europe-world/eu-   solidarity-ukraine/eu-sanctions-against-russia-following-invasion-ukraine_en   ,accessed   13May 2022 at 1.50pm):

" In response to Russian President Putin's unprecedented and unprovoked military attack on Ukraine, the EU is responding by adopting a comprehensive and robust package of restrictivesanctions designed to:

-      cripple the Kremlin's ability to finance the war
-      impose clear economic and political costs on the Russian political elite responsible for theinvasion
-      and diminish its economic base'.

Italian version of the site: "In risposta all'attacco militare senza precedenti contro l'Ucraina da parte del presidente russoPutin, l'UE sta rispondendo adottando un pacchetto completo e solido di sanzioni restrittive volte a:

•   indebolire la capacità del Cremlino di finanziare la guerra

•   infliggere costi economici e politici chiari all'élite politica russa responsabiledell'invasione
•   ridurre la sua base economica."Google translation version:

"In risposta all'attacco militare senza precedenti e non provocato del presidente russo Putin contro l'Ucraina, l'UE sta rispondendo adottando un pacchetto completo e solido di sanzioni restrittive volte a:

•   paralizzare la capacità del Cremlino di finanziare la guerra
•   imporre costi economici e politici chiari all'élite politica russa responsabile dell'invasione
•   e diminuire la sua base economica"DeepL versiont ranslation:

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-      e diminuire la sua base economica".Systran version translation:

"In risposta all'attacco militare senza precedenti e non provocato del presidente russo Putin contro l'Ucraina, l'UE sta rispondendo adottando un pacchetto completo e solido di sanzioni restrittive volte a:

·   indebolire la capacità del Cremlino di finanziare la guerra
·   imporre chiari costi economici e politici all'élite politica russa responsabile dell'invasione
·   e ridurre la sua base economica"

In the initial two translation tests, the verb "cripple" in English was translated as "indebolire" in the official Italian version of the website, but was incorrectly rendered as "paralizzare,"

which conveys a more dramatic connotation. In the Systran translation test, the same verb was translated in accordance with the official translation, resulting in a more accurate representation that aligns with human translation, resulting in superior outcomes. It is worth mentioning that the adjective "unprovoked" present in the English version was entirelyomitted in the official Italian version, but it was translated consistently by all three automatic translators. Despite this, the overall concept was accurately conveyed in all three machine translation versions.

TEXT THREE This text is extracted from the official the website of the European Union and pertains to a topic of divergent nature and significant relevance currently. The political decisions made by European and Italian governments regarding climate change mitigation align with the priorities established in Brussels over an extended period (https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en accessed 13

May at 16.05): "Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green Deal will transform the EU into a modern, resource-efficient and competitive economy, ensuring:

- no net emissions of greenhouse gases by 2050
- economic growth decoupled from resource use
- no person and no place left behind

The European Green Deal is also our lifeline out of the COVID-19 pandemic. One third of the 1.8 trillion euro investments from the Next Generation EU Recovery Plan, and the EU's seven-year budget will finance the European Green Deal."

Below the professionally translated version on the site in Italian: "I cambiamenti climatici e il degrado ambientale sono una minaccia enorme per l'Europa e il mondo. Per supera-re queste sfide, il Green Deal europeo trasformerà l'UE in un'economia moderna, efficiente sotto il profilo delle risorse e competitiva, garantendo che:

nel 2050 non siano più generate emissioni nette di gas a effetto serra

1. la crescita economica sia dissociata dall'uso delle risorse
2. nessuna persona e nessun luogo siano trascurati.

Il Green Deal europeo è anche la nostra ancora di salvezza per lasciarci alle spalle lapandemia di COVID-19. Un terzo dei 1800 miliardi di euro di investimenti del piano per la ripresa di Next Generation EU e il bilancio settennale dell'UE finanzieranno il Green Deal europeo".

