
Accuracy of Google Translate in Translation of English-Kiswahili and Kiswahili-English Newspaper Headlines

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ABSTRACT

This paper endeavors to determine the accuracy of Google Translate in newspaper headlines from Kiswahili to English and vice versa, while using the human translator as the yardstick. Newspaper headlines in both Kiswahili and English were identified and randomly selected. Three human translators were used to so that the Google Translate translations could be measured against the human translators. The Relevance Theory was applied during the research. This study made use of both Qualitative and Quantitative Research Methodology and a Descriptive Research Design. Simple Random Sampling was used to select the data to be used while Purposive Sampling was used when choosing the human translators. Fifty data sets were tested, twenty-five of which were in Kiswahili while the rest were in English. Content analysis was thereafter applied to interpret the translation output. The study found that the human translator is more accurate than Google Translate. In addition, some human translations were found to slightly differ from Google translations in the wording but still had the same meaning. The study focused on the communicativeness of the translated data and found that some items translated exhibited meaning losses. It was found that Google Translate was able to accurately render the meaning of 28/50 (56%) of the instructions examined, implying that it is 56% accurate in translating Kiswahili to English and vice versa. Mistranslations were found to be more prevalent in the Kiswahili source data. This therefore means that sometimes miscommunication occurs as some items are not accurately rendered. This study thus offers useful insight on areas of intervention in Machine Translation, particularly Google Translate.

INTRODUCTION

Translation entails a challenging undertaking involving changing a text from one language (source language) to another (target language) by a translator (Munday, 2016). It is the responsibility of the translator to accurately deliver the meaning of the SL as well as the cultural nuances to the Target Language. This means that the translator must not only be competent in both languages and their culture, but also be able to correctly render ideas from the Source Language to the Target Language. When this does not happen, then translation errors occur.

Language is an essential communication tool for it is a representation of the ideas in our minds. With over 7000 living languages in existence in the world(<https://www.ethnologue.com>), it may not be easy for an individual to know or understand all the languages of the world. For this reason, translation was adopted to enable communication of messages and sharing ideas among languages.

Translation entails a complex process involving high level cognition and linguistic capabilities. An individual responsible of translating ought to be at ease with the two primary languages involved. The

person should also have skills and knowledge to restructure a primary language in a particular target language which does not have an exact wording as well as structure (Poibeau, 2017). Wangia (2008) argues that, if the translator is armed with the necessary skills and knowledge, they are likely to develop a superior product as lexical knowledge is solely insufficient. Furthermore, she asserts that like the wiring connections of the most powerful machine, the complexities of language constitute intricate details that have a notable significance during translation.

Languages have features that make them different from each other (Nida & Taber, 1982). As a result, information may be lost or inaccurately transmitted when transferring ideas from one language to another. Thus, it may not be possible for the target audience to receive a message in exactly the same way as the original audience. For this reason, though for a translation to be considered effective there should be some degree of equivalence, some non-equivalence may still occur.

1.1 Overview of Machine Translation

Machine Translation is translation of a text, speech or images by a machine. The machine uses artificial intelligence (AI) to translate ST to Target Text automatically without the intervention of human beings (Poibeau, 2017). Some machine translation engines include Google Translate, Bing Translate, Microsoft Translator, Yandex, to mention but a few.

While a machine is more efficient than a human translator because it is fast and less expensive, chances are high that it could miss out on some details in the process. Translation requires two types of knowledge: grammatical and extra-linguistic (Baker & Saldanha 2009). Machines may encounter linguistic problems or fail to have a real-world knowledge. As a result, there could arise mismatches in the rendering of meaning between the particular target language as well as the source language.

1.2 Google Translate

Google Translate is a rule-based translation tool that was introduced by Google Corporation in 2006. It uses predictive algorithms to guess how a text can be translated in a foreign language. GT translates sentences, documents, websites, speech and even images. It aims at translating whole phrases as opposed to single words then gathers overlapping phrases for translation. As of March 2023, GT was able to translate 133 languages at various levels and a total of 100 billion words daily (<https://translate.google.com/>). It first translates a source language to English and later to the target language. When a text is submitted online, Google Translate goes through its database and produces what it considers as the best estimate of the Target Language.

