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Online Machine Translation Efficiency in Translating Fixed Expressions Between English and Arabic (Proverbs as a Case-in-Point)

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***Abstract*—Doubtless, Machine Translation has affected translation as a process and a product. This study tests MT's effectiveness in translating proverbs between English and Arabic. It investigates one important CAT tool device. It aims to attest which MT will be more communicative, semantic or literal giving target equivalent and clarifying the error type the MT would make. To achieve these aims, thirty proverbs, half Arabic and half English, have been randomly selected, taken from The Dictionary of Common English Proverbs Translated and Explained written by Attia (2004) and then translated using five different online MTs: Google, Reverso, Yandex, Systran, and Bing. As Alabbasi (2015) suggested, the researcher adopted Newmark's (1988) Taxonomy of translation methods, selecting three major divisions that include the other types in one way or another viz. Literal, Semantic and Communicative. Analyzing data, *Kruskal-Wallis* Test and *Chi-square* were used as well as descriptive statistics. It is found that the most translation method MT produced when faced with a proverb is the literal, semantic and communicative respectively. Bing is the most effective MT providing communicative proverbial equivalents. Bing and Google, in the same rank, provide semantic equivalents. Furthermore, the least effective MT among the five is Yandex. MT errors diverge between missing the implied meaning, weakly structured translations, wrong synonyms and meaning distorting.**

***Index Terms*—machine translation, fixed expressions, proverbs, translation methods, Google translate**

I. Introduction

In such a time when millions of people travel around the planet, by choice or due to economic, business, or political reasons, the translation of the spoken and written word is now of ever-increasing importance. This planet we are living on becomes similar to a small village where people are obliged to communicate with other people of different cultures and languages in order to continue living in one way or another. Therefore, there emerged an urgent need for translation and translators to link these completely faraway societies together.

Newmark (1988, p. 5) provided us with the most prominent definitions of translation stating that "translation is rendering the meaning of a text into another language in the way that the author intended the text". Whereas Newmark stressed the idea of transferring the meaning in the above-mentioned definition, Nida and Taber (1982, p. 12) stated: "translating consists of in the reproducing in the receptor language the closest *natural equivalent* of the SL message, firstly in terms of meaning and secondly in terms of style".

Translation is a difficult craft to master, as it requires not only the transferring of meaning but also providing a natural equivalent with respect to cultural and lexical differences between languages. In fact, culture and translation are inseparable. However, as the phenomenon of translation is in continuous development, it is almost impossible to know and grasp all the languages present in the world by human beings. In fact, it is rare for one person to speak more than four languages fluently, not to mention to have an overall knowledge of these languages' standards, contexts, and the cultures accompanying them. Therefore, translation researchers are looking for all possible methods and tools to facilitate this process and provide all people, including those who can only speak their native language, with the ability to communicate with others and understand them easily, effectively and quickly.

One of these tools is machine translation, a branch of computational linguistics that focuses on the use of e-devices to render a speech or text from an SL to a TL. Even though there is not any guarantee that machine translation is of high quality all the time, many programs are able to provide powerful and beneficial outputs within a limited time and constraints.

Translating cultural expressions is one area of difficulty that translation students and even professionals suffer from. Nowadays, and with the help of Computer-Assisted Translation (CAT) tools, this problem may be mitigated. It is an attempt to help translators, especially novices, to find the most appropriate machine translation engine that helps them in facing this difficulty.

A. Significance of the Study

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English-Arabic translation is becoming a widespread area for work and learners as well as in almost all walks of life, especially for cross-cultural purposes. Therefore, the use of MT has increased a lot recently, and these machine translation websites' developers are trying to make them more and more effective every single day. This research is significant as it aims to ensure these websites' capability to translate cultural expressions as effectively and naturally as possible.

B. Aims of the Study

The purpose of this study is to test the efficiency of MT in translating proverbs and provide an equivalent that affects the target community without distorting the meaning or losing the cultural effect of the source cultural expressions. It also attempts to decide which of these machine translation websites are going to give the closest natural and cultural equivalents based on the translation approach utilized by these MTs, which are the literal, semantic, and communicative methods. Additionally, it explores whether there are any significant differences among MT engines in proverbs' translations. Furthermore, it analyses the problems found in the translations produced by these MT engines, identifies and classifies them.

