Machine Translation: The Cultural and Idiomatic Challenge

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الترجمة الآلية: تحديات الثقافة و المصطلح

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ملخص:

بينما أصبحنا أكثر اعتماداً على الآلات في كل ناحية من حياتنا، فإن استخدام الآلات في الترجمة أصبح تحدياً مذهلاً. نحن نفضل توفير الوقت والجهد والتكلفة في الترجمة، حيث إن هذه المتطلبات متوفرة لدى الترجمة الآلية، لكن تبقى المشكلة في الدقة والولاء للنص. الترجمة الآلية يمكن أن تكون فعالة في ترجمة بعض النصوص المعينة إلا أن الواقع الإصطلاحي والثقافي في اللغات يبقى مشكلة تواجهها الترجمة الآلية. قام الباحثان في هذه الدراسة بعرض تحليلي لبعض النصوص و ترجمتها من خلال استخدام Google Translate ومن ثم قاما بتصنيف الترجمات من حيث الإصطلاحات، والمعاني المتعددة للمصطلحات، والتعابير ذات الدلالة المتعلقة بالنص، والتعابير غير المرتبطة بالنص، والقواعد، والتراكيب. ثم خلص الباحثان إلى عدد من التوصيات حول تحسين استخدام الترجمة الآلية حيث إن حركة الترجمة تسير باتجاه توظيف برامج الحاسوب في الترجمة بشكل فعال ولا مجال للتراجع رغم بقاء التدخل الإنساني في الترجمة أساسياً.

كلمات مفتاحية: الترجمة الآلية ، التدخل الإنساني، Google Translate، التراكيب، التعابير غير المرتبطة بالنص

Abstract:

While we grow to be more dependent on machines in all our walks of life, using machines in translation has become a remarkable challenge. Machines can satisfy our needs of saving time, effort and cost during the translation process; however, the issues of accuracy and fidelity to the source text are still unsolved. While machines can be functional in the

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translation of certain texts, the cultural and idiomatic realities of languages remain a big challenge. In this study, the researchers have analyzed some texts and their translations which are produced by Google Translate. The researchers have categorized the translations according to a group of markers and indicators: the implied vs. literal meaning, capturing the different senses, everyday language and culture, context-bound and context free expressions, grammatical structure, and the unit of translation. The researchers have reached a number of recommendations on how to enhance the use of machine translation. The translation movement is heading towards utilizing the use of machine programs in translation effectively; there is no turning back even though the human intervention in translation is still fundamental.

Introduction

Translation products are generally assessed in terms of speed, cost, and accuracy. While speed and cost in machine translation are guaranteed, accuracy remains the unattainable aspect which requires human intervention. When one wants to translate a letter from one of his/her friends from another continent or perhaps when one is assigned a homework to translate a report of many pages under time constraints, the first thing that occurs to one's mind is to rely, if partially, on Google Translate. Of course, it would be absurd to use a dictionary in such situations because one will be wasting minutes, perhaps hours, to find the proper word especially since time is considered something one cannot really afford to lose in this age of unstoppable force of speed. Using Google Translate, in most cases, gives the gist of the message in no time. Sometimes all is needed from translating a text is an approximate hint of the message. For example, in social media sites such as Facebook and Twitter, communicators from different linguistic backgrounds are able to get the gist of most messages posted on the social media. Accuracy in such cases is not important.

This research addresses the problem of the mistranslation of expressions especially idiomatic expressions from English into Arabic while using online machine translation programs such as Google Translate. While the work of the machine is still far from being adequately accurate, the task of translators is to find ways to boost the

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role of the machine in translation by giving certain recommendations on the procedural aspects since the technical side is not within the domain of translators. By highlighting their needs and expectations, translators can alert programmers to such needs so that they can be improved by adding the necessary applications to computer programs.

This research tackles and answers four main questions. First, what are the main errors that occur while using machine translation to translate cultural expressions from English to Arabic? Second, what are the factors that lead to these errors? Third, what solutions or strategies can be used to help solve these problems? Finally, how can the use of machines in translation be optimized on the side of the translator?

The topic of this research is important for many reasons. First, it would give an insight on the most common errors that occur when we as translators use machine translation to translate cultural expressions. Second, it would shed light on the important suggestions or advice on how to deal with such errors. Third, it would enhance the translators' skills and abilities on how to deal with machine translation; by doing so, it would also enhance their translations, as well.

Literature Review

Reliance on machines in translation is gaining momentum since machine translation, sometimes, gives the gist of the message at no cost. What the machine cannot accomplish yet is accuracy; a high level of accuracy requires human intervention. Google Translate is our friend in need when it comes to translation; it collects data and stores them for our future use by matching stored items with new ones. We cannot rely on machine translation much especially concerning cultural expressions. In most cases machine translations don not make any sense and they are even incomprehensible. While achieving a high level of accuracy in machine translation is a farfetched goal, attempts to improve it will not cease.

Olivia Craciunescu, Constanza Gerding-Salas and Susan Stringer-O'Keeffe (2004) define machine translation by referring to its aims of collecting necessary information for translation and putting it in one program that translates a text without any kind of "human intervention". It takes advantage of the computer's capability of making calculations for the sake of analyzing the structure of a

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sentence, breaking it down into "easily translatable elements" and creating a sentence with an equivalent content in the target language. Machine translation makes use of multilingual dictionaries or as they are called "plurilingual dictionaries" and "corpora of texts" which have been translated previously. (Retrieved from http://translationjournal.net/journal/ 29computers.htm on 5 October 2015).

