# The Linguistic Problem-based Effect of Using Machine Translation in Mobile & Computer Apps : English and Arabic as a case study

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## 1.0 Introduction

Machine translation for smartphones, mobile and computer devices featuring translation capacities for input texts, messages, emails and so on includes many useful features where the user can use mobile apps of translation whenever and wherever and conducting discussions. Some mobile apps of translation provide additional services for the user such as speech recognition, image translation and voice interpreting.

### 1.1 The concept of Machine Translation

House (2018:18) states "Machine translation is a term which refers to the fact that computers take on the task of translation either partially or entirely". It was first used in the 1950s referring to the linguistic output that computer apps take on when the task of translation either partially or entirely achieved. Fromkin and et al.(2012:516) point out that machine translation process aims at inputting a spoken or a written utterance of a particular source language and outputting this utterance into an equivalent meaning in the target language. This process is carried out by inserting in a dictionary of a source language and a dictionary of a target

language in the electronic application memory through matching up the morphemes of the two languages.

Bendana and Melby (1997:45) confirm that the use of the electronics in translating natural languages differs from that of a translator's processing of words and dictionary check-up to that of a professional translator. However, the obstacles of translating by using mobile apps and computer are primarily linguistic in general. Lehenberger and Bourbeuea (1988: 93) suggest that there are certain ways to get rid of these obstacles, it is necessary preferred to decode the ambiguities that fly over a natural language when words and sentences are treated in isolation electronically before handling the whole sentence. The problem then in practicing machine learning is establishing, in the mobile apps and computer, these aspects of language understanding. Doorslaer and Gambier (2010:136) show that the vast growing attempts of technology-based learning nowadays especially in the field of translation could assist and provide an automatic translation of input texts by Google Translate, computer-based technique which led human to enormously use technology for its speed and availability. Regarding the translator's ability in translating spoken texts, the web-based machine translation would enable language users to translate invisible translation. Lehenberger and Bourbeuea (1988:21) indicate that machine translation attempts to translate the text with analyzing it syntactically and semantically, and without doing so, the text is invaluable. It also attempts to produce a TL texts of features similar to some extent to the source language text features. Machine translation depends fully on transference and matching rather than on wording or contextual content. Machine translation adopts certain strategies of transfers in translation are:

Direct transfer: In the direct transfer, the system attempts to shorten the SL text and take the short TL text. In this transfer, the bilingual dictionary supports replacements for each word taking into consideration the correct replacement and adjustment. When using the transfer in MT many problems occur, especially the verb particle translation where the problem cannot be solved through entering the verb and the particle to give its meaning sometimes the verb and its particle result different meanings other than those found in the dictionary. This case is dependent on the fronting the particle. Zaki (2010:425) mentions that direct transfer strategy attempts to relate each word in the source text to its equivalent in the target text. The transfer strategy is frequently and widely used method in MT. The source and target texts are analyzed by the help of a dictionary of the source and target languages. Additionally, the bi-transfer stage attempts to result the analysis stage and produces the linguistic and structural equivalents between the two languages.

Nirenberg and et al.(2003:23) show that sentences of multiple non-grammatical meanings included in the translation mechanism will take into account the intended meaning by using the non-grammatical meaning of two or more syntactically interrelated SL forms which whereby they coincide. Machine linguistic Learning must follow up certain approaches to be taken into rules of dependence in analysis.

1. Segmenting the fields of discourse into shorter texts.
2. Recognition of coherent groups of word, such as idioms and compound nouns, but the problem lies in translating equivalent proverb in TL ones.

3.The syntactic function of each word.

4.Synthesizing the relationships between words in open classes, including, nouns, verbs, adjectives, and adverbs.

5. Determining antecedents will help in translation of nouns and pronouns not only make the correct translation of pronouns. Finding out the intended meaning is taken into consideration not only on the semantic peculiarities of the source language, but on the semantic peculiarities of the target language as well!. The problem there in machine learning is multiple meanings in the source-target texts. As a matter of fact, the machine learning strategy cannot be so beneficially used as a real core learning, in this context a literal translation would be completely unintelligible.