Initially, Google Translate used Statistical Machine Translation. This is a rule-based method of translation that uses predictive algorithms to make guesses of foreign texts in translation (<https://translate.google.com/>). It translates entire phrases instead of single words after which it gathers similar phrases used for translation. Additionally, it examines bilingual texts corpora to create statistical models that translate texts from a particular language to a different one.

In September 2016, an innovative system of translation called Google Neural Machine Translation (GNMT) was developed by the Google research team (Robertson, 2019). This increased fluency and accuracy in Google Translate. GNMT utilizes a broad end to end artificial neural network which performs deep learning particularly in short-term memory networks (<https://translate.google.com/>). According to Google researchers, the system translates complete sentences at a time instead of piece by piece. Moreover, it

utilizes a broader context to figure out the most relevant translation. Thereafter, it adjusts the text like a human speaking while adhering to proper grammar. It encodes the semantics of a particular sentence instead of merely memorizing phrase-to-phrase translations. It is argued that with time, Google Translate learns to develop better and leveraged natural translations. This then implies that GNMT offers better quality translations than the former.

1.3 Statement of The Problem

Globalization and the widespread use of the internet, especially in the last two decades, have brought about a significant amount of content to be translated. The human translator may not be able to address this need, more so in terms of speed and cost. Machines are thus used to complement the human translator. However, a machine may not always translate as accurately as a human can. The machine may not apply extra-linguistic knowledge and may experience some errors of grammar. It may also not understand the cultural nuances presented in a certain text. As a result, mistranslations sometimes occur and this may lead to miscommunication which may cause drastic consequences. This not only compromises the quality but also the credibility of a translation. This study aimed at studying Kiswahili and English translations on Google Translate and comparing them with human translations. This was with the intention of determining whether or not there were mismatches between the human and Target Text translations. The mismatches witnessed were then used to determine the accuracy of Target Text as a machine translation engine

LITERATURE REVIEW

2.1 Literature on Translation

Translation dates a long way in history. Since time immemorial, human beings use language to translate and communicate their thoughts and ideas through a set of symbols or codes. Thus, translation happens every day. When a person wants to know the thoughts and ideas of a person using a different language from theirs, there are two sets of symbols and codes used. This gives rise to translation. Translation cannot be confined in one definition and so what follows is a definition of translation from various scholars and experts.

Roman Jakobson, a prominent linguist and an expert in the field of translation defines translation as the interpretation of verbal signs using some other language (Jakobson, 1959). Through this, a text in one language is transformed into a text in another language with the same meaning.

Catford (1965, 1978) describes translation as a critical procedure of transitioning meaning or sense from a particular language (source language) to another language (target language). He further asserts that translation involves an operation undertaken on a language that involves replicating a text or transcript in a particular language for a writing in different other language. Another definition he gives is the replacing of additional textual material in a particular source language (SL) by a corresponding text material in alternative target language (TL) and so for him, translation is basically concerned with written material.

Translation can also be said to be the act of rendering meaning of the content in a text or utterance from one language to another, while retaining the message in the original text. The word 'translation' ('translatio' in Latin) means to carry over or bring across which designates a transfer (Munday, 2016). As such, the words and structure of the Source Language may not be given much importance but the central idea (meaning) must be reproduced in the receptor language (Hatim and Munday 2004:6). The emphasis here is on rendering the exact meaning of the source text as what was intended by its primary author. In a case where there is more than one equivalent, only the closest in the receptor language vocabulary and structure and the

most natural is selected. There must also be some degree of equivalence in that the term used in the receptor language must exist in that language. The meaning of words in isolation are not very significant but what a word means in a given context is very central. The major focus of a translator should then be reproducing meaning of the ST. This then means that style is of a secondary importance.