In other words, machine translation is just an endless storage of knowledge and information; it is what every novice translator ever wants to have, a reliable memory that can store every bit of knowledge of dictionaries. But, is it really enough to have memory only? Translation is not about how many words or expressions one can memorize or remember, but it is how one combines everything in his/her disposal to create an acceptable and comprehensible text for the target readers and to negotiate meanings according to the social context within which the discourse takes place. One uses knowledge from the text, context, real life knowledge, and his/her experiences. There is also what the researchers call "one's positive impressions or value judgments." No matter how many dictionaries the machine translation uses, it can never imitate our impressions of things because only a human being can sense and judge whether an idea is truly meant or implicated in a given way in that particular culture or social context.

Morry Sofer (2009) suggests that we will always need human translators since language communicates need more than the literal meaning and there are shades of meaning that keep changing, not to mention the value judgments that people have to make about the "meaning and the intent" of a text (p.70). Human beings have what the researchers like to call a "sense of judgment" or creating impressions or values whether they are negative or positive towards things. This sense is only a privilege for human beings who attain this ability by getting familiar with a lot of cultures including one's own culture. Familiarity with other cultures does not just mean knowledge or information, it also means being able to develop a sense of judgment based on the cultural rules and realities; it is having the ability to tell what these words or expressions mean or implicate in a particular social context. In other words, after knowing a culture for a long time, one will have the advantage of judging whether an expression is acceptable to that culture or not. The negotiation of meanings between

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the translator and the source text requires knowledge of the interlocutors, the context, and the pragmatic and semiotic dimensions, the different constraints of the text, the genre, and the discourse, among other markers.

According to John Hutchins (2010), the quality of machine translation is poor especially concerning colloquial language used in many source texts such as the language of the social media. The language of the social media is generally colloquial, incoherent, ungrammatical and full of puns, allusions, neologisms, acronyms and abbreviations. Machine translation is usually used to provide its users with rough translations for getting information in a fast way without any cost. Machine translation can also be helpful in the translation of scientific and technical texts.

Claire Ellender (2012) says that Google Translate emerged as the best appropriate choice of a "free online translation package" for the non-specialized "end-users" who want to translate, and understand a text that consists of more than 150 words, "from French, German or Swedish into English." (Retrieved from. http://www.translationjournal.net/journal/ 61freexlation.htm on 18 November 2015)

Many researchers have discovered plenty of errors in machine translation. First, the problem of accuracy which is mentioned by Milam Aiken and Shilpa Balan (2011) who state that since Google Translate offers translations to so many languages; it led to variance in accuracy. The translation among European languages is good but it is really wanting among Asian languages. Even though it can never reach the level of expertise of professionals; it can still offer cheap and quick translations for "unusual language pairs". (Retrieved from http://www.translationjournal.net/journal/56google.htm on 18 November 2015)

Second, according to Nidhi Parkish (2012) there are some intricacies of machine translation such as violating the use of language, language pairs with different word orders, single words with multiple meanings, a group of words for a single word, lack of one-to-one correspondence of parts of speech between two languages, simulation of human language behavior by automatic means, rules of the grammar and vocabulary, and sentence formation which varies from language to language.

Third, Guillaume Wisniewski, Natalie Kubler, and Francois Yvon (2004) state that there are six different types of errors made by machine translation: "lexical errors", "morphological errors", "syntactic errors", "semantic errors", "format errors" (e.g.: error caused by a problem in the tokenization of the source sentence)", and "errors without a clear explanation". (Retrieved from http://transread.limsi.fr/lrec_Wisniewskietal.pdf on 18 November 2015)

Fourth, John Hutchins (2007) states more problems in machine translation. The first set of problems are the inherent linguistic problems such as bilingual lexical differences and bilingual structural ambiguity. The second are the non-linguistic problems of reality. The third are the stylistic problems. He also mentions some of the errors discovered in the post editing phase. For example, he mentions that misspelling is not recognized in the original, therefore not translated. There are also missing punctuation, complex syntax, prepositions, verb phrases, inversions, and reflexive verbs with inversion.

David Vilar et al (2006) give a hierarchal structure of types of errors. The first level includes these main classes: "Missing Words', "Word Order", "Incorrect Words', "Unknown Words" and "Punctuation" errors. "Incorrect words" means that the system is "unable to find" a correct translation (p.698-699) and this category consists of five subcategories which are sense, incorrect forms, extra words, style, and idioms. The subcategory of idioms is concerned with idiomatic expressions that the system does not recognize and translates them as a plain text which causes or leads to errors.

There are reasons behind the errors of machine translation. First, according to Rita Raley (2003) machine translation depends on the level of the complexity of the text; in other words, machine translation "only works to produce reasonably accurate and functional draft translations when the input is basic, and when both input and output are restricted with respect to style, vocabulary, figurative expression, and content; we are presented with a renewed utilitarianism; a renewed appreciation for the basic and easily translatable (the nonfigurative, the non-literary); and a new economics and pragmatics of language and informatic exchange." (p.293)

The second reason is that machine translation cannot sense the context; in other words, Guillaume Wisniewski, Natalie Kubler, and Francois Yvon (2004) state that since languages rely on contexts,

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denotations and connotations of words and combinations, machine translation is not capable of producing useable texts especially that users cannot provide the full context of the text. Machine translation is only for concrete situations and a way to save time instead of replacing humans, and in order to produce a good quality translation, it needs post editing.