II. Literature Review

A. Machine Translation

The automatic use of computers to translate from one language to another is known as Machine Translation (MT). Terminologically, it is called Computer-Assisted Translation (CAT) tools belonging to the field of artificial intelligence; a field specialized in developing software programs that can stimulate human thinking. Sofer (2006) defines MT as "a term used to describe translation performed by a computer software program, as an alternative to human translation, performed by a human translator" (p. 83). For Balkan (1992) MT refers to "any system that actually performs a translation" and classifies "any other computerized translator tool which falls short of translating as a CAT device" (p. 408). Currently, these technologies are mostly available through websites like Google.translate.com, Microsoft Bing.com, ReversoContext.com, BabelFish, etc. They translate text algorithmically from an SL to a TL. The main focus of MT is on employing computers to aid and support humans as they translate from one language to another.

B. Machine Translation Aim

Vauquois (1998) describes MT as "being aimed at enabling a computer to transfer natural language utterances, or to process a natural language in terms of lexical, syntactic and semantic dimensions" (as cited by Lin & Chien, 2009, p. 134). Acikgoz and Sert (2006) emphasized that one prominent reason behind the world's globalization is machine translation.

Many linguists and scholars who had witnessed the beginning of MT had expected that those laughable outputs of that time are going to get better and better. They anticipated the future of MT and that one day, humans might have to just edit, revise or proofread computer translations. However, they never believed that a computer could understand the text the same way a human could. Although a machine would never understand, Champollion (2001) contended that it can translate.

Some other scholars were completely against the idea of depending on MT. For Thriveni (2002) one language cannot adequately convey the meaning of another because speakers of various languages tend to think in distinctly different ways. She maintains that as an MT cannot easily expose literature, cultural sensibilities in the text, or speeches, cultural interpretation and identification by a translator should be a more accurate manner to translate.

C. *Process of Machine Translation*

Machine translation includes speech translation and word translation. It relies on four main techniques: (a) word analysis, (b) grammar analysis, (c) meaning analysis, and (d) style analysis. To clarify the process, the sentence is first divided into each word; then, the meaning of each word is subsequently clarified using the machine database's electronic dictionary. After that, the meaning of the sentence is analyzed according to grammar rules and then transformed into concept constructions. Finally, the language model is used to generate the target language. Vauquois (1968) provided a diagram, called later the Vauquois Triangle. The procedure includes analyzing the ST, transferring data from a source representation to a target representation, and then creating the TT. This diagram is presented in Figure 1:

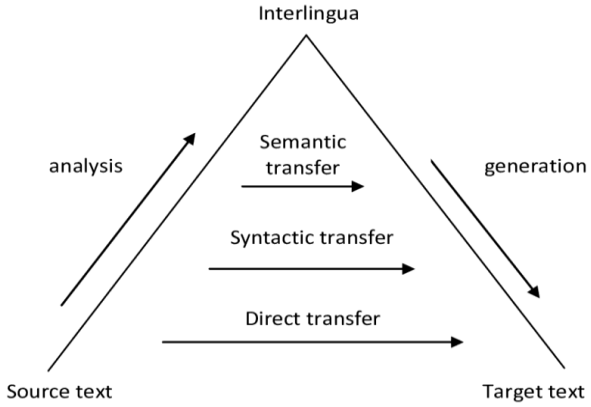

Figure 1. Machine Translation, Vauquois Triangle 1968

D. Machine Translation in Translation Studies

A very important area of translation studies is now machine translation. Several types of research were conducted regarding MT such as Lembersky et al. (2012), Ali (2016), Anderson (1995), Belam (2003) etc. Several studies attempted to either compare MT to HT or to MTs' themselves. For the former, Ismajli and Maliqi (2021) studied the efficiency of HT versus MT. They indicated that MTs:

"*have proven to be a truly big breakthrough since such applications employed the practice of post-editing – an MT system outputs an initial translation and a human translator edits it for correctness, ideally saving time over translating from scratch*" (p. 307).