Translation is an interpretive process and it greatly depends on the nature of the document. For instance, technical translation is easier and demands less skill than translating a literary text. In addition to being competent in both Source Language and Target Language, a good translator should have an aptitude for writing in the target language and be conversant with socio-cultural context on which a text is set. The translator ought to then take the lexicon, cultural context and grammatical structure into account to be able to understand the meaning and transfer it to the TL while ensuring minimum or no loss of meaning.

Newmark (1981) notes that translation is the art of replacing a written message or statement from one language by the same message or statement in another language. If the Source Text outlines a situation that has elements unique to the natural sphere, environment as well as culture, there is unavoidable loss or harm on meaning. This implies that in translation, the message is more important than the words used to communicate it. If the original message is not accurately transferred to the Source Language, then translation errors occur.

Translation is not only dependent on replacing words from one language to gain meaning in a different language. It constitutes transmitting the meaning or the particular idea which the translator wants to convey (Cuc, 2018).

From the foregoing, it is right to state that translation is a process that aims at filtering meaning equivalence in the target text. Hence, language which is used as a unit of meaning in a discourse, must be clearly comprehended by the participants of communication.

2.2 Machine Translation

The internet has enabled effective access to information by all individuals from various parts of the globe. Webpages contain information that can be presented in varied languages that can be translated. On account of this increasing demand for translation, the complexities of the process of translation and the absence of adequate competent translators, scientists and linguists have collaborated to automate translation to help the human translator by means of specially designed software programs with inbuilt mechanisms for substituting the structures of Source Language to Target Language. The widespread use of internet globally has enhanced the role of translation in modern times and facilitated the use of Machine Translation in a big way.

Machine Translation, a subfield of Artificial Intelligence (AI) is the application of computers to the task of translating one natural language to another. The Machine Translation system performs an analysis of the source language input after which it prepares a meaningful internal representation. The representation is then transferred in a suitable form that is appropriate for the target language.

The overall quality achievable by Machine Translation has been a matter of much debate (Poibeau, 2017), however, it is improving fast. While fluency improves, translation errors still occur. This is because translation involves a multifaceted cognitive process. To decipher meaning of the Source Text in its wholeness, it is imperative for the translator to examine all the features and the attributes of a text. This process needs an exhaustive understanding of grammar, syntax, semantics and even idioms of the Source Language and its culture. Here then lies the challenge of Machine Translation. It may prove quite a

challenge to program and design an electronic device to comprehend a text in the exact way a human being does and also generate a new text in Target Languages so that it appears and sounds natural just like it is translated by a human.

In previous studies, Machine Translation has been found to be wanting in that sometimes it makes literal translations, use incorrect meanings in the case of polysemy, use the wrong word or even be unable to detect and translate new terms and acronyms and these are some of the issues this study addresses.

2.3 Current studies on translation

Gimode (2006) conducts research on mistranslations in English-Kiswahili church sermons. In her study, she does an in-depth investigation about the causes of these mistranslations and goes further to discuss the categories prone to mistranslations. She cites that translation errors occur because of lack of equivalents in some words owing to their nature and multiple meanings. Gimode's research and this study have a lot in common because they address mistranslations in both English and Kiswahili. This study however introduces some aspect of machine translation and compares it with the human translator to determine the accuracy of the machine but Gimode's study inspired the current study in identification of mistranslated areas.

Kemari (2012) in his master's thesis conducts a study to determine the translation ability of Kiswahili undergraduate students. He examined the extent to which the students were able to produce accurate renderings of some facts and ideas from ST to Target Language and also looked at the problems encountered by these students and how they dealt with them. In this study, Kemari contends that understanding the Source Text is very important as it enables one to render the message as precisely as possible. This may however sometimes not be the case since at times, the translator may experience challenges in understanding the grammar and lexicon of the ST. Translating jargon for instance may prove an uphill task. His study and the current one are similar because they investigate translation errors in both English and Kiswahili. The current study however investigates these errors in Machine Translation and compares them to human translations.