The third reason is discussed by Guillaume Wisniewski, Natalie Kubler, and Francois Yvon (2004). Machine translation focuses on the source language; however, human translation concentrates on the comprehension of the target language "in order to reproduce meaning." (Retrieved from http://translationjournal.net/journal/29_computers.htm on 5 October 2015). The reason why machine translations are inaccurate is because they use dictionaries and follow "the situational limitations" (Retrieved from http://translationjournal.net/journal/29computers.htm on 5 October 2015) made by the programer. The programer gives rigid equivalents of individual words that appeal to him/her according to his/her knowledge of language and equivalents and according to the most up-to-date bilingual dictionaries. Other readers have different spatiotemporal realities that are bound to produce different meanings.

Human translation looks for ways to make the translation sound natural in the target language even if it means to neglect the source language for the sake of giving a more suitable effect. However, machine translation analyzes the limited data that it is provided with instead of analyzing the situation and devising or suggesting different plausible solutions for the problem based on these situations.

Fourth, Nataly Kelly (2014) notices that the quality of translation is "**highly subjective**". **Although machines can** "approximate human translation quality**," it is not clear which** version of human quality **they could imitate. If you give a text to one hundred human translators, the result would be one** hundred different translations. Which one of them is the best quality? Machine translation tools offer limited options in their outputs which are simplistic for complicated "linguistic realities of most translation projects."(Retrieved from http://www.smartling.com/blog/2014/01/09/machines-solve-worlds-translation-problem/ on 5 October 2015)

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Fifth, Tomasz Rozmyslowicz (2014) translated the work of Arnold Gehlen where he introduces the idea that "technical rationality" and its mathematical language are detached from all other languages and that its technical systems are also detached from the cultural environment (p.149). The technical rationality and modern technology can be described as the opposite of what a translation ought to be since they both neglect the cultural and linguistic differences.

Finally, Basil Hatim and Jeremy Munday (2004) state that "Bar- Hillel considered that it was impossible for a machine to replicate real-world knowledge. He felt that the goal of a fully mechanized translation to be on a par with that produced by a professional translator was unrealistic. In his opinion, it would be more realistic to attempt to produce machines that work in conjunction with humans." (p.116). It is logical for human translators to work in coordination with machines especially when they deal with languages that are complicated to the point that their network of cultural and intercultural relations need human intervention to be comprehended and translated such as English.

Yehoshua Bar-Hillel (1953) notes that, so far, a machine can never provide a satisfactory translation for idioms since a machine follows certain rules and dictionaries and the solution for this problem is to change the old rules by adding new ones. He suggests three methods. First, to enlarge the list of correlates in the target language to include more entries of the source language. Second, to add or supply the word or stem dictionary with a special phrase dictionary whose entries, if translated word for word, would produce unsatisfactory translation. The third approach is totally different from the first two. He suggests that the reader of the translation would be informed that certain target phrases should or might be "replaced by other phrases." (p.221-223)

Errors and Reasons

There are so many examples of errors committed by machine translation and in this case by Google Translate. Here are some sample examples and their analyses to support and give evidence for this research. The researchers used http://www.urbandictionary.com/ and Cambridge dictionary online to double check the meaning in English of some of the expressions to verify what these expressions meant in the source language and culture.

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1- Capturing the Different Senses

English (source text)	Machine translation
"Oh, knock it off Alex, I am really not in the mood for your jokes." Source1:http://dictionary.cambridge.org/dictionary/english/knock-it-off	أوه، طرق تشغيله أليكس، أنا حقا لست في مزاج للنكات الخاصة بك.
She got knocked up	طرقت حتى
Knockoff/ knock-off goods	البضائع تدق قبال/ البضائع knockoff
Knock your socks off	ضرب الجوارب شخص قبالة
Knock them/'em dead	ضرب عليهم الرصاص\ تدق م ميتة

These examples show that machine translation does not provide the correct translation of the different senses of "knock" which is used in different contexts. The first expression "knock it off" is translated as (تدق تشغيله) which literally means "knocking and operating". "Knock it off" means "stop doing something that is annoying to other people".

The second expression "knocked up" is translated as (طرقت حتى) which literally means "knocking until". "Knocked up" means "made pregnant" but in slang. Here, the passive voice is overlooked.

The third expression "knockoff/knock-off" is translated as (تدق) which literally means "knocking" or kept as it is in English (knockoff). "Knockoff/knock-off" means "a cheap and low quality copy of original items or goods".

The fourth expression "knock your socks off" is translated as (تدق قبالة الجوارب الخاصة بك) which literally means "hitting socks across somebody". "Knock your socks off" means "something amazing and surprising will happen".

The fifth expression "knock them/'em dead" is translated as (ضرب عليهم الرصاص/ تدق م ميتة) which literally means "hitting them with bullets or knock them dead". "Knock them/'em dead" means "do the best you can and succeed".

The reason for these mistakes is that machine translation is not linked to dictionaries which are especially made to give the meanings for such expressions. One way to feed machine translation with such expressions and their translations is perhaps to add an icon that can be

called "idioms" and feed it with translated idioms. When one faces an idiom in his/her translation, s/he can resort to that sort of dictionary of idioms. The dictionary of idioms would give a meaning but still the translator would have to choose from among different options or to match the idiom with the context. It would even be a better idea to include more than one dictionary to cover all the expressions, the basic expressions and the complicated ones. For example, http://www.almaany.com/ and http://www.wordreference.com/ are two online dictionary websites which can offer an acceptable translation for idiomatic expressions.