Google version translation: "Il cambiamento climatico e il degrado ambientale sono una minaccia esistenziale per l'Europa e il mondo. Per superare queste sfide, il Green Deal europeo trasformerà l'UE in un'economia moderna, efficiente sotto il profilo delle risorse e competitiva, garantendo:

nessuna emissione netta di gas serra entro il 2050 crescita economica disaccoppiata dall'uso delle risorse nessuna persona e nessun posto lasciato indietro

Il Green Deal europeo è anche la nostra ancora di salvezza per uscire dalla pandemia di COVID-19. Un terzo dei 1,8 trilioni di euro di investimenti del piano di ripresa Next Generation EU e il budget settennale dell'UE finanzieranno il

Green Deal europeo."

DeepL version translation:"Il cambiamento climatico e il degrado ambientale sono una minaccia esistenziale per l'Europa e per il mondo. Per superare queste sfide, il Green Deal europeo trasformerà l'UE in un'economia moderna, efficiente sotto il pro-filo delle risorse e competitiva, assicurando che nessuna emissione netta di gas a effetto serra entro il 2050 crescita economica disaccoppiata dall'uso delle risorse nessuna persona e nessun luogo lasciati indietro

Il Green Deal europeo è anche la nostra ancora di salvezza per uscire dalla pandemiaCOVID-19. Un terzo dei 1.800 miliardi di euro di investimenti del piano di ripresa NextGenerationEU e del bilancio settennale dell'UE finanzierà il Green Deal europeo."

Systran version translation: "I cambiamenti climatici e il degrado ambientale costituiscono una minaccia esistenziale per l'Europa e il mondo. Per superare queste sfide, il Green Deal europeo trasformerà l'UE in un'economia moderna, efficiente sotto il pro-filo delle risorse e competitiva, garantendo:

nessuna emissione netta di gas a effetto serra entro il 2050crescita economica scollegata dall'uso delle risorse nessuna persona e nessun posto lasciato indietro

Il Green Deal europeo è anche la nostra ancora di salvezza per la pandemia di Covid-19. Un terzo degli investi-menti di 1 800 miliardi di euro del piano di ripresa Next Generation EU e del bilancio settennale dell'UE finanzierà il Green Deal europeo."

It is important to note that in the official Italian translation, the phrase "cambiamenti climatici" (climate change) was chosen instead of the singular "cambiamento climatico" in the English version. Additionally, the expression "by 2050" has been translated as "nel 2050" instead of the more accurate "entro il 2050." The preposition "by" in English can mean "within" or "by" and thus "entro" is a more accurate translation.

Furthermore, Google Translate and DeepL both use the term "disaccoppiata" instead of "dissociate," which is not an ideal terminological choice. The past participle "lasciato" is also not in agreement with the plurality of subjects referred to in the phrase.

In the translations provided by DeepL and Systran, the formatting is not the same as the official formatting. Another concordance error is the future tense "will finance" translated as "finanzierà" instead of "finanzieranno." This error is likely caused by the previous translation error of "the EU's seven-year budget", which is translated as "del budget" instead of "il budget."

Lastly, Systran chooses "scollegata" for the original "decoupled" which is less accurate than the official translation "dissociata".

TEXT FOUR:The following analysis examines a type of text that is vastly different from the previous examples. Specifically, the authors have chosen to analyze translations of the famous Queen song "We are the champions," which is considered one of the best known songs of all time. Released in 1977, "We are the champions" is an anthem for all types of victories and serves as a symbol of revenge after a difficult moment, as well as redemption obtained through hard work. The song is commonly played at sporting events worldwide to celebrate the winning team.

The analysis below will focus on the lyrics verse by verse. The Italian translation was taken from the website popitup https://www.popitup.it/2021/09/01/queen-we-are-the-champions- traduzione-significato/, which was consulted on May 25th, 2022 at 4:10 PM. This website is dedicated to the dissemination of collaboratively and accurately translated texts by a group of translators and language experts who voluntarily contribute their expertise. The evaluation of the translation can be evaluated and improved, as stated on the website's homepage.

Another source of translated text was the webzine 'https://outsidersweb.it/2018/05/29/queen-we- are-the-champions-testo-e-traduzione/. This is an all-round culture and lifestyle magazine that approaches topics such as music, cinema, theatre, fashion, comics, travel, and sport through articles, reviews, interviews, photographs, and videos, as described on its Facebook page https://www.facebook.com/outsiders.webzine/ with around 18,000 followers. This site was also consulted on May 25th, 2022 at 6:38 PM.