Kandie (2010) conducted a study on translation of neologisms in Kalenjin radio broadcasters and notes that neologisms without translation equivalents are encountered during broadcasting and so broadcasters have to act as cultural bridges across the Western and Kalenjin speakers' culture. This study is relevant to the current one because they both deal with translation issues and they use the Relevance Theory, but the current one compares human and machine translations.

Another study was done by Orago (2007) on meaning loss in literal translation. He cites that meaning loss in structural errors category occur due to the translator's attempt to match words in a particular word class in Dholuo with the words that belong to the same word class in English and which can sometimes have other meanings thus making the translation syntactically wrong. Though this study and the current one are on errors in translation, this particular study does not use literal translation.

Finally, there is a study done by Kathuke (2019) which looked at errors in crowdsourced translations on Facebook. That study is similar to this as they both study machine translation and the languages used are English and Kiswahili. The errors are also classified in both studies. However, unlike this study which limits itself to Google Translate, Kathuke limits his study to Facebook.

2.4 Translation errors

Natural languages are complex in nature. Each language possesses features that make it different from other

languages. These features may be morphological, syntactic, word order, discourse markers to mention but a few. Again, each language may have extensive vocabulary in various areas and fields depending on the cultural focus. Consequently, the target audience may not receive the message in exactly the same way as the source audience. As a result, translating one language to another may bring about non-equivalence between the two languages as there is no perfect match between the two (Robinson, 2019). It is this non-equivalence that brings about translation errors. Several words have various meaning and denotations. Sentences may contain multiple readings as well as particular grammatical interconnections in one language which may not occur in another. What it can do is to provide a general though more often than not, an imperfect approximation of the original text. Due to such complexity of the natural languages, the Machine Translation becomes a challenging task.

It has been often argued that it is not possible for the target audience to receive a message in exactly the same way as the source audience. This is because the historical setting and the culture may be quite different (Olk, 2003). Though for a translation to be effective there needs to be a high degree of equivalence, for the afore mentioned reasons, errors still occur.

The word 'error' originates from a Latin word 'errare' that means 'to wander, stray or roam'. The meaning of error is dependent on the context and purpose, as each word has a different meaning depending on where it is placed.

Errors in translation are often as a result of the existence of some non-equivalent linguistic elements between source language and target language (Baker, 1992). Consequently, the more and the bigger the differences between two languages, the more translation errors occur.

Pym (1992) categorizes translation errors into two: binary errors and non-binary errors. While binary errors are described as errors on grammar (they entail incorrect translations), non-binary errors are based on pragmatics (taking the context into consideration). Non-binary errors result to ambiguity in a translated text. Thus, a translator must understand the different contextual meanings of terminologies before they are used in the Target Text translation. Non-binary errors may not actually be errors but different interpretations of the same text. A binary error on the other hand is a wrong.

A translation error is a linguistic aspect or a combination of several forms that under a similar context, conditions and situations of production, not outsourced from the native counterparts of the speaker (Lennon, 1991). Errors reflect a gap in one's knowledge and they are systematic. An error can also be said to be the construction of improper forms in both speech and in written form by a speaker who is a non-native of the Target Language because of the incomplete knowhow concerning the rules of the Target Language. They arise due to misunderstanding the ST or the incapability of the translator in producing Target Text.

As afore mentioned, errors in translation mostly result from mismatches between the SL and Target Language (Baker, 1992) and as Basnett (2011) puts it, theorists of translation have long acknowledged the difficulty of achieving total equivalence between languages and ensuring that what has meaning in one context will have the same meaning in another. There is hardly any perfect translation.

Wangia (2003) asserts that every language has its own ways of expressing ideas, values and beliefs and these reflect the cultural aspects of the context community. A translator requires skills to render these norms from the SL to the Target Language in such a way that the target audience is able to correctly interpret the original meaning. If then the translator is unable to do this, erroneous information is conveyed.