2- Everyday Language and Culture

English (source)	Machine translation
"4 Super Bowl ads that nailed it! From talking babies to working chimps, what draws viewers to America's biggest game of the year is often unexpected." Source2:http://fortune.com/2015/01/30/4-super-bowl-ads-that-nailed-it/	4 إعلانـات سـوبر السـلطانية أن مسـمر! مـن التحـدث إلـى الأطفال الشمبانزي العمل، مـا يلفت للمشـاهدين أكبـر لعبة أميركا من السنة غالبا ما يكون غير متوقع.
"Jon Stewart Drags FOX News for Ferguson Coverage & He Nails It" Source3:http://blackamericaweb.com/2014/12/03/jon-stewart-drags-fox-news-for-ferguson-coverage-he-nails-it-video/	جـون سـتيوارت تسـتمر FOX أخبـار لفيرغسـون التغطيـة وانه الأظافر.

"Nailed it" is another famous colloquial idiomatic expression which means that one succeeded in doing something. As one can notice, the machine translation also translates it literally as (مسمر) which means "hammering a nail in it" and as (وانه الأظافر) which means "nails of the fingers". This translation does not express or produce the effect desired from the idiomatic expression. This expression is difficult for a machine to relay it since it is used in everyday language and it is not used in the technical texts where terms and expressions are always as they seem and there is nothing underneath their surface meaning. That is why the system needs to be fed not only with

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technical knowledge but also with everyday knowledge necessary to translate and handle such language. Besides, it does not fit the context in both examples. The first one talks about succeeding in advertising the Super Bowl and the second one discusses how John Stewart succeeded in humiliating Fox News who only showed one side of the story during the coverage of the Ferguson shooting incident of 2014.

English (source text)	Machine translation
"She'll never buy that story about you getting lost!" Source4:http://dictionary.cambridge.org/dictionary/british/buy	وقالت انها سوف أبدا شراء تلك القصة عنك التخبط!

In the above example, one can notice that other than the ambiguous and meaningless translation of the whole sentence, users cannot even comprehend anything from it; machine translation also translates the expression "buy that" literally into (تلك شراء) which means "purchasing something". "Buy" has so many meanings and one of those meanings is a special meaning used in certain cases to mean "believe what someone has said or done easily without any doubts". It is definitely noticeable that it is used to give that special meaning. It verifies the horrible misunderstanding that machine translation creates when it translates literally and in return it could mislead and confuse the user into thinking that the literal meaning is the correct one. It also confirms the idea that Google Translate was not sufficiently fed with even the basic concepts or expressions which are used more often in everyday language.

Google Translate is based on the accumulative memory deposited and stored by users. Therefore, Google Translate needs to be enhanced more by including or adding more information that is connected with idiomatic expressions especially everyday knowledge and contextual and cultural information to the data base.

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3- The Implied Meaning vs. Literal Meaning

English (source text)	Machine translation
Keep somebody company	الحفاظ شركة شخص
"I'll keep you company while you're waiting." Source5:http://www.oxfordlearnersdictionaries.com/definition/english/company#company__440	سـوف تبقـي لكـم شـركة بينمـا كنـت فـي انتظار.

In the above example, machine translation does not just translate the expression literally as (الحفاظ شركة شخص) which means "preserving somebody's firm" but also gives a different meaning to the expression which may create confusion or misunderstanding for the user especially if that user has no clue what the implied meaning is or in which situation it is used in the source culture. "Keep somebody company" means that "you spend some time with someone so that that person will not feel lonely". Even in the second example where the expression is put in context, machine translation cannot translate it properly even though the example shows the exact situation where it is usually used to give that implied meaning. The machine fails to reflect the beauty of the source language and culture and does not provide an impact or effect that is similar to that of the source expression.

One of the things that incite the users to interpret the meaning of a set of words individually is that they rely on machine translation which unfortunately has the same problem of focusing on and analyzing the individual meaning of words in an expression instead of analyzing the whole expression as one unit. So the above example shows one of the important weaknesses of machine translation which can be solved easily by providing the system with expressions that have certain meanings if their individual words come together in certain situations. It is strange that such expressions were not translated properly by machine translation since the internet is full of online dictionaries that take care of such expressions; all what the machine translation has to do is to analyze the meanings provided for the expressions by these dictionaries and translate them.

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4- Context-Bound and Context-Free Expressions

English (source text)	Machine translation
I call shotgun	أدعو بندقية

In the above example, machine translation translates "I call shotgun" literally into (أدعو بندقية) which means "I invite a gun". Call shotgun is one of those expressions that do not particularly rely on the context to find their meanings since they have fixed and known meanings in the source culture. In other words, it does not have multiple meanings so there is a little chance for ambiguity. This expression means that since one first said the expression "I call shotgun", s/he means that s/he is the one who has the right to sit in the passenger's seat next to the driver. So whoever says it first, that person gets to sit next to the driver. It is not a rule or a law, it is one of those expressions that are socially understood and used more often than other expressions in everyday life. It is also very similar to the expression "call dibs" except that "call dibs" is used not with the passenger's seat next to the driver but with reserving objects and even with choosing people. As it can be seen in this example, machine translation completely missed the target; it does not even get close to the real meaning but instead it translates the expression literally into a completely new and irrelevant meaning which does not even fit the situation where it is used in. It is strange that such expressions which have only one meaning are not covered by the gigantic storage of machine translation. These expressions do not have ambiguous multiple meanings to begin with, that is why not covering or including text-bound expressions is considered another shortcoming of machine translation. This kind of problem can be easily solved by feeding these kinds of fixed expressions along with their meanings and translations to the machine translation system.