Li et al. (2014) evaluated Google English translation comparing it to human English translation and the original Chinese. They found a significant correlation between Google translation with the Chinese in formality even though it is not that great. Latent Semantic Analysis (LSA) and Content Word Overlap (CWO) showed that both translations were highly correlated with one another in terms of cohesion. However, Google Translation had higher correlations with the Chinese than human translation. Almahasees and Mahmoud (2022) without human translators, attempted to evaluate the effectiveness of Google Image Translator in translating Arabic-English language on signage. Besides, the study intended to determine Google's ability to analyze the TT of its picture service in terms of orthography, grammar, lexis, and semantics using Costa et al. (2015) Linguistic Error Analysis Framework. The study demonstrated that Google Translate makes mistakes such as incorrect translation, omission, addition, incorrect choice, incorrect ordering, subject-verb disagreement, and semantic mistakes. They concluded that Google Image Translation service helps in configuring the overall message. Thus, a human translation cannot be excluded for its adequacy and effectiveness.

Bergasa and Sanz (2019) conducted a contrastive analysis of tourist text errors in three MTs, namely Google Translator, Systran, and Bing, on the one hand, and human translation, on the other, in order to compare the suitability of various MT engines. They discovered Google Translator to be the most reliable in terms of machine translation systems' accuracy and fluency, and Systran to be the least accurate. There are more spelling mistakes in human translation than any other source. It is unusual to encounter this kind of inaccuracy in machine translations that use lexical unit retrieval from the internet. They concluded that MT may be useful as a starting point since the translations are not fully adequate. Therefore, they insisted on post-edition for obtaining better results in similarity to the results obtained by Sakre (2019) conducted on business texts.

E. Translating Proverbs Using MT

As for Barbour (1963), there are various sources of proverbs. According to Mieder (1994), a proverb is a brief, well-known expression of the people that encapsulates knowledge, morality, and traditional beliefs in a symbolic, fixed, and memorably structured form that is passed down through generations. According to Alshammari (2015), this effective form of communication serves both literary and practical purposes. Besides, they are "special, fixed, unchanged phrases with particular, fixed, unchanged meanings," according to Ghazala (1995, p. 138).

Generally, in a cultural context, Latief et al. (2020) looked at the efficiency of MT to create the technology-based language translation system in Indonesia utilizing Google Translate (GT). The results demonstrated that written translation outperforms image translation using GT. Consider the cultural context as expressive in interaction, and GT, as one of the technological communication tools available, Google translation must be used effectively to overcome language translation systems and cultural barriers. Studying proverbs' translation using online MT, Al-khresheh and Almaaytah (2018) evaluated GT's accuracy in translating several English proverbs into Arabic. Limited to a small number of randomly selected English proverbs and using only GT, the findings revealed that when rendering the same meaning of English proverbs into Arabic, 'Google Translate' had some linguistic issues, particularly with multiple-meaning words, which were discovered to present numerous challenges and difficulties to online translation. This was clear in the form of literal translations, incorrect TL equivalents, incorrect word order, grammatical mistakes and

inappropriate lexical words. The researchers concluded that the level of accuracy is not likely to be accurate and unquestionable. Sharma and Goyal (2011) used Birla et al. (2009) algorithm to extract Multiword Expressions from an English text. They used the extraction process for multi-word expressions and mono-word-meaning to find the appropriate words for the lexical database. The researchers used that algorithm in MT to render proverbs. Using the Relational Data Approach, they tested over 800 Hindi to Punjabi proverbs.

F. Google Translate and Other Translation Engines

Several studies, including Al-Kabi et al. (2013), Abdulhaq (2016), and Jabak (2016), used Google Translate (GT) because it is the most widely used and popular MT for both Arabic and English (2019). They concluded that MT produces literal translations that do not have the same effect as the original. It can, however, handle simple sentences and idiomatic expressions. They recommend that MT should be fed with complex and metaphorical expressions and their solutions in addition to the technical expressions and terms.

Comparing GT with other translation engines, Ali (2020) evaluated the English-Arabic TT translation of selected UN records using three MTs viz. Google Translate, Microsoft Bing, and Ginger. The ST was divided into 84 meaningful passages. After correcting the TT using two translation factors: fidelity and intelligibility, the results show that none of the three translation engines perfectly translated the STs, with a preference for Microsoft Bing translation as the best one. Comparatively, Ginger's translation was the most accurate followed by Microsoft Bing and Google translation respectively.

