A Comparative Study of Machine and Human Translation: The Case of English-Arabic Literary Translations

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Abstract

Due to scientific quick spread, Machine translation is at the present time regarded as a very important means in teaching. As a matter of fact, a great number of people convert a variety of text types into other languages. In contrast, relying completely on machine translation may not only generate an inaccurate adaptation of the first text in the source language but it may possibly bring into being lots of translational blunders such as disconnectedness, strangeness, and at worst communication failure. The question is in that case: can machine translation be successful with no human involvement? In view of that, the study at hand endeavors to put side by side machine translation, i.e. "Babylon 10" and human translation in terms of lexical, structural and contextual differences through translating extracts from paragraphs in fiction of American literary texts entitled "The Old Man and the Sea" and "Tom Sawyer". The output of such translations will be investigated and considered in relation to syntax, semantics and types of translation used.

Key words: Descriptive Translation Studies (DTS), units of translation, free-literal dichotomy, unit/rank shifts, equivalence, formal correspondence

1. Introduction

Translation as a concept spread out practically during the second half of the twentieth century. This means of communication among cultures of different languages has incited both specialized and theorists in the field to try to find more refined methods and techniques for quick and inexpensive translation. Despite its privileged help, machine translation (MT) currently confronts significant as well as difficult constraints. Being a

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practical instrument, machine translation gives you an idea about its limit when put side by side to human translators.

In order to make a distinction between Human Translation and Machine Translation, an evaluation of the two concepts is drawn. The practical backdrop of the paper will make available an example of some literary texts; i.e. a novel and a novella, translated by both Human Translation and Machine Translation, trying to identify some of the chief practical features determining the usefulness of the translation.

Studies in the translation literature put an emphasis on looking for equivalents in a given translation. What matters is whether this equivalence is to be followed at the level of words, clauses, sentences, paragraphs, or the whole text. Consequently, the concept of Translation Units (TU) and equivalence emerged as real areas of interest to be investigated in the present investigation.

2. Definition of Translation

Translation usually refers to the act of formulating the language of the source text (S.T) into the language of the target text (T.T) by taking into account both linguistic as well as cultural distinctions. It is vital for the translator before starting the translation of any text, to have a clear understanding, linguistically, semantically and culturally speaking, of that source text in order that he or she would be able to express the genuine future meaning of the target language.

As stated by Munday, translation[1] can be explained as

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[1] For more details, see Munday's book *Introducing Translation Theory: Theories and Applications*

> *"The process of translation between two different languages involves the translator changing an original written text (the source text or ST) in the original verbal language (the source language or SL) into a written text (the target text or TT) in a different verbal language (the target language or TL)"*[2].

Indeed, what Jeremy explains in this affirmation is the category of translation regarded as "interlingual translation"[3] as has been labelled by Jakobson[4].

3. Machine Translation as a Revolutionary Tool

Because of the spreading business in technology throughout the world, developed countries tried to find easy and fast ways for communication. For this reason, a revolutionary type of translation known as Machine Translation emerged. This new means of translation which was carried out by machines has come to replace the lack of efficient translators. Yet the greater question to be addressed refers to the extent to which machine translation can generate good quality translations.

Machine translation (MT) is a programmed translation. It is the way through which computer software is brought into play to convert a text from one ordinary language (such as English) toward a different one (such as Arabic). In other words, during the process of translation, the machine analyses the formation of every term or phrase inside the text to be translated (source text). It subsequently divides this structure down into elements that

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[2] Esmail Zare-Behtash,"Culture-Specific Items in Literary Translation", [retrieved March 2013] *<http://translationjournal.net/journal/51culture.htm>*

[3]The type of translation defined by Jeremy is the most common one in that it is concerned with translation of written texts of different languages as opposed, for instance, to intralingual translation which is concerned with translating within the same language (using, for example, paraphrasing), or as in the case of intersemiotic translation that has to do with translating written texts into non-written works such as: films, pictures or music.

[4] In addition to "interlingual translation", Jakobson suggests two other types known as "Intralingual translation" and "intersemiotic translation".

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can be translated without difficulty, after that it constructs a term of the same structure in the target language. But the greater challenge lies in how machine translation can produce publishable quality translations.

4. Human Translation (HT)

Most of recent developments in translation theory consider literature, which is *"the highest form of translation"*, as an autonomous social institution and related to other social institutions. It not only examines the complex interconnections between poetics, politics, metaphysics, and history, but also borrows its analytical tools from various social sciences like linguistics, semiotics, anthropology, history, economics, and psychoanalysis.

Converting literary works into other languages is most of the time not easy when compared to translating other types of text. Indeed, literary works embody not only aesthetic where emphasis is on diction (the choice of words), figures of speech and images, but also expressive values in which the writer's ideas like enthusiasm, mood and feeling are noted. The translator should make an effort to reproduce these particular ethics[5] into the target language (TL). To be brief, the translation of fiction requires something more than translating other genres of literature.

To share in the creative process of literary translation, a literary translator[6] must primarily be equipped with wide knowledge in, syntax (sentence structure), grammar, and semantics (meanings) in both the source and target languages so as to create the voice, the rhythm, singing and musicality of the original in the target text (Munday 2009). In addition, he must not only demonstrate

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[5] Moral principles, moral values and attitude

[6] Compared to what automatic translation doe with equivalent terms, the human translator is the sole person who can interpret real cultural, linguistic and semantic features included in the source text.

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"an appreciation of and feeling for different styles, tones and nuances in both the source and target languages, thus recreating the mood of the original."(ibid: 4*)* so that he avoids merely altering words from one language to another. Literary translators must therefore consider artistic skills as well as language ones. Clifford Landers states in this respect that *"all facets of the work, ideally, are reproduced in such a manner as to create