Mantaras and Saitte (2004: 571) believe that the problem of mechanical translation is the connotations of words in different languages which are considered too vague and too extensive to make translation acceptable. It is thought that the problem of multiple meanings is solvable if one checks the words in a book or a dictionary, then electronically, it is obviously impossible to determine the word meanings such as the word "Fast" may mean "rapid" or it may mean "does not eat or drink" and there is no way of telling which in the process of machine learning. Shuttleworth and Cowie (1997:45-51) say that employing Machine translation in between two languages especially those which have complex structures is a very challenging aspect. Certain aspects of the translation problem become more relevant to the field of study depending on the linguistic properties of the languages involved in comparison to the field of study of the language studied.

Mazroui and et al. (2017:101) state that Arabic has a complex morphology and complex structure where it is characterized by a rich system of morphological inflections and structures. It

includes affixes of certain morphemes constructing a very complex structure, such as prepositions and personal object and possessive pronouns to the word stems. This indicates that the equivalent of a whole English sentence can be shown in a single Arabic word. The morphological complexity presents a challenge to machine translation from Arabic to English or similar languages, which is manifested differently.

Soudi and et al. (2012:4) state that the knowledge-based machine translation represents the key challenge lying in the morphological complexity of Arabic. Arabic long vowels are written as regular characters, whereas short vowels /a, u, i/ are written as small marks known as *diacritics,* placed above or below the preceding consonant. Arabic text is sometimes known without diacritics, except in certain cases, such as religious text, and language learning material. The absence of using diacritics in Arabic text would create an ambiguity in the pronunciation, and lexical ambiguity as well, because there may be two words differ in meaning and unrelated share the same undiacritized spellings.

### 1.2 Linguistic-based problems of MT.

#### 1.2.1 Orthographic ambiguity

Shalaan and et al. (2018:103) confirm that Arabic letters are characterized by being multiple and of variant forms of the same form due to the Arabic script requirements. For example, variants of Hamza of A (همزة الالف), أ *A* or إ *Ǎ*, are almost often written without their Hamza ( ء *ʾ*) so that it appears like an Alif ا *A*. As for the linked –T (التاء المربوطة) ( ة *ħ*), which is often used as a feminine ending letter considered as a morpheme. The linked-T is sometimes written without its dots; appearing as a letter Ha ( ه *h*). These variant forms increase the ambiguity of words in machine

translation. The Arabic script is characterized by the use of diacritics for representing short vowels and doubled consonants. Diacritics are more often absent in running text electronically which is absolutely confusing.

### 1.2.2 Syntactic difficulties in MT.

Zaki (2010:418) states that Arabic is characterized by the complexity of sentences, morphological affixes and the lexical abundance. Arabic sentence, sometimes, may be more than 35 words and this could make the application or software used for translating much more slow in processing such sentences resulting in misinterpretation. This difficulty can be overcome by segmenting long sentences into shorter ones. The problem of machine translation for Arabic is plenty and cannot be equal to the Arabic, because it is absolutely impossible to translate the literary poems, proses, literary essays or etc., or to convey the sense of the poetic saying or the pragmatic content.

Concerning syntactic difficulties in machine translation, Cairns ( 1988:52) states that when translating discourses, the discourse is translated as word by word or sentence by sentence in the machine learning neglecting the role of the context which is certainly fallible. The linguistic constituency is essential in determining the correctness of machine output, so that most of the translated discourses in machine is characterized by ill-outputs. It is absolutely difficult to make a hole between syntax and semantics in language. There are some general points which can be made. Some translators including machine, systematically, translate word order differences into literal rendering in case of sentence complexity. In particular two languages such as English and Arabic have an entirely different word order and as a result of

that the machine sometimes gives weak interpretations and the weak point is attributed to the length of the sentence.