English (source text)	Machine translation
"My sister had to pull a few strings to get me this job." Source 6: http://dictionary.cambridge.org/dictionary/english/pull-strings.	أختي لسحب عدد قليل من سلاسل للحصول على لي هذه المهمة.

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In this example, the English expression "pull a few strings" is translated literally into (سحب عدد قليل من سلاسل) which means "pulling chains". Pull a few strings or some strings is used in situations where one person promises to use his/her influence or connections to certain influential people to get what s/he wants or what other people want whether it is legal or illegal. Machine translation does not provide the effect intended by the expression and instead it offers a literal translation that sabotages the strong effect of the whole text. Another reason is that the context or the situation is a clear indication that the expression is not understood to give the literal meaning since this expression has only one context-bound meaning that cannot be changed in certain situations. The strange thing about the way that Google Translate translates the expression is that it does not include this expression in its list even though this expression is very basic or known and used quite often. The expression can be only described as overused in everyday conversation and even in novels and movies.

5- Unit of Translation

English (source text)	Machine translation
Pitbull – Pit bull	بينات الاتصال، حفرة الثور

In this example, the English name "Pitbull or Pit bull" is translated literally into (بينـات الاتصـال ، حفرة الثـور) which means "a bull's pit or hole" and "data calls"; those meanings are not even close to the actual meaning. Pitbull or Pit bull is a type of dogs which is really famous for having a wrinkly face with dangling cheeks and great physical strength. As it can be noticed, both translations are far from being close to the actual meaning of the term. This also shows one of the weaknesses of machine translation; not all basic and key expressions that are frequently used and contain no more than two words are covered by machine translation. Reducing the unit of translation, therefore, does not help in some cases as this one.

English (source text)	Machine translation
"doughnut hole\ donut hole" Source 7: http://www.investopedia.com/terms/d/doughnut-hole.asp.	دونات حفرة

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In this example, the English economic expression "doughnut hole/donut hole" is translated literally by machine translation into (دونـات حفرة) which means "doughnuts' pit". Donut hole is an economic expression which means "total prescription drug spending". As it can be noticed, the translation suggested by machine translation (حفرة دونـات) does not reflect the intended meaning expressed by the economic expression which could lead to misinterpretation of this economic expression and misleading the user into thinking in something unrelated such as food, and in this case doughnuts which have nothing to do with the economic expression. The odd thing about this example is that machine translation does not cover this expression in its storage even though it is considered part of the technical translation since it is used in economic texts. The reason is probably because it is a new economic expression that can be found more often in texts that talk about Obamacare (the USA health care plan known as Affordable Care Act (ACA)); in addition, its meaning does not rely on its surface or literal meaning but it relies on the hidden intended meaning unlike other technical expressions. This technical expression is also a short one which further solidifies the idea that sometimes machine translation does not translate them correctly.

6- Grammatical Structure

English (source text)	Machine translation
"It was suspected that his father, Bobby Hernandez, took him as part of a noncustodial parental abduction, according to the Vestavia Hills Police Department, just south of Birmingham." Source8:http://edition.cnn.com/2015/11/04/us/missing-boy-found-alabama-ohio/index.html	ويشتبه في أن والده، بوبي هرنانديز، اقتادوه كجزء من اختطاف الوالدين غير الوصي، وفقا لوزارة هيلز الشرطة Vestavia، الى الجنوب مباشرة من برمنغهام.

This example shows that machine translation and in this case Google Translate has some serious problems concerning the grammatical structure or the word order of both the source and the target language. Machine translation does not consider the differences between two structurally different languages like Arabic and English and it could be for so many factors. First, the fact that it does not have the capabilities to distinguish the different structures between languages; this is why machine translation needs human intervention

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to fix the ungrammatical structures that Google Translate produces. Second, machine translation is not provided with enough information about the different structures between two completely different languages like Arabic and English.

The reason for emphasizing this matter is that machine translation does not only produce unstructured texts but also it could divert the meaning of the texts and give a completely different meaning.

Arabic (source text)	Machine translation
"أكدت وزارة التربية والتعليم العالي على أنها لن تتهاون في اتخاذ الإجراءات القانونية والعقابية اللازمة تجاه رياض الأطفال غير الحاصلة على التراخيص المطلوبة أو أذونات الرحلات العلمية والترفيهية من جهات الاختصاص بالوزارة" Source 9: https://www.maannews.net/Content.aspx?id=807134	The Ministry of Education and Higher Education confirmed that it will not tolerate to take legal and punitive measures necessary to kindergartens is taking place at the required licenses or scientific and recreational trips of the competent authorities of the ministry permissions

This example shows that even if Google translates from Arabic into English, the problem of word order still occurs. In this example, there are two tenses "it will not" and "is taking" following each other in the translated text by machine translation; in English, it is not grammatical or meaningful to use two verbs in the same sentence. There is also the problem of ordering or the positions of the adjectives and the nouns being described.

Suggested Translations and Strategies

The suggested translations mentioned in this section by the researchers are possible solutions to the expressions which were mistranslated by machine translation with the hope that future designers can improve or enhance and add to the machine translation storage or lists. The following suggested translations are manifestations of sense of judgment and are based also on the contexts of these expressions.

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1- Capturing the Different Senses

English (source text)	Suggested translation
Oh, knock it off Alex, I am really not in the mood for your jokes.	أوه، توقف عن هذا يا أليكس، أنا حقا لست في مزاج للنكات الخاصة بك.
She got knocked up	حبلت
Knockoff/ knock-off goods	البضائع المزيفة او المقلدة
Knock your socks off	سيدهشك
Knock them/'em dead	قم بأفضل ما لديك و ستنجح

These suggestions capture the different senses of "knock" which are used in different contexts. The first expression " knock it off " can be translated as (توقف عن هذا) which means "stop doing something that is really annoying".