When Polat et al. (2018) compared Google Translate to Yandex Translate for translating Kyrgyz proverbs into English and Turkish at the lexical, semantic, and syntactic levels, they discovered that Google Translate was more accurate than Yandex Translate at the lexical, semantic, and syntactic levels in translating phrases and sentences of proverbs expressions. The most common errors generated by the two MTs were verb tense, comma, and spelling, according to error analysis of grammatical items. Using a set of 100 proverbs from English into Arabic, Hamdi, Nakae, and Okashs (2013) investigated the translation accuracy of Google Translate, Bing Translator, and SDL free translation. They found that only a few proverbs were accurately translated and that Google is slightly better than the two.

G. Common Errors of Machine Translation

According to Hamdi et al. (2013), when it comes to translating proverbs, online translation tools face a variety of challenges, such as displaying a literal translation when the accurate translation is not stored in its memory. When dealing with linguistic structures that require a higher level of accuracy, such as proverbs, several linguistic and technical issues arise.

For Vilar et al. (2006), the following five points summarize the most common errors made by MT, namely "(a) missing words, (b) word order, (c) incorrect words, (d) unknown words, and (e) punctuation errors" (p. 698). It indicates that the system was unable to find the correct translation, and this point has five sub-points: sense, incorrect form, extra words, style, and idioms. The last idiom subcategory is concerned with translating cultural expressions in general. The MT system does not recognize these idioms and instead translates them literally, resulting in serious errors.

H. Translation Methods

Translation methods are presented in three main headings: procedures (Vinay & Darblent, 1958); methods (Newmark, 1988; Ghazala, 1995; AL-Abbasi, 2010) and strategies (Baker, 1992; Venuti, 1998; As-Safi, 2002; Pederson, 2007). However, most of them classify those procedures, methods or strategies into two main types. It is worth mentioning that most of the scholars discuss the idea that there are two extreme dimensions. The first, if its procedures or strategies are followed, leads to literal (Vinay & Darblent, 1958; Ghazal, 1995); SL-Oriented (Newmark, 1988; Pederson, 2007), and what others like Venuti (1998) and As-Safi (2002) have called Domesticating and General Strategies respectively. On the other extreme, following some procedures leads to Oblique translation (Vinay & Darblent, 1958); TL-Oriented (Newmark, 1988; Pederson, 2007); free (Ghazala, 1995); foreignizing (Venuti, obcit) and specific (As-Safi, 2002). In addition, Baker (1992) classifies the strategies into two types also, but some strategies work at the word level and others work at the sentence level. In this regard, a researcher cannot escape Nida's (1964) formal equivalence and Nida and Taber's (1982) dynamic equivalence.

I. Newmark's (1988) Taxonomy

In general, Newmark (1988) divided translation methods into two categories: SL-oriented and TL-oriented. The methods used in the case of the first are word-for-word translation, literal translation, faithful translation and semantic translation. On the other hand, the TL-oriented methods are adaptation, free translation, idiomatic translation and communicative translation.

III. Methodology

This study is descriptive-qualitative with a content analysis method. However, quantitative analysis is applied to help reach accurate results.

A. Source Text Selection

The source of data is 30 proverbs, half English and half Arabic, selected randomly from *The Dictionary of Common English Proverbs Translated and Explained* by Attia (2004). This book provided more than 1500 common English proverbs with their standard translation in Arabic as well as an explanation for the proverb's intended meaning.

B. Machine Translation Selection

As other previous studies focused on Google Translate only, this study intended to test a variety of other MTs in an attempt to look for better options and outputs. Proverbs were translated using five different machine translation engines, which are **Google Translate**, **Reverso Translation**, **Yandex Translator**, **Systran Translate**, and **Bing Microsoft Translator**. This selection was based on popularity, free service and most importantly providing the Arabic language. After the outputs of the proverbs were provided, the analysis was done accordingly and the problems found in these outputs were presented and discussed.

C. Translation Methods Adopted

In making a decision for each MT engine translation output for each proverb, the researcher adopted Newmark's (1988) Taxonomy of translation methods by selecting three major divisions that include the other types in one way or another, as suggested by Alabbasi (2015), viz. Literal (L), Semantic (S) and Communicative (C).