Lehenberger and Bourbeuea (1988:67) mention that the syntactic difficulties between texts may be presented by the difference in the function and purpose rather than in the subject. The function of the syntactic component is analyzing the SL sentences into their constituents and generating them correctly into the TL syntactic components. The main potent problem in the syntactic point in machine translation is the complex structure and complex constituency. Complex structure involves a very sophisticated operation in analyzing the SL text into TL text. If the sentence has more than one verb, the argument of each verb must be identical and the relations between clauses as well. Relations of modification have to be shown by determining the modifiers and modified elements by words or phrases. e.g.

| SL TEXT | |
|---|---|
| ان السيارة التي اشتريتها العام الماضي ولم تكن مسجلة هي سيارة السيد جون | |
| TL Professional Translation | TL Google Translate |
| The car I bought last year which was not registered was Mr. John's. | The car I bought last year was not registered is a car of Mr.John. |

The machine translation by Google Translate is not correct and so many mistakes in the translation due to the complexity of the Arabic sentence and the length of the predicate. Google translated the sentence above into two predicates while it has one.

Bassiouney and Katz ( 2012:37-41) illustrate that the Arabic script is treated as a challenge for computational linguists. Unlike other languages, diacritics representation determines Arabic words semantically and syntactically. However, some features of the

script create ambiguity in the translation, unlike English, due to the Arabic diacritics and abundance of lexemes that the machine could not recognize. It becomes difficult to distinguish between subject, object and the relationship of the pronoun to its antecedent creating multiple ambiguities when translating electronically because of the absence of case markings in most machine texts. The lack of capitalization and rules of punctuation hardens the process of extraction and retrieval. As a result, three types of information are lost due to the Arabic script:

1- Case assignment: in Arabic free word order, three cases are used to determine the grammatical function. So, it is difficult to distinguish the grammatical function of the expression when deleting case markers.

2- Homograph information*:* the homographic words may cause ambiguity in electronic linguistic learning since it is difficult to determine the grammatical category or to the word category itself, such as the word "head" which carries more than one polysemous meaning. As for the grammatical category, for example, the word " من " could be the equivalent of the preposition "from" the wh-question, "who"; or a verb meaning to "grant, bestow upon."

| SL TEXT | |
|---|---|
| من ذلك الرجل؟ | |
| TL Professional Translation | TL Google Translate |
| Who is that man? | from that man. |

The machine apps translated the word "من as "from" not as "who". This could be confusion for the user. The absence of well-used punctuations in machine translation apps poses a real problem for the Arabic - English learners altogether. The machine

could not recognize the case assignment for the phrase "من " because such cases are determined by diacritics in Arabic to figure out the word category.

3. Word sense: The meanings of the word play an instrumental role in machine translation even words that have not homographs they could raise a challenge because it is hard to distinguish between the different senses without internal lexeme. For example the word " رجل ," in the sentence below translated by Google Translate app which could mean either "leg" or "man."

| SL Text | |
|---|---|
| كُسِرَت رِجلُ الفتاة عِندَما انزَلقت | |
| TL Professional Translation | TL Google Translate Translation |
| Girls' leg was broken when she slipped. | A man broke the girl when she slipped. |

The word " رِجلُ " was translated into "a man" not as "leg" which a mistaken translated resulted by the fact that machine adopt the similar forms without paying attention to diacritics.

Or the word "عين " which may refer to "عين البئر ", "عين الانسان", "عين الشئ أي نفسه" ,or " حسد". It is unknown which "عين " is meant because its polysemous-multiple meanings should be identified and meant and this is rarely identified in machine translation.

As for syntax, Anissah (2013:152) asserts that, sometimes, sentences when dealing with machine translation are treated as individual words, resulting in almost meaningless output. Additionally, some Arabic coordinators could lead to problematic cases when they are combined with other words and this case could change the meaning of the source text. e.g. when ف is added

to قد we get the English translation 'lost'. Finally, sentences in Arabic may be combined as SVO (subject, verb, object) or VSO (verb, subject, object). The first one usually leads to correct translation as it corresponds to the English word order In comparison to the second order. However, when the source text adopts a VSO order a syntactic criterion, the machine translation system adopts the original order as a replica, translating only individual words.

4. Word Segmentation

Bassiouny and Katz (2012:38-39) denote that segmentation may raise ambiguous translation in Arabic especially Arabic words can be segmented variously, which creates difficulty to determine how a word should be exactly segmented in order to get to the correct meaning of the element. As an example, the word" وهمي " could be segmented in three ways, creating various meanings:

(a) و+هم+ي " conj + noun + possessive pronoun" *(and my worry)*

(b) وهم+ي " noun + adjectival marker" *(imaginary)*

as "wahmy" *(illusory, false)* or as "wahm+y" *(my imagination)*

(c) وهم+ي " noun + possessive pronoun" *( my illusion)*

The problem resulted in Arabic word segmentation presents one of the most outstanding challenges in Arabic when dealing with machine learning. The Arabic word might be segmented according to rule-based application in order to identify the correct part of speech of each element.