The second expression " knocked up" can be translated as (حبلت) which means "getting pregnant".

The third expression "knockoff/ knock-off" can be translated as (البضائع المزيفة او المقلدة) which means "a cheap copy of original items".

The fourth expression "knock your socks off" can be translated as (سيدهشك) which means "something amazing and surprising will happen".

The fifth expression "knock them/'em dead" can be translated as (قم بأفضل ما لديك و ستنجح) which means "do the best you can and you will succeed".

2- Everyday Language and Culture

English (source text)	Suggested translation
"4 Super Bowl ads that nailed it! From talking babies to working chimps, what draws viewers to America's biggest game of the year is often unexpected."	اعلان (السوبر بول) نجح بقوة. من اعلان طفل متكلم الى قردة عاملة ، ما يجذب انتباه المشاهدين لحضور اضخم الالعاب الامريكية في السنة هو احيانا غير متوقع.
"Jon Stewart Drags FOX News For Ferguson Coverage & He Nails It."	جون ستيورت اهان فوكس نيوز لطريقة تغطيتها لقضية فيرغسون و قد نجح بذلك

The suggested translation is (قد نجح بذلك) or (نجح بقوة) which means "succeeded in doing something". This example is very similar to many expressions such as "made it". This example proves that one

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of the important factors in giving a good translation is to live and experience the daily life conversations in order to give them logical meaning. In this case the human translator would use his/her logic and sense of judgment in order to understand that in this context it is used to mean something in that culture and it does not have anything to do with the literal meaning of nails.

When one translates a certain cultural expression, one does not just understand but also tries to produce the same effect or at least a similar effect. So a translator should not take what the machine translation tells him/her for granted since it still has many flaws that need to be fixed; s/he should already be familiar with that culture or at least search through the internet for the contexts of the idiomatic expression when s/he deals with idiomatic expressions. So one should be familiar or understand what that expression means in that culture and try to relay it because after all what a translator does is that s/he tries to give the reader a closer look at the expression used in certain contexts in that culture.

English (source text)	Suggested translation
She'll never buy that story about you getting lost!	انها لن تصدق ابدا قصتك بأنك ضللت الطريق

The suggested translation for "buy" is (تصدق) since it fits the context. The context in this case is that the first person is not going to believe the other person's story easily without any doubts. The researchers used their sense of judgment which is based on context and knowledge of the source culture to conclude that "buy" in this case is used to mean "believe" since this meaning is used in everyday language and can be distinguished from the other meanings easily if the person knows about their uses and contexts in that culture. In other words, one has to be familiar with the meanings and the uses of certain expressions in order for him/her to get the right sense or else one would get the meaning wrong and end up with a nonsensical translation.

3- The Implied Meaning vs. Literal Meaning

English (source text)	Suggested translation
Keep somebody company	يؤنس
I'll keep you company while you're waiting.	سابقى معك لأوانسك بينما تنتظر

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In this example, the suggested translation for the expression "keep somebody company" is (يؤنس). This expression shows that one does not need only to know the context or the situations in which the expression is used and in this case it is used in cases where the other person might feel lonely if s/he stayed alone whether s/he is going somewhere or waiting but also to understand that when certain words are used together, one should not only look at the meanings of the words individually.

4- Context-Bound and Context-Free Expressions

English (source text)	Suggested translation
I call shotgun	انا اريد الجلوس بجانب السائق و لقد سبقتكم في قول ذلك

This example shows that unfamiliarity with the source culture could create problems and huge misunderstanding; it is difficult to even guess the meaning. So the suggested translation for "I call shotgun" is more detailed than the original expression since unlike English, expressions that cover a lot of social meanings are pretty rare in Arabic. The suggested translation is (انا اريد الجلوس بجانب السائق و لقد سبقتكم في قول ذلك) which literally means "I want to sit next to the driver and I said that first" to show that since I said that I want to set next to the driver first, I should be allowed to do so. This kind of Arabic expression is actually used even between kids as a type of competition; if one says something first then s/he is allowed to do the thing s/he said or wanted to do first. The English expression and its suggested translation are pretty similar in terms of effect and meaning except in Arabic there is no idiomatic equivalent for the English idiom.

English (source text)	Suggested translation
My sister had to pull a few strings to get me this job.	لقد استخدمت اختي الواسطة التي ساعدتني للحصول على الوظيفة

The suggested translation for "pull a few strings" is (استخدام الواسطة) which means "using your influence or contacting certain acquaintances or connections with influence to get something done whether it is legal or illegal". This kind of expression needs to be explained when translated to Arabic to get the full sense of the

expression and to relay what it actually tries to say. Clarifying the meaning can be really helpful since the literal meaning of the expression will not give any kind of indications or hints to its actual intended meaning and it will result into ambiguous nonsensical Arabic translation. The reason why it is suitable to use the word (الواسطة) is because it includes both the meaning of using one's influence or contacting influential people who could help him/her to get what s/he wants.

5- Unit of Translation

English (source text)	Suggested translation
Pitbull – Pit bull	نوع من الكلاب الشرسة

The suggested translation for "Pitbull – Pit bull" is (نوع من الكلاب الشرسة) which means "a kind of ferocious dogs'. For this noun, it is better to explain that it is a type of dogs and not just any dog but a dog that is known for its ferocity and is considered a very dangerous dog, that is why adding the word (الشرسة) which means ferocious is an important component in describing such dogs. It is not recommended to use transliteration as (بيتبول) since not all Arab people know that (بيتبول) is a type of dogs which can be dangerous to approach; they might mistake it for a name of a person. So the solution suggested to give more details in this case seems more reasonable and also it helps to avoid ambiguity as well.