The major challenge in the process of translation is the meaning which will occur in the process of translation and not translation as a product. Hatim and Munday (2004) suggest that the main problem in translation is determining whether the source meaning has been accurately transferred to the Target Text. Thus, whether or not the meaning has been accurately rendered in both languages is what greatly matters.

Language is central in the transfer of meaning. The rules of one language may differ from those of another. A translator has to understand a Source Text and then convert it to another language, while preserving the meaning, the style and the primary purpose of the Source Text. Such an aspect requires extensive proficiency in both languages as well as specialized cultural knowledge. It is the duty and mandate of a translator to choose how to best render the meaning.

Translation entails a sophisticated process. The translators decode a particular vocabulary or noted sentence and pay a close attention to central context related to such. Translation errors may be as a result of a misunderstanding of such a translation's outcome that fails to correctly translate the key meaning to ensure translated text is effectively modeled and not structured contextually. It occurs because of incorrect word choices within a text.

THEORETICAL FRAMEWORK

3.1 Relevance Theory

The Relevance Theory is an outline for comprehending the utterances through accurate interpretation. It was first developed by Sperber and Wilson in 1986. It was initially inspired by the works of Paul Grice. With time, it has become a pragmatic framework that stands on its own. Theorists believe that human communication and information transfer is typically intention-based. In this case, humans not only see verbal comprehension as a way of decoding speech signals, but also an aspect that entails the recognition of the speaker's intentions.

The relevance theory aims at explaining the fact that communicators always disseminate more information from their projections and utterances more than what is confined in the literal sense. Sperber and Wilson claimed that the elements of human verbal communication are ostensive as they recollect their addressee's intention based on the fact that the communicator intends to transfer some informative details (<https://doi.org/10.1093/acrefore/9780199384655.013.201>). This is termed as 'ostensive-inferential communication' to reflect the fact that communicators communicate openly showing their intention to communicate and that audiences make inferences about the intentions of the communicators. A relevant utterance based on such a technical sense can be said as one from which multiple conclusions can be made while the addressee incurs a low processing cost. The addressees utilize the information carried in the utterance collectively with their expectations regarding to the relevance, real world competence and the sensory input, to gather conclusions concerning what was intended by the communicator.

The theory operates in the principle that every utterance conveys information that is relevant enough for it to be worth the effort of the addressee to process it. This theory relies heavily on inference. Inferences which are intended by the primary communicator are categorized as explicatures and implicatures. The explicature of an utterance entails what is overtly said, often supplemented by contextual information. Implicatures are conveyed without actually stating them.

This theory was further advanced by Ernst Gutt (1989) who views translation as a special form of communication involving three participants: the author, the translator and the Target Language text reader.

The duty of a translator is to ensure there is a match between the source language communicator's intentions with that of the Target Text readers' expectation.

In 1987, Sperber and Wilson applied Grice's idea to propose the Relevance Theory which views communication from a cognitive point of view. They assert that every act of communication assumes the message is relevant for both the sender and the recipient. Consequently, when a recipient receives a message, he/she should have the capacity, with minimum effort, choose from a variety of possible interpretations that he/she believes was considered most relevant by the sender. The theory is based on relevance.

Gutt (1990) suggests that translation is just another act of communication (secondary communication) which is based on the interpretive use of language. Inference has to take place on the basis of common knowledge and understanding between the sender and recipient and this is based on the context and the speaker's intention to share the message. This theory approaches communication from the point of view of competence as opposed to behavior. It tries to give a clear account of how our minds enable us to communicate with one another (Gutt,1989).

Relevance is said to be a property of inputs (assumptions, thoughts and utterances) that aid in cognitive processes. In this study, the Relevance Theory was used as a benchmark to ascertain whether the translations on Google Translate meet the threshold of what can be considered an accurate translation in relation to the human translations. Therefore, the Google Translate translations were examined using the human translations and the researcher's intuition to determine whether it is relevant and communicative. If the author's intention is not reflected on the Google Translate translations, then the translation was considered to be erroneous.