### 1.2.2.1 Clitics

Soudi and et al.(2012:77) show that clitics could be an obstacle in the road of electronic translations for it is hard to be distinguished from inflectional features such as gender, number,

person, voice, aspect, etc. These clitics are attached to the word increasing the ambiguity of readings and their translations leading to another form of the word.

The definite article (+ ال *Al*+ 'the') , +PRON, (e.g. هم + +*hm* 'their/them') + ل *l*+ 'to/for', + ب *b*+ 'by/with', + ك *k*+ 'as/such' and + س *s*+ 'will/future'. *b*+ and *k*+ are clitics attached to each compatible category while the conjunctions (CONJ+) + و *w*+ 'and' and + ف *f*+ 'so'. They can be attached to everything.

### 1.2.2.2 Prepositional Attachment

Salakoski, et al. (2006: 593 ) show that prepositions usually relate a noun or a pronoun to another word to show their relationships to other constituents in a sentence. However, prepositional attachment often pose linguistic problem. Prepositional phrase attachment is especially problematic in machine translation. Bassiouny and Katz (2012:39) illustrate that Arabic is like many other languages, which has prepositions attaching to nouns or to verbs, making syntactic ambiguity. In the following example translated electronically by Google Translate, the Arabic prepositional phrase should attach to the noun phrase and the preposition should be translated as "of" ,but as "for".

| SL Text | |
|---|---|
| العراقية للشركة إعلانا شاهدت | |
| TL Professional Translation | TL Google Translate Translation |
| "I saw an ad for the Iraqi company" | "I saw an ad of the Iraqi company" |

In contrast, in the following sentence, the prepositional phrase might be attached to the verb phrase as an instrumental and the preposition with is translated as "ب" and not as "مع".

| SL Text | |
|---|---|
| I saw the man with the telescope. | |
| TL Professional Translation | TL Google Translate Translation |
| ١- رأيت الرجل بواسطة التليسكوب<br>٢- رأيت الرجل الذي يحمل التليسكوب | رأيت الرجل مع التليسكوب |

The sentence carries more than one interpretation. It can be interpreted into either I saw the man by using the telescope or I saw the man who carries a telescope. The problem of machine translation is that it treats the preposition as an individual form rather than relating it to the verb or to the complement. There are also cases when the preposition could attach to either the verb or the noun phrase depending on the intended meaning. An example of such an ambiguous sentence is the following:

مارس في السفر قررت "I decided on traveling in March"

In the sentence above lies a prepositional ambiguity in the attachment of the preposition " في ," meaning "in." If it is related to the verb, the traveling would be in March. While if the preposition is related to the noun phrase السفر "traveling," then traveling will be in March and the decision of travelling could have been made at any time.

### 1.2.2.3 MT Passivation

Lehenberger and Bourbeuea (1988: 97 ) believe that English is abundant of the transitive verbs which are a requirement to be in a

passive voice. The position of the argument determines the passive possibility. The phenomenon of passivation presents a problem in machine translation especially in Arabic because it is characterized by abundant verbs in addition to the use of diacritics on the verb and this case is problematic in machine translation for the diacritics are not placed on the verbs computationally or electronically leading to the base form meaning. Any attempts to analyze the sentence without context analysis results in a little value overlapping.

Ali (2016:58) asserts that machine translation is full of passivation mistakes into Arabic due to the Arabic words are diactrized when changed into passive and the computational system ignores this matter. Diacritics are treated as morpheme resulting in changes in the word category and the grammatical category. Such a mistaken machine translation is shown in the example.

| SL Text | |
|---|---|
| ضُرِبَت الكُرة | |
| TL Professional Translation | TL Google Translate Translation |
| The ball was hit | hit the ball |

The correct translation would be "the ball was hit" while the machine translation denotes the sentence اضرب الكرة. As an imperative and this translation is entirely mistaken because the machine takes the verb ضرب without taking into account the diacritics over the verb.