D. Procedures & Analysis

The 30 ST proverbs (15 are English & 15 are Arabic) have been listed aligned to their Standard Translations as provided in *The Dictionary of Common English Proverbs Translated and Explained* written by Attia (2004). Then, under each Machine Translation engine, the target text translation is written starting with Systran Translate followed by Google Translate, Reverso.Com, Yandex Translate and Microsoft Bing Translate respectively. To make a decision for each MT engine output for each proverb, Literal (L), Semantic(S) and Communicative (C) methods were the categories adopted and written under each MT's translation of the ST proverb. Using the PSS analysis, the three decisions for each MT output were encoded as 1= Literal, 2= Semantic & 3=Communicative. In the analysis, *Kruskal-Wallis Test*, *Qi-Square* and other descriptive statistics were used.

IV. Results & Discussion

A. Machine Translation vs. Translation Methods

TABLE 1
MT ENGINE'S EFFECTIVENESS IN RELATION TO TRANSLATION METHODS

	Machine Translation						Total	
Translation Methods		Systran	Google	Reverso	Yandex	Bing	**Total**	**%**
Literal	Freq.	16	13	18	19	12	78	52.0
	%	**20.5**	**16.7**	**23.1**	**24.4**	**15.3**	100	
Semantic	Freq.	11	12	8	9	12	52	**34.7**
	%	**21.2**	**23.1**	**15.3**	**17.3**	**23.1**	100	
Communicative	Freq.	3	5	4	2	6	20	**13.3**
	%	**15**	**25**	**20**	**10**	**30**		
Total	30		30	30	30	30	150	100

As Table 1 shows the most dominant method in all these MTs is obviously the Literal with a percentage of 52.0%, followed by the Semantic with a percentage of 34.7%, and then finally comes the Communicative method with a percentage of 13.3%. This result is similar to those of Al-Kabi et al. (2013), Abdulhaq (2016) and Jabak (2019). They found that MT gives literal translations and cannot produce the same effect as the original.

If, however, focusing on the MT effectiveness of each engine on its own, even though the percentage is not that high, Bing Translate has the highest rank in providing communicative translations with a percentage of 30% (N=6) and it is also of the lowest rank in providing Literal equivalents with a percentage of 15.3% (N=12). On contrary, it could be noticed, as well, that the least effective one is obviously Yandex in providing communicative equivalents, which is 10% (N=2) and the highest rank in providing Literal translation 24.4%(N=19). It is then followed by Google Translate, which provided communicative equivalents with a percentage of 25% (N=5). Regarding Semantic equivalents, both Bing Translate and Google Translate have got the highest rank with a percentage of 23.1% (N=12) each, followed by Systran at 21.2% (N=11) and Yandex with a percentage of 17.3% (N=9). The least effective one is Reverso Translate with a percentage of 15.3% (N=8). Comparing these results to that of Hamdi et al. (2013), results were different. Google Translate provided accurate translation slightly better than the other two. Testing the accuracy and fluency of Google Translate, Systran and Bing, Bergasa and Sanz (2019) discovered that GT produces the most reliable equivalent and Systran produces the least reliable one and that Bing is more reliable and accurate than Systran.

B. Significance of Translation Methods

TABLE 2
LEVEL OF SIGNIFICANCE

	Proverbs Translations	**N**	**Mean Rank**	**Chi-Square**	***df***	**Sig. (*P-value*)**
Machine Translation Engine	Literal	78	74.73	.259	2	.879
	Semantic	52	74.92			
	Communicative	20	80.00			
	Total	150				

a. a **P-value ≤ 0,05 is significant.*
b. *Grouping Variable:* Proverbs Translations
c. *Kruskal-Wallis Test: the non-parametric test equivalent of the ONE WAY ANOVA statistic, used for comparing different MTs.*

From Table 2, it is clear that χ^2=.259, *df*= 2 and the **p-value*= (.879) indicate variations among the MT engines regarding the methods of translations which is statistically insignificant. This result is similar to that of Hamdi et al. (2013). They pointed out "Although Google seemed to have better scores than others, the difference was insignificant". This may be due to the fact that most online translation tools depend on internet databases and similar syntactic architectures.