Language processing involves the interaction between the linguistic input and the cognitive context of the receiver. This means that a translation must not only convey the same linguistic information as the source text but also consider the contextual factors that may influence how the target audience perceives and understands the message. Relevance Theory helped in identifying potential issues related to context such as pragmatic mismatches. Machine translation may struggle to accurately capture the intended meaning of a sentence or phrase that relies heavily on the context or the speaker's intentions. Human translators, on the other hand, can take into account the broader context and adjust the translation accordingly to ensure that the target audience understands the intended meaning. Relevance Theory thus provides a useful framework for assessing mismatches between human translation and machine translation by highlighting the importance of considering contextual factors in language processing. By understanding how humans interpret language, we can identify potential issues and develop strategies for improving the accuracy and quality of translations.

RESEARCH METHOD

4.1 Research Design

The descriptive research design was used. Here, the researcher did not have any control over the variables. Instead, the variables were just identified, observed and measured. Data in this study was drawn from newspaper headlines both in English and Kiswahili. 25 were from the Daily Nation while 25 were from Taifa Leo. These were translated using Google Translate and later by human translators. A detailed description of the output from both the human and Google Translate translations was done. This was with the intention of studying the Google Translate translations against the human translations complemented by the researcher's own intuition to identify errors on Google Translate and later determine its degree of accuracy. To achieve this, data was analyzed both qualitatively and quantitatively.

4.2 Sampling Procedures and Sample Size

Random sampling was utilized in order to choose samples that maximize understanding of the phenomena. This sampling method was chosen so as to give each sample an equal chance of being selected and therefore ensure objectivity. These samples were drawn from newspaper headlines from the Daily Nation and Taifa Leo between June and July 2022. A total of one hundred news headlines were identified in twenty-six newspaper issues. There were no restrictions on the type of headline that would be chosen and so headlines from news items, editorials and opinions were all selected. Through systematic random sampling, all items were assigned numbers from 1-100 and every 2nd item was chosen. Out of the hundred items identified, only fifty items were selected. Twenty-five of them were from the Daily Nation (English) while twenty-five were from Taifa Leo (Kiswahili).

A questionnaire was used to extract the human translations from three human translators. They were purposively selected on the basis of their proficiency in both English and Kiswahili and some experience in translation. With this in mind, high school Kiswahili teachers who were active in service were chosen regardless of gender or geographical location. This is owing to the fact that they have a fairly good proficiency in both English and Kiswahili and therefore they were highly unlikely to have challenges understanding the items presented to them. They also have some background in translation given that during their training in college, they took some units in translation. A detailed study was done to determine whether the Google Translate translations are the same as the human translations or whether there are mismatches. The mismatches identified were used to calculate the extent to which Google Translate is accurate.

This research used both the qualitative and quantitative approaches. The qualitative method was used to describe the types of errors identified while the quantitative approach was used to measure the error percentage and so help in determining the accuracy of Google Translate

4.3 Data Collection Procedures

In this study, the data collected were in form of statements drawn from news headlines in two local dailies (Daily Nation and Taifa Leo) published between June and July 2022. These headlines, once selected, were fed to Google Translate in order to get the translation output. This data was then, through questionnaires, translated by human translators. Once translated, Google Translate and human translations were compared to find out whether they were the same or there were discrepancies.

Although this study concerns studying Google Translate errors against human translations, it does not mean that the human translator is perfect. It is the nature of humans to make mistakes and so human translators may not know enough, may sometimes confuse Source Language meaning and incorrectly render it to the Target Language or miss certain connotations and nuances (Robinson, 2011). All this notwithstanding, the human translator is more accurate than the machine. In addition, as witnessed during the research, the human and Google translations may differ in the wording but still have the same meaning. The study thus focused on the communicativeness of the translated data. In a situation where discrepancies in the human translations were noted, the researcher acted as the moderator to get the best possible translation.