### 1.3 The Statistical Approach to Machine Translation

Bassiouny and Katz (2012:54) point out that the statistical machine translation approach is of significance for the machine

translation which helps the application and the internal processing of the software in checking the best equivalent texts for the SL one. It looks for the most appropriate translation of a sentence by using data which are gathered from an aligned bilingual corpus. Statistical approach is based on Monolingual and bilingual data on the web, assisting the system in finding the data similar to the input texts. This means that there should be enough data for language modeling inside the machine and bilingual text alignment additionally. Alignment is frequently conducted at the word level and/or the phrase level since sentence level would be too long to be processed and the key idea would be incompatible. Most words and even some phrases will be conducted by alignment giving more than one target language equivalent. Consider the following possible translations of the Arabic word يد "hand": (a) يدي "my hand", (b) يد من حديد "iron fist", (c) يد الله "God's support", (e) اليد العليا "the upper hand, the giver", (f) اليد السفلى"the lower hand", "the taker", (g) يد مغلولة "miser, mean".

On the other hand, Munday (2012:200) points out that there are two basic approaches for Machine Translation other than statistical approach:

1- encoding approach of linguistic knowledge about the morphological, lexical, syntactic and functional structures of the source and target languages. It is rule-based.

2- Decoding approach of enough aligned data to learn the statistically mappings between strings of characters in the two languages. It is statstics-based.

## 1.4 Analysis, Results and Recommendations.

### 1.4.1 Analysis of idioms and proverbs in MT.

The study is conducted by experimenting some sentences translated by machine applications in electronic devices. Translating idiomatic expressions electronically pose problems since the expressions are sometimes transparent and opaque. Opaque idiomatic expressions are treated as an obstacle in electronic learning for Arabic and English learners because their meanings are not extracted easily from their literal meanings; they denote something different. The following examples of idioms are taken from Google translate.

| SL Text | |
|---|---|
| We saw him flying over the handle | |
| TL Professional Translation | TL Google Translate Translation |
| شاهدناه وهو يستشيط غضبا | شاهدناه يحلق فوق المقابض |
| SL Text | |
| " the man spilled the beans to his colleagues" | |
| TL Professional Translation | TL Google Translate Translation |
| افشى الرجل السر لأصحابه | الرجل سرب الفول لأصحابه |
| SL Text | |
| She would make snow on him | |
| TL Professional Translation | TL Google Translate Translation |
| كانت تريد ان تشوه سمعته | كانت تريد وضع الثلج عليه |
| SL Text | |
| Prevention is better than cure | |
| TL Professional Translation | TL Google Translate Translation |
| الوقاية خير من العلاج | العلاج من افضل الحرمان |

These translations of idioms and proverbs are entirely inacceptable because they do not accord to the context of the words or to the cultural context in another sense. Because idioms are specifically restricted, few and known almost to the translators, the solution of such expressions is kind of easy and would give unproblematic translations leading to an accurate translation. The solutions recommended for the problems of the idiomatic expressions in machine translation used in electronic devises would be represented in bringing a book of idioms and its Arabic equivalent which is available everywhere and inserting its contents into the memory of the app or software by matching the words linked together of the SL ones into the saved TL equivalent ones. Another solution recommended for translating such problematic phrases is the editing stage carried out by human-aid translation. Editing stage includes pre-editing the text before output is attained, or post-editing which is more preferable could effectively solve such a problem.

### 1.4.2 Analysis of nouns in MT.

Translating proper nouns in machine translation especially proper nouns denoting meanings is problematic in fact because machine translation translates the noun as a common noun neglecting the proper noun. Furthermore, Arabic tend to name people by names denoting meanings from common nouns, such as the noun in the example below;

| SL Text | |
|---|---|
| تقوم امل بزيارة صديقتها كل اسبوع | |
| TL Professional Translation | TL Google Translate Translation |
| Amal visits her friend every week | hope visiting her friends every week. |

Google, mobile dictionaries and ipad apps of English translated the proper noun"امل " into "hope" which gives the denotative meaning. The better recommended solution to avoid such mistaken translations is to put an option in the app or machine showing other proposed translations of the same text and selecting the appropriate one by human-aided translation through using post-editing stage.

| SL Text | |
|---|---|
| يكتب سعيد الدرس | |
| TL Professional Translation | TL Google Translate Translation |
| Saeed writes the lesson | Happy writes the lesson |

Google translated the proper noun سعيد as an adjectival phrase. Henceforth, so many proper nouns are translated like this way in the mobile and computer applications. Subsequently, Google translate needs linguistic amendments to Arabic words and sentences and their inflections.