The analysis will begin with the first verse of the song, labeled as "Verse A." Original version: I've paid my dues time after time I've done my sentence but committed no crime And bad mistakes, I've made a few I've had my share of sand kicked in my face But I've come through And the authors mean to go on, and on, and on, and on Translation on Ma non ho commesso alcun crimine E di brutti errori Ne ho fatti pochi Ho avuto la mia parte di sabbia Tiratami in faccia Ma ne sono uscito E ho bisogno di andare avanti e avanti e avanti e avanti" Google translate version: "Ho pagato i miei debiti di volta in volta Ho eseguito la mia condanna ma non ho commesso alcun crimine E brutti errori, ne ho fatti alcuni Ho avuto la mia parte di sabbia presa a calci in faccia Ma ho superato E intendiamo andare avanti, ancora, e ancora, e ancora" DeepL version: "Ho pagato i miei debiti di volta in volta Ho scontato la mia pena ma non ho commesso alcun reato E di brutti errori ne ho fatti alcuni Ho avuto la mia parte di sabbia presa a calci in faccia Ma ho superato E abbiamo intenzione di andare avanti, ancora e ancora" Systran version: "Ho pagato i miei debiti tempo dopo tempo Ho fatto la mia sentenza ma non ho commesso alcun crimine E ho fatto dei brutti errori. Mi hanno preso a calci in faccia la parte di sabbia che avevo. Ma ho superato E intendiamo andare avanti, e ancora, e ancora"

The first two versions of the Italian translation of the song "we are the champions" that were consulted are identical and substantially correct, without any hindrances to comprehension or misrepresentations of meaning.

It should be noted that the phrase "I've paid my dues" in the song may have a better translation in the consulted Systran version, which renders it as "Ho pagato ciò che dovevo". None of the three machine translations provided the same result. Systran continues with "Ho pagato I miei debiti tempo dopo tempo" but it should be noted that the translation was carried out verbatim, without considering other expressions that convey the same concept. Verse B/ Refrain "We are the champions, my friends And we'll keep on fighting till the end we are the champions, we are the champions No time for losers, 'cause we are the champions of the world" Translation on common the websites: "Noi siamo i campioni – amico mio E continueremo a lottare fino alla fine Noi siamo i campioni Noi siamo i campioni Non c'è tempo per i perdenti Perché noi siamo i campioni del mondo" Google Version: "Noi siamo i campioni, amici miei E continueremo a combattere fino alla fine Noi siamo i campioni, noi siamo i campioni Non c'è tempo per i perdenti, perché noi siamo i campioni del mondo" DeepL version: "Noi siamo i campioni, amici miei E continueremo a combattere fino alla fine. Noi siamo i campioni, amici miei E continueremo a combattere fino alla fine Noi siamo i campioni, noi siamo i campioni Non c'è tempo per i perdenti, perché noi siamo i campioni del mondo Noi siamo i campioni, noi siamo I campioni Non c'è tempo per i perdenti, perché noi siamo i campioni del mondo" Systran version:

"Noi siamo i campioni, amici miei E continueremo a combattere fino alla fine Noi siamo i campioni, noi siamo i

campioni Non c'è tempo per i perdenti, perché noi siamo i campioni del mondo" For this verse, the 3 versions are identical and do not bear errors of any kind. The problem of interpretation arises again with the following verse: Verse 3: "I've taken my bows and my curtain calls You brought me fame and fortune And everything that goes with it, I thank you all" Common Italian websites: "Mi sono preso i miei applause E sono stato chiamato alla ribalta Mi avete dato fama e fortuna E tutto ciò che l'accompagna Vi ringrazio tutti" Google Translate version: "Ho preso i miei inchini e le mie chiamate alla ribalta Mi hai portato fama e fortuna E tutto ciò che ne consegue, vi ringrazio tutti" DeepL version: "Ho preso i miei archi e le mie chiamate al sipario Mi avete portato fama e fortuna E tutto ciò che ne consegue, vi ringrazio tutti" Systran version: "Ho preso gli archi e le tende. Mi hai portato fama e fortuna E tutto quello che ne consegue, vi ringrazio tutti."