FINDINGS AND DISCUSSION

From the data collected, it was discovered that Google Translate was able to correctly translate some headlines from English to Kiswahili and vice versa using the exact wording as that of the human translator. Some of these headlines are tabulated below:

Figure 1.1 Translations with exact wording and meaning

SOURCE TEXT	GOOGLE TRANSLATE TRANSLATIONS	HUMAN TRANSLATIONS
1. Wakenyawanunuaungakwabeiyajuulichayaahadiyarais.	Kenyans buy flour at a high price despite the president's promise.	Kenyans buy flour at a high cost despite the president's promise
2. Mwalimu kizimbanikwakumnajisimwanafunzi.	Teacher in the dock for defiling a student.	A teacher in the dock for defiling a student.
3. Uhuru invited ghosts of Congo.	Uhuru alialikamizimuya Kongo.	Uhuru alialikamizimuya Kongo.
4. Cash, crypto deals and four murders.	Fedha, mikatabaya crypto namauajimanne.	Fedha, mikatabaya crypto namauajimanne.
5. Fall of Sakaja.	KuangukakwaSakaja.	KuangukakwaSakaja.

In other cases, the meaning of Google Translate and human translations were the same with slightly different wording. These are tabulated below:

Figure 1.2 Translations with slightly different wording but same meaning

SOURCE TEXT	GT TRANSLATIONS	HUMAN TRANSLATIONS
6. Mung'aroapumuakortiikitupak esi.	Mung'aro breathes a sigh of relief as the court throws out the case.	Reprieve for Mung'aro as court dismisses his case.
7. Walionusurikaajaliyamto Nithi wasimuliatukiohilo.	Survivors of the Nithi river accident recount the incident.	Survivors of Nithi river accident narrate the ordeal.
8. Uhuruawaaga marais kablaastaafuAgosti.	Uhuru bids farewell to presidents before he retires in August.	Uhuru bids presidents farewell before retiring in August.
9. Raia wa Kenya wasichaguewafisadi Agosti.	Kenyan people should not vote for corrupt people in August	Kenyan citizens should not elect corrupt leaders in August.

10. Match political promises made on property to current realities.	Linganishaahadi za kisiasazinazotolewakwenyemalinahalihalisiya sasa.	Sawazishaahadi za bidhaanauhalisiawakisasa.
11. Let's shun large families.	Tujiepushenafamiliakubwa.	Tuachekuwanafamiliakubwa.

In other situations, Google Translate gave a totally different output, thus completely distorting the meaning. This is especially so where language has been used figuratively as shown below.

Figure 1.3 Translations with completely different meaning

SOURCE LANGUAGE	GT TRANSLATION	HUMAN TRANSLATION
12. Fedha: wakuuwashulesasawaingiabaridi.	Money: school principals are now getting cold.	Money: school heads now worried.
13. Sakajaarukakiunzi cha mwisho.	Sakaja jumps the last frame.	Sakaja overcomes the last hurdle.
14. Mrithiwa Uhuru kuona moto.	Mrithiwa Uhuru to see the fire.	Uhuru's predecessor to face it rough.
15. Arrest skyrocketing cost of living and food prices.	Kukamatakupandakwabeiya Maisha navyakula.	Komeshagharamaya Maisha nabeiyavyakulainayopanda.
16. Traffic madness hits city on Green Park's trial run.	Wazimuwatrafikiwakumbajjikwenyembio za majaribio za Green Park.	Magariyakosautaratibumjinihukumajaribioya Green Park yakianza.
17. KWS on the spot as wildlife run amok.	KWS papohapohuku Wanyama poriwakikimbia.	KWS kuanikwahuku Wanyama poriwakieneakote.

In some instances, Google Translate is unable to correctly render figurative language. Instead, it does a literal translation, thus completely distorting the meaning. A case in point is exemplified below.

ST: Fedha: wakuuwashulesasawaingiabaridi.

GT: Money: school principals are now getting cold.

HT: Money: school heads now worried.