### 1.4.3 Analysis of polysemous words in MT.

Almost more than 90% of languages have polysemous words which carry more than one meaning where Arabic and English are abundant of them. The problem of translating polysemous words into TL text is that the electronic apps and digital machines give one meaning putting the other meanings aside. The sentence below shows the electronic translation and its miscarrying of conveying the meaning to the TL addressee.

| SL Text | |
|---|---|
| She plays piano in the school of music every Monday. | |
| TL Professional Translation | TL Google Translate Translation |

| | |
|---|---|
| انها تلعب البيانو في مدرسة الموسيقى كل اثنين | انها تعزف البيانو في مدرسة الموسيقى كل اثنين |

Google and internet apps designed for translation translated the word "play" as تلعب not تعزف. There would not be so much affecting problem but the meaning of تلعب would weaken the meaning. Thus, machine translation does not care about context which is a vice in linguistics to neglect context in translation. The core solution for such cases is that the application and electronic software must be modified by inserting word collocations into the machine memory or giving options about other translations of the same sentence. As such, whenever there is a word of "piano" and "play" in a particular text, then the translation of "play" into Arabic would be "يعزف " not "يلعب" .

### 1.4.4 Analysis of passive forms in MT.

Arabic passive forms in machine translation process really poses a problem. One of the problems of passive forms in Google translate application is the use of diacritics in Arabic and sometimes the passive forms are translated as active ones. Arabic passive forms are characterized by diacritics to change their grammatical voice from active into passive. Machine translation does not accept diacritics and the sentence even when diacritized is still giving the same meaning and this could be an obstacle which should be overcome. A sample sentence for passive form in machine translation by Google Translate.

| SL Text | |
|---|---|
| كُتِبَ ألدَرس | |
| TL Professional Translation | TL Google Translate Translation |
| The lesson was written | The lesson books |
| SL Text | |

| وُجِدَ الطفل | |
|---|---|
| TL Professional Translation | TL Google Translate Translation |
| The child was found | The child found |

Google Translate and many other apps of translation translated these two passive sentences into active once and different category else. The sentence a- was translated as noun + noun because the app has taken the form of the word كُتِبَ (written) without diacritics considering it as ( كُتُب) books by segmenting the word as (ك) , (ت),and (ب) as they are inserted computationally as كتب referring to the plural of the word كتاب a book. While in the sentence b- the case is similar to the machine translation of the a-sentence where the machine transferred the word without diacritics so, the translation of the word وُجِدَ (was found) as an active voice, but it is passive due to the absence of diacritics in the program.

### 1.4.5 Analysis of Homographic words in MT.

One of the key issues in machine translation is the Arabic homographic words which can be translated inaccurately. The following sample of sentence below and its Google translation shows the size of problem in carrying out machine translation.

| SL Text | |
|---|---|
| سئلَ سائلٌ الاستاذ عن مسالة الاحتباس الحراري. | |
| TL Professional Translation | TL Google Translate Translation |
| One asked the teacher about the global warming issue. | A liquid asked the teacher about the global warming. |

Google App Machine translated the word سائل into "liquid" which is undoubtedly inaccurate, because the word سائل gives the

meaning "the person who asks" in this context. The machine gives this translation of the word "سائل" as "liquid ", since it shares the same spelling of "سائل " the one who asks " in Arabic and in such a case in machine translation can be adjusted by giving more than one option for the same sentence or homographic words then the post-edit stage must be applied. Almost half of the problematic issues of Arabic translations in machine translation is the absence of diacritics. If the word "سائلٌ" would have been nunnated ( ٌ), (تنوين ) then it would have given the meaning of "the one who asks". So, the nunnation diacritics plays a significant role in disambiguating such cases.