C. Comparison of the Effectiveness of Machine Translation

(a). Test of Normality

To compare MTs, a test of normality was carried out using Kolmogorov-Smirnov Test.

TABLE 3
ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST

		Machine Translation Engine	Proverbs Translations
N		150	150
Normal Parameters(a,b)	Mean	3.00	1.61
	Std. Deviation	1.419	.712
Most Extreme Differences	Absolute	.160	.325
	Positive	.160	.325
	Negative	-.160	-.195
Kolmogorov-Smirnov Z		1.954	3.986
Asymp. Sig. (2-tailed)		.001	.000

a Test distribution is Normal.
b Calculated from data.

Table 3 indicates that no normal distribution between the performance of MTs since the *p-value* is less than (.05). Therefore, the non-parametric *Kruskal-Wallis test* was used as an alternative to ONEWAY ANOVA.

(b). Npar Tests: Kruskal-Wallis Test

TABLE 4
COMPARISON OF MT TRANSLATIONS

	Machine Translation Engine (N=5)	Ranks		Test Statistics (a,b)		
		Mean Rank	Rank	Proverbs Translations		
				Chi-Square	*df*	Sig. (*P-value*)
Proverbs Translations (N=30)	Systran Translate	73.43	3	5.408	4	.248
	Google Translate	82.33	2			
	Reverso.com	70.30	4			
	Yandex Translate	65.73	5			
	Microsoft Bing Translate	85.70	1			

d. **P-value ≤0.05 is significant.*
e. *Grouping Variable:* Machine Translation Engine
f. *Kruskal-Wallis Test: the non-parametric test equivalent of the ONE WAY ANOVA statistic, used for comparing different MTs.*

Exploring the most effective MT, *Kruskal Wallis Test* was conducted. Results show that $\chi^2 = 5.408$, *df*=4 and the **p-value* (.248) is statistically insignificant among MT effective translation performance in favour of Bing Translate. Observing the mean ranks, Bing Translate produces the highest quality translation m=85.70. It is also clear that Google Translate is better than other MTs (m= 82.33). In the third rank is Systran m=73.43, followed by Reverso.com (m=70.30) and Yandex (m=65.73) respectively.

(c). The Overall Judgments

To determine the overall degree of Translation Method (TM) produced by each translation, the following grading rubric was applied.

TABLE 5
GRADING RUBRIC OF TM OF MT

Code	1	2	3
Description	**Literal**	**Semantic**	**Communicative**
Value	1 ≥ 1.6	1.7 ≥ 2.4	2.5 ≥ 3
%	0 ≥ 33.3%	33.4% ≥ 66.7%	66.8% ≥ 100%

After processing data according to the mentioned grading rubric, the following results are obtained as shown in the crosstabulation in Table six.

TABLE 6
APPROACHES OF TRANSLATIONS VS MT

Machine Translation Engine (N=5)	Mean	Std. Deviation	Result	Rank
Systran	1.57	.679	Literal	3
Google	1.73	.740	Semantic	2
Reverso	1.53	.730	Literal	4
Yandex	1.43	.626	Literal	5
Bing	1.80	.761	Semantic	1
Total	1.61	.712		

Table 6 indicates that all the translation engines result either in Semantic or Literal translation. In particular, Bing and Google are mostly producing Semantic Translation with priority to the former on the latter (m=1.80) vs. (m=1.73). On the other hand, Yandex, Reverso and Systran generally provide Literal Translation with means values of (1.43, 1.53 and 1.57) respectively.

(d). Analysis of Detected Errors

Having analyzed the outputs of each and all the MTs used in this study, these are some of the errors detected. The researcher has attempted to classify them due to the reason/s behind the difficulty. Examples are both English source-based and Arabic source-based.