The semantic choices made by the Italian sites, are not found in any of the machine translations. While the Google's translation is acceptable, the same cannot be said for DeepL and Systran, which translate "bows" with "archi" and "curtains" with the literal "tende." The human translator, on the other hand, understands that the singer is referring to the audience, a plurality of people, so the Italian pronoun "tu" must be excluded in favor of the correct translation of "voi." Verse 4: "But it's been no bed of roses, no pleasure cruise I consider it a challenge before The whole human race and I ain't gonna lose And the authors mean to go on, and on, and on and on" Translation from the sites "Ma non è stato tutto rose e fiori né un viaggio di piacere La considero una sfida davanti all'intera razza umana E non la perderò E ho bisogno di andare avanti e avanti e avanti e avanti" Google Translate version: "Ma non è stato un letto di rose, nessuna crociera di piacere La considero una sfida prima L'intera razza umana e io non perderemo E intendiamo andare avanti, ancora, ancora e ancora" DeepL version: "Ma non è stato un letto di rose, né una crociera di piacere. La considero una sfida di fronte dell'intera razza umana e non ho intenzione di perdere E intendiamo andare avanti, e avanti, e avanti e avanti" Systran version: "Ma non è stato un letto di rose, né una crociera di piacere Lo considero una sfida prima Tutta la razza umana e io non perderò E vogliamo andare avanti, e ancora, e ancora"

The translation of this stanza is particularly interesting due to the repetition of errors in two of the three versions. In this round, the translation provided by DeepL, although literal, is free of interpretive errors made by the other two machines, and thus appears to be the winner.

The word "before" has been misunderstood and translated as an adverb of time with "prima," with no semantic link to the following phrase "the whole human race." Human translators have understood "before" as the singer's intention, an adverb of place that if the automatic English-language translator had found as "in front of," it would have been correctly translated into Italian as "davanti."

Google Translate intended to conjugate the verbal expression "ain't gonna lose" to the plural, interpreting "I" and "the whole human race" as subjects of the same action, which is difficult to understand. The version provided by Systran is also problematic, the verbal expression "the authors mean" at the end of the stanza is basically translated correctly, but with different nuances. Human translators have wanted to understand it as a need or desire, while the machine translations interpret it as a want (Systran) or intention (Google Translate and DeepL). In the lyrics of the song, an interpretive error is present in all three translators, specifically in the last two points in Google Translate and Systran, and in the last point in DeepL and Systran.

1.   **Presentation Of Findings**

Calculating the total number of issues encountered in different translators without consider-ing the type and specificity

of them, what is described above can be summarized in the fol- lowing table:

Table 1: Number of errors per text.

	GOOGLE TRANSLATE	DEEPL	SYSTRAN
TEXT 1	1	1	1
TEXT 2	2	2	1
TEXT 3	3	3	2
TEXT 4	3	2	4
TOTAL	9	8	8

The following bar chart illustrates graphically the amount of errors per text:
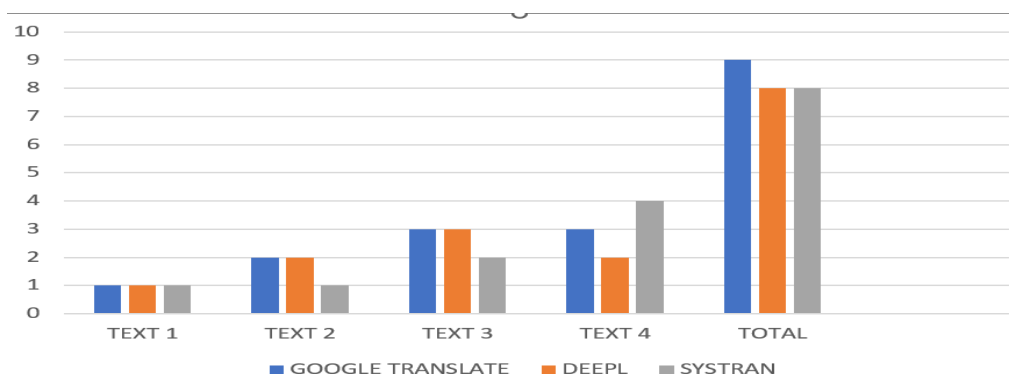
Figure 1: Amount of errors per text.