## Conclusion:

The paper has come up to the conclusions that Google Translate app and other internet apps used for machine learning need to be taken into account and paid great attention due to their importance. It has been concluded that the problem of Arabic machine translation is attributed to the complex morphological inflections, abundance of vocabularies, long sentence structures, and the absence of diacritics in the internal memory of the app. Machine translation involves decoding the meaning of the source text and then re-encoding it in the target language. It became popular worldwide due to the great expansion of using technology-based learning smartphones. The paper illustrated the concept of machine translation and the process of machine translating. Google translate may provide some advantages and disadvantages for translation. However, sometimes this service may bring about incoherent output. Therefore, human intervention is needed through post-editing, that is revising and correcting the output of the MT by humans.

The paper handled the linguistic effects of machine translation in language learning employed in smartphones and computers. The paper also discussed the key linguistic problems and difficulties of machine translation carried out by mobile and computer applications for English and Arabic with paying attention to recommending some proposed solutions which help in getting rid of such difficulties. The paper analyzed special samples of Arabic sentences which were mistranslated by the Google Translate and other internet websites.

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## Abstract:

Because of the growing utility of technology-based learning especially translation and the rapid expansion of internet all over the world, it becomes an urgent need to research for the pros and cons of machine learning for its widely used. This paper aims at investigating the Arabic-English morphological, syntactic and semantic errors made by the machine applications with special reference to Google Translate app, and it also aims at the role of machine in learning. The paper discusses linguistics effects of machine translation in language learning. The paper also discusses the main linguistic problems and difficulties of machine translation conducted by mobile and computer applications for English and Arabic in addition to recommending certain steps and solutions which help in overcoming such difficulties. The paper deeply attempts to find recommendations for getting good quality of Arabic machine translation and to take them into account by developers of the learning apps in smartphones and computers.

The paper attempts to answer the following questions. What are the effects of errors made by the translation of Google Translate in Arabic upon users of electronic apps? What are the causes of these errors and how do these errors affect the translation quality? How to correct these errors and overcome them? The paper has adopted the analysis by analyzing certain sentences as samples translated by Google Translate app, smartphones dictionaries and Toolkit app and other internet websites specialized in machine translation.

**الملخص:**

نظرًا لتنامي فائدة التعلم القائم على التكنولوجيا ولاسيما الترجمة والتوسع السريع في الإنترنت في جميع أنحاء العالم ، فقد أصبحت هناك حاجة ملحة للبحث عن إيجابيات وسلبيات التعلم الآلي لاستخدامها على نطاق واسع، تهدف هذه الورقة إلى استكشاف الأخطاء المورفولوجية والنحوية والدلالات العربية–الإنجليزية التي ارتكبتها التطبيقات الآلية مع إشارة خاصة إلى تطبيق الترجمة من (Google) ، كما تهدف أيضًا إلى دور الآلة في التعلم، وتناقش الورقة الآثار اللغوية للترجمة الآلية في تعلم اللغة. تتناول الورقة أيضًا المشكلات اللغوية الرئيسية وصعوبات الترجمة الآلية التي تجريها تطبيقات الهاتف المحمول والكمبيوتر للإنجليزية والعربية بالإضافة إلى التوصية ببعض الخطوات والحلول التي تساعد في التغلب على هذه الصعوبات، تحاول الورقة بشدة العثور على توصيات للحصول على جودة جيدة للترجمة الآلية العربية وأخذها في الاعتبار من قبل مطوري تطبيقات التعلم في الهواتف الذكية وأجهزة الكمبيوتر.

تحاول الورقة الإجابة عن الأسئلة التالية. ما هي آثار الأخطاء التي تحدثها ترجمة جوجل للترجمة باللغة العربية على مستخدمي التطبيقات الإلكترونية؟ ما أسباب هذه الأخطاء وكيف تؤثر هذه الأخطاء على جودة الترجمة؟ كيفية تصحيح هذه الأخطاء والتغلب عليها؟ اعتمدت الورقة التحليل من خلال تحليل جمل معينة كعينات مترجمة بواسطة تطبيق (Google Translate) وقواميس الهواتف الذكية وتطبيق مجموعة الأدوات ومواقع الإنترنت الأخرى المتخصصة في الترجمة الآلية.