'waingiabaridi' means to be jittery or worried. Google Translate translates this as 'getting cold', giving an implication of temperature or weather conditions.

ST: Mrithiwa Uhuru kuona moto.

GT: Mrithiwa Uhuru to see the fire.

HT: Uhuru's predecessor to face it rough.

In this second case, 'kuona moto' has been used figuratively to mean to undergo a difficult situation or face it rough as the human translator rightly puts it. Once again, Google Translate does a literal translation and renders it as 'to see fire', giving the implication of coming face to face with a live fire which distorts the original meaning.

In yet other cases, Google Translate was completely unable to translate an expression especially from English to Kiswahili and so used it as in the source text as shown in the table below.

Figure 1.4 Use of source language expressions

SOURCE TEXT	GT TRANSLATIONS	HUMAN TRANSLATIONS
18. No more 'ugali saucer' as the price of flour soars.	Hakuna 'ugali saucer' beiyaungainapanda.	Hakuna ugali wakuongezewahukubeiyaungaikizidikupanda.
19. Mask up! Kagwe now orders amid surge in Covid 19 infections.	Mask up! Kagwesasainaagizahukukukiwanaongezeko la maambukiziya COVID	Vaabarako! Kagwesasaaamuruhukusambaakwa Korona kukizidi
20. Game on as Sakaja, Wavinya, Malombe get IEBC nod to vie.	Game on as Sakaja, Wavinya, Malombewapata IEBC nod to vie.	UshindanihukuSakaja, Wavinya, Malombewakipewakibali cha uchaguzina IEBC.

The item below shows an example where Google Translate is unable to translate an expression and so renders it as it was originally.

ST: No more 'ugali saucer' as the price of flour soars.

GT: Hakuna 'ugali saucer' beiyaungainapanda.

HT: Hakuna ugali wakuongezewahukubeiyaungaikizidikupanda.

GT cannot decipher the meaning of *'ugali saucer'* a term used in local eateries to refer to some additional maize meal. This is because it cannot understand the context and the cultural situations when the term is used.

ST: Mask up! Kagwe now orders amid surge in Covid 19 infections.

GT: Mask up! Kagwesasainaagizahukukukiwanaongezeko la maambukiziya COVID

HT: Vaabarakoa! Kagwesasaaamuruhukukusambaakwa Korona kukizidi

'Mask up' means to put on a mask. Google Translate has been unable to get a correct equivalent in Kiswahili and resorted to using the expression as it originally was.

This research focused on the communicativeness of the translated data. The findings revealed that some items such as idiomatic expressions, technical language, cultural references, register and ambiguity exhibited meaning loss when making comparison between human and Google translations. A total of 22 errors were identified, 12 in Kiswahili source data while 10 are in English source data. Based on the analysis of the accuracy of Google Translate translations against their human translated equivalents, the study found that overall, Google Translate accurately conveyed correctly the meaning of 28/50 (56.0%) instructions examined. This implies that Google Translate is 56% accurate in translating Kiswahili language to English and vice versa. Because Google Translate supports so many languages, its accuracy depends on the specific language pairs being targeted by a particular study and the field being translated, whether technical or non-technical.

CONCLUSION

The study has established that in comparison to human translation, Google Translate is faster and more cost-effective, but it may not always produce the same level of accuracy or quality as a human translator. Human translators have a better understanding of the cultural context and nuances of the language, allowing them to produce more accurate and culturally appropriate translations.

Though there are impressive developments on the quality of Machine Translation, it is imperative to remember that especially for low resource languages, automated translation quality is quite far from being perfect. These models may encounter errors typical to Machine Translation which include poor performance on some specific genres depending on the subject area, various dialects of a language, or sometimes producing overly literal translations and generally poor performance on informal or verbal communication. To remedy this, Google Translate could consider introducing human translators to help in the areas Google Translate experiences difficulties or even apply theories such as the relevance theory so that as translations are being made, inferences could be made to make the Target Text as close as possible to the Source Text.

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