1. Missing the Implied Meaning

TABLE 7
MISSING THE IMPLIED MEANING EXAMPLES

ST Proverb → / MT ↓	All work and no play makes Jack a dull boy
Google	كل عمل ولا لعب يجعل جاك صبياً مملاً
Bing	كل الأعمال وليس اللعب يجعل جاك صبياً مملاً
Yandex	كل العمل ولا اللعب يجعل جاك صبياً مملاً
Systran	كل العمل ولا اللعب يجعل جاك ولداً مملاً
Reverso	كل عمل ولا لعب يجعل من جاك ولداً مملاً

In English culture, this proverb is said to warn someone that he will not be an interesting person by working all the time. In Arabic, the possible communicative equivalent is *ساعة لقلبك وساعة لربك* (Attia, 2004). Literally, it means that you should divide your time between worshiping God and enjoying your life equally. As the implied meaning is a general piece of advice, there is no actual relation between this advice and Jack or worshiping. In this example, however, MT failed to capture the implied meaning and tended to translate the above proverb in an utterly literal translation instead. A person who has no clue about this proverb or the SL culture might be completely confused if faced with this proverb in any context. Perhaps, the first question crossing his mind would be 'Who is Jack?'. It is so frustrating that, though the internet is full of specialized online proverb dictionaries, MT is still incapable of capturing the implied meaning of most proverbs, even in English.

2. Weakly Structured Translations

TABLE 8
WEAKLY STRUCTURED TRANSLATIONS EXAMPLES

ST Proverb → / MT ↓	Beggars must not be choosers
Google	يجب إلّا يختار المتسولون
Bing	يجب ألّا يختار المتسولون
Yandex	يجب أن يكونوا شحاذين لا مختارين
Systran	لا يجب أن يكون المتسولون مختارون
Reverso	يجب أن يكن المتسولون لا يختارون

Table 8 shows that most of the translations are grammatically weak. 'Beggars must not be choosers' is a proverb said when you know you have no choice but to accept an offer or situation because it is the only one available. Whereas a communicative equivalent could be *(بلاش وقال أوزنه)* or *(شحات ويتشرط)*, a proper semantic equivalent might be (*ليس للشحاذ خيار*) or (*السائل لا يختار*). When translated to Arabic, only *Google* and *Bing* provided well-structured translations, though still somehow literal. However, it is shameful that the rest could not even provide well-ordered sentences. In fact, the translation provided **by *Reverso Translation* is** completely messy and wrongly ordered. A reader can still capture the intended meaning of a proverb if translated literally in some cases, but it is still unacceptable for MT to generate weakly structured and wrongly ordered sentences. In some cases, word order and some grammatical errors might change the whole meaning of a sentence.

3. Choosing the Wrong Synonym

Using wrong words is a common error of machine translation. Even though smart technology becomes smarter and smarter every passing day, a machine is still unable to think the same way as men, at least up to now. Once a human is faced with a word to translate, s/he is obliged to consider all the possible near-synonyms of this word in the TL and decide which one is the most suitable and proper to serve the intended meaning. This is decided based on the context, the translator's understating of that context, and sometimes even the writer's intention. Being that hard and complicated for a human, is it going to be easier for a machine to understand the context and choose the right synonym?

TABLE 9
CHOOSING THE WRONG SYNONYM

ST Proverb → / MT ↓	اطلبوا العلم من المهد إلى اللحد
Google	Seek knowledge from the cradle to the grave
Bing	Ask for knowledge from the cradle to grave
Yandex	Order the flag from cradle to grave
Systran	Seek science from the cradle to the grave
Reverso	Ask for science from the cradle to the limit

This example in Table 9 shows how MT chose to translate the words *(علم)* and the word (*اللحد*). This proverb, again, has a similar equivalent in English, which is (Seek learning from the cradle to the grave). The first word, pronounced as *ilm* means, in this context, learning or knowledge. However, another word pronounced and spelt just the same has another meaning, which is "*science*". The two meanings might look similar to some extent in this context, but both still have their own proper and suitable contexts. Whereas the proverb meant seeking knowledge and learning in general, "*Science* encompasses the systematic study of the structure and behavior of the physical and natural world through observation and experiment", Oxford Reference. ***Yandex***, on the other hand, went so far as to translate the same word as "*flag*". In Arabic, the equivalent synonym of the flag is "علم", pronounced as *Alam*, which is a homograph for the original word *ilm*. ***Reverso*** had also chosen to translate the word (لحد), pronounced as *lahd*, into (limit) because it is also a homograph of the word (حَد), pronounced as *hadd*. It also considered the first two letters as the Arabic definite article (*الـ*). In the beginning, the researcher thought that this error of mistranslation might be solved by adding diacritics to the original words. Diacritics are marks that can appear above or below letters to alter their pronunciation. However, even after adding these marks on the two words (عِلم) and (اللَّحد), it still did not help the MT to recognize the intended meaning and it still translated the two words as (flag) and (limit) instead of (cradle) and (grave).