English (source text)	Suggested translation
Doughnut/donut hole	نفقات الأدوية الموصوفة

The suggested translation for "doughnut hole" is (نفقات الأدوية الموصوفة) which means "prescription drugs spending". In this case, it is crucial to explain this expression and make it clearer so that both economic experts and non experts can fully comprehend what the term expresses. The literal translation is farfetched in this situation since it will only make things incomprehensible and will not fit in the economic context where it originated. Another reason why the literal translation won't work is that it will not indicate anything in the Arabic language and culture even in the metaphorical and symbolic level. So the best solution is to relay what the expression is trying to convey.

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6- Grammatical Structure

English (source text)	Suggested translation
"It was suspected that his father, Bobby Hernandez, took him as part of a noncustodial parental abduction, according to the Vestavia Hills Police Department, just south of Birmingham."	يشــتبه أن والـده، بــوبي هرنانـديز، قـد اخـذه معـه و هـذا يعتبـر اختطـاف لأنـه بصفته احد الوالدين الـذي لـيس لـه حـق الوصــاية علــى الابــن ، وفقــا لمركـز شــرطة فســتيفيا هيلـز، الواقعـة جنـوب برمنغهام.
Arabic (source text)	Suggested translation
"أكدت وزارة التربية والتعليم العالي علـى أنهـا لـن تتهـاون فـي اتخــاذ الإجـراءات القانونيـة والعقابيـة اللازمة تجـاه ريـاض الأطفـال غيـر الحاصلـة علـى التـراخيص المطلوبـة أو أذونـات الرحلات العلميـة والترفيهية من جهات الاختصاص بالوزارة"	The Ministry of Education and Higher Education confirmed that it will not tolerate to take legal and punitive measures necessary towards kindergartens which does not get the required licenses or permissions for scientific and recreational trips from the concerned authorities of the Ministry.

The suggested translations for these sentences or texts were carefully structured to make their structures sound natural and grammatical by considering the different word order of each target language whether it is English or Arabic.

Best Uses of Machine Translation

Machine translation is a reminder to us; it helps us open our eyes and minds to the basic part of our jobs as translators that we have forgotten to do for so long which is to relay what the message conveys and nothing more. No motives or opinions behind our translation. Even though machine translation gives literal meanings to certain idiomatic expressions, it does not mean that they are all wrong since a reader and a translator can tell that the literal translation actually hints at something beyond the literal meaning.

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1- Hints to the Implied Meaning

English (source text)	Machine translation
"Strategic Communications Workshop: Hooked: How to Keep Your Audience on the Edge of Their Seats" Source10: http://ce.columbia.edu/strategic-communications/events/how-to-keep-your-audience-on-the-edge-of-their-seats	ورشة عمل الاتصالات الاستراتيجية: معلق: كيفية الحفاظ على جمهورك على حافة مقاعدهم
"Fearing bus ban, Arabs are on the edge of their seats. We work for Jews so why are they scared of us riding with them, ask Palestinian laborers on a West Bank-bound line, returning from jobs in Israel." Source11:http://www.haaretz.com/news/features/.premium-1.622971	خوفا من حظر الحافلة، العرب هم على حافة مقاعدهم نحن نعمل من أجل اليهود فلماذا هم خائفون منا ركوب معهم، ونطلب من العمال الفلسطينيين على خط متجهة إلى الضفة الغربية، والعودة من العمل في إسرائيل.

Some idiomatic expressions are translated by Google Translate literally; a reality which does not express the intended meanings; however, it does hint to their implied meanings. In this example, the expression "on the edge of their seats" is translated literally as (على حافة مقاعدهم). In Arabic, one can still understand the implied meaning as either being enthusiastic or afraid. In this case, the deciding factor for the implied meaning depends on the context itself. The first one implies enthusiasm while the second one implies fear or insecurity.

English (source text)	Machine translation
Christmas is just around the corner	عيد الميلاد هو قاب قوسين أو أدنى

In this example, the English expression "just around the corner" is translated metaphorically into (قاب قوسين أو أدنى) which means "very imminent to happen". "Just around the corner" means 'something or an event is about to happen pretty soon". The metaphorical translation made by machine translation gives the intended meaning but that does not mean that machine translation

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covers all the necessary idiomatic expressions like the ones previously discussed. This idiomatic equivalent is added to the memory of Google Translate.

2- Conveying the Message as It Is

English (source text)	Machine translation
"Palestinian terrorists have gone online. With little oversight, Palestinian extremists are recruiting online and publishing unfettered propaganda; the effects are already being felt on the ground in the form of a spate of recent 'lone wolf' terror attacks." Source12: http://www.ynetnews.com/articles/0,7340,L-4598648,00.html	وقـــد ذهـــب الإرهـــابيين الفلســـطينيين علــــى الانترنـت مـع الرقابـة قلـــيلا، المتطـــرفين الفلســـطينيين تقـــوم بتجنيد علـى الانترنـت وتنشـر الدعايـة غيـر المقيدة. وسبق أن رأى آثـار علـى الأرض في شكل سلسلة من "ذئب وحيـــد" الهجمـــات الأخيرة الإرهاب.