The first column shows graphically how with the first text the output of the 3 correctors is identical. In the second text, Google Translate and DeepL performed worse than Systran, as well as in text number 3. In text number 4, the best performance was recorded by the DeepL site, while Google Translate is in second place, that is in front of the much worse output of Systran. In the last text, Systran confirms the worst performance, followed by Google Trans- late. The best in this case was DeepL. Specifically, for this last text it will be remembered that Systran produced translation errors that made it impossible to understand the meaning.

4. Discussion

The results obtained from the cases examined in this analysis vary greatly from each other: it can be said that based on the results and types of errors found by testing three of the most widely used translators, the main strategy common to all is literal translation. In some cases, the machine translation has performed better, which confirms that it is possible to improve the machine's ability to contextualize the translation for better correspondence of meaning between the source and target languages.

Translation should not be understood and treated as a mere literal translation of sentences and contents from one language to another. Languages have unique characteristics such as specific syntax, semantics, styles, idioms, and

expressions. Even within the same language, the linguistic register can change depending on the parties involved in the communication exchange (role, relationship, purpose of communication, and context). Therefore, the role of the human and automatic translator should be to transfer everything that is written and spoken faithfully and accurately, while respecting the aforementioned criteria in order to obtain a high quality translation/interpretation. While this may be true for human translators, it cannot be said in an absolute way for automatic translators as shown in the experiments reported above. In conclusion, the challenge for researchers, computer scientists, programmers, and linguists in the field of machine translation remains open. The goal of research in this area is to overcome linguistic barriers and to optimize time and money for companies operating in an increasingly globalized economic context. The use of "translation memory" software, also called CAT tools, by human translators can partly reduce costs while ensuring the quality of translation. It is important to note that these technologies still require human intervention to ensure accurate and understandable translations. The research and development in this field continue to strive for better and more accurate machine translation systems. Furthermore, the use of machine translation without human intervention falls into a problematic area. Champollions [4] sums it up perfectly by stating that "Automatic translation can store a lot of knowledge and descriptions, but it can never evoke feelings for that knowledge. Letting a machine interpret basic knowledge would lead to senseless and incomprehensible translation. It's true that automatic translation can translate, but it can't understand what it translates and the output without understanding is therefore useless; that's why a human translator would function as a proof-sensing for text pre-translated by a machine."

5 . Conclusion

The majority of errors quantified in this research are predictable due to the structural differences between English and Italian. These differences, just to name some, include the order between the noun and the modifier, especially for nouns, subject-verb agreement in Italian, unexpressed pronoun subjects in Italian, and gender inflection on related nouns and adjectives. It is evident that these numerous linguistic differences are challenging to resolve through statistical approaches to machine translation. Some errors involve more than just the structural differences between the two languages. Pronoun errors, in particular, often require an understanding of the discourse context to be resolved. Italian speakers effectively communicate as verb forms allow for distinguishing between first, second, or third-person subjects based on the context of the interaction, indicating whether the speaker is referring to themselves, the interlocutor, or others. These aspects pose a real challenge for current machine translation systems, especially in certain specific contexts as the results of the different types of texts and expressions translated with different software have shown varying levels of accuracy and quality. Therefore, it can be said that the possibility of completely replacing human translators/interpreters with automatic ones in the near future is doubtful. The possibility of achieving satisfactory results that are close to human translation quality appears remote and difficult to achieve. The research in question has provided estimates concerning the relative proportions of errors impacting machine translation. These estimates can be used to guide efforts aimed at improving the quality of translations performed by automated machines. Many scholars and researchers [5] continue to advocate for the importance of ongoing research in this area. In light of the discussion, a figure that is becoming increasingly defined and prominent in the field of automatic translations is the post-editor. It is clear that human intervention is currently essential and indispensable, whether in the role of translator or post-editor. Only time and further research can tell us if there will be a new evolution and transformation in this field in the future.

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