In other words, near-synonyms and homonyms are a big reason behind many of the errors made by machine translation and a matter of confusion that machine translation still cannot overcome. A person who does not understand English might be clueless about this whole change of meaning only because MT could not choose the right and proper word among many other alternatives. Obviously, it goes back to the fact that a machine still cannot always understand the context well. It is still unable to weigh all the options available and decide which serves the context the best.

Perhaps, it is also because a machine will always be incapable of understanding the writer's intention. At least, not to the extent a man can.

4. Distorting the Meaning

TABLE 10
DISTORTING THE MEANING

ST Proverb → / MT ↓	تحت السواهي دواهي
Google Translate	Under the causes of disconnect
Bing Microsoft Translate	Still water runs deep
Yandex Translate	Under the sawahi dawahi
Systran Translate	Under the coast dwai
Reverso Translation	Under Suahi Dohai

The above proverb is actually a well-known Arabic proverb; a person who looks quiet and clueless, called "ساهي" in Arabic, might hide a much smarter, and wiser person, known as "داهية". Almost the five MTs failed to understand the two words and completely distorted the meaning. According to Attia (2004, p. 169), the best cultural equivalent for this proverb in English is "still waters run deep". Any reader would be completely confused if ever faced with the translations obtained by ***Google***, ***Reverso***, ***Yandex***, or ***Systran*** and the meaning will be either ambiguous or completely understandable. Most of the MTs chose to treat the two words as proper names and provided a transcription of them. This sheds light on the fact that the database of these MTs could not recognize these two words, even though of the fact that both are words used in Standard Arabic and are found in Arabic dictionaries.

Surprisingly, however, ***Bing*** provided the best, most accurate, cultural, and communicative equivalent in English Language even when back-translated. The other four should be fed more with the meaning of the most common proverbs and their possible cultural equivalents, or at least the meaning and synonyms of all words of any language in both their singular and plural form.

Based on the explanation provided by Attia (2004), it is said to indicate that a person should not wait for others to do the work for him; instead, he should do his things himself. Attia considered the English proverb (Paddle your own canoe) as the best English equivalent for it, considering that it implies the same sense. However, no MT was able to correctly render the meaning, at least literally. The proverb's words, sense, intended meaning, grammatical structure, and form were completely distorted and lost. A reader will not be able to even understand the literal idea as it was grammatically and semantically messed up.

Distorting the whole meaning and structure of a proverb might be one of the worst, most negatively affecting errors of MT as it leaves the reader entirely baffled and distorts the meaning of the whole context in some cases. Could someone imagine the confusion of putting one of the translations above in the middle of a dialogue or a context of any kind?

V. CONCLUSION

The study explores the effectiveness of MTs in translating English-Arabic proverbs and vice versa. In light of the results, it is found that the most utilized translation method MT resorted to when faced with a proverb is the literal, followed by the semantic, then finally the communicative method. Among the MTs being investigated, Bing is the most effective MT in translating proverbs with the highest percentage of communicative equivalents and the lowest percentage of literal equivalents. Both Bing and Google Translate are in the same rank providing semantic equivalents among all the others. However, Google is also equal to Reverso with the same percentage of providing communicative equivalents.

The least effective MT among the five was Yandex in providing communicative equivalents and it is also the highest in providing literal equivalents. If the overall results are taken into account, Bing and Google Translate produced semantic translations of proverbs while Yandex, Systran and Reverso were more literal. Results indicate statistically insignificant differences in MT effective translation performance in favour of Bing Translate. Having analyzed the outputs of each and all the five MTs used in this study, some errors that MT made are detected. These are (a) missing the implied meaning, (b) weakly structured translations, (c) choosing the wrong synonyms, and (d) distorting the meaning of the proverb. The author recommended more focus on the pre-translation stage done by online MT developers and careful post-revision carried out by translators and translation trainers and students. Further studies are needed to investigate MTs with different text genres so that results acquire strong evidence for being generalized.

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