"Palestinian terrorists" was translated literally without any changes to (الإرهـابيين الفلسطينيين) and "Palestinian extremists" was translated literally as (المتطرفين الفلسطينيين). The example contains grammatical errors since the expressions should be translated as (المتطرفون الفلسطينيون) and (الارهابيون الفلسطينيون) but regardless of these Arabic grammatical errors, one as a translator or user can still understand the jest of the message. This example does not contain an idiomatic expression but it highlights something that we should give machine translation credit for. Unlike human translators, machines do not have the privilege of having opinions and motives. This may be considered as a weak point but it proves the fact that machines convey a certain message from one language into another as it is without prior motives even if it led to stereotyping or deforming the image of certain ideas or people. That is what translation is supposed to do after all; to be faithful to the text and to convey something even when it does not agree with our opinions.

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3- Scientific Expressions

English (source text)	Machine translation
Cerebral hemorrhage	نزيف فى المخ

In this example, machine translation translates the medical term or expression "cerebral hemorrhage" into (نزيف فى المخ) which means "bleeding of the brain". This shows how reliable and useful machine translation is when it comes to these scientific expressions that can be hard to find in dictionaries.

Arabic (source text)	Machine translation
نزيف فى المخ	Cerebral hemorrhage

Machine translation can also be useful in back translation especially when users want to know the source text for the sake of enriching their knowledge about some expressions. In this case the translated expression (نزيف فى المخ) is translated back to English into "cerebral hemorrhage". That is why Google Translate is considered useful in learning other languages and a great assistant on certain fields to the translator.

4- Unit of Translation

English (source text)	Machine translation
Veteran	محارب قديم

In this example, the machine translates the term "Veteran" into an acceptable translation as (محارب قديم) which means "an old warrior or soldier". This expression means that a certain person fought in previous wars; Americans use this expression when they talk about soldiers who fought in Vietnam or Afghanistan or even in Iraq. It can also be used symbolically if the Americans talk about a veteran fire fighter or doctor or anyone who did his job for many years and suffered hardships along the way. (محارب قديم) can give both the symbolic meaning and the actual meaning of the expression "Veteran."

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English (source text)	Machine translation
binge-watch	الإفراط في المشاهدة

This example shows that machine translation sometimes translates the idiomatic expressions which contain two words or more correctly without any mistakes or errors. This case: "binge-watch", for example is translated successfully to (الإفراط في المشاهدة) which means "excessive watching". The translation made by machine translation is very close to the expression's meaning since "binge-watch" means watching continuously episodes of TV shows or series or even movies without stopping; it could take hours or days. One of the reasons for the successful translation by machine translation is that some of these small sized expressions were already listed in the gigantic storage of machine translation.

Conclusion and Recommendations

The previous examples in this research give the following results. First, there are main errors that occur while using machine translation to translate cultural expressions from English to Arabic. Machine translation makes no sense and does not add any meaning to the text; it gives literal translation to complicated idiomatic expressions in some cases. In addition, it does not produce the same effect of the idiomatic expression but that does not mean that machine translation does not work with simple idiomatic expressions. There is also the problem of word order and word structure and getting the different senses or meanings of an expression.

Second, there are many reasons or factors that lead to these errors. Machine translation does not have the basic contextual and cultural knowledge about certain idiomatic expressions. Machine translation cannot express the everyday language that does not require bookish knowledge since it is designed to deal with technical texts. In short, machine translation needs to be fed with more information which includes everyday language and metaphorical language by the designers in order to fulfill its purpose as an assistant to the translator. Therefore, the errors and their reasons show that there are so many flaws that need to be mended in order for machine translation to be truly a competent assistant to the human translator.

Third, there are solutions or strategies that can help solve these problems. For example, familiarity with the American culture,

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knowing the context, basing your translation decisions on a logical and sensible judgment and not taking everything that the machine translation produces for granted. These solutions are considered as temporary solutions while the translator's assistant, machine translation, is still in the process of development to fix the serious flaws.

Today there are more specialized computer programs for translation such as Déjà Vu, Wordfast and Trados that users find very helpful. These computer softwares allow users to create their own memory profiles that are related to their area of translation. Legal translators, for examples, feed their system with idioms, vocabulary, and even stretches of texts that they have previously translated. When they apply new texts, the system pairs the new text with what is stored and gives the translator a great help. Google Translate is accessible to all translators, the world over. Its memory is gigantic, yet too diversified. The examples of Déjà Vu, Wordfast and Trados show that the use of machines in translation can be optimized on the side of the translator or it can be helpful for him/her.

The literal translation of the machine in some cases can be useful since it hints at something beyond that which is in the implied meaning that can be figured out through the context of the text. This step relies on the translator who uses machine translation. Machine translation conveys a certain message from one language into another as it is without prior motives and that is the true meaning of translation. Machine translation can be useful for translating scientific expressions and back translation exercises. It can be used for translating some idiomatic expressions that do not exceed a simple phrase. Reducing the unit of translation can, in some cases, be a helpful strategy.

The researchers would like to give the following recommendations. First, the designers need to feed machine translation with enough data about not only basic and fundamental expressions but also complicated expressions which are used very often such as everyday language and metaphorical language with their meanings or translations. Second, one way of doing that is to provide the system with more translation options for such expressions to cover the different contexts that these expression could be used in; that way the user will be comfortable enough and at ease when s/he chooses the suitable translation that fits the context. Third, linking Google

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Translate to more than one dictionary of idioms from English to Arabic could provide the user with more options; it will cover the idiomatic expressions that need to be covered; online dictionaries such as, http://www.almaany.com/ and http://www.wordreference.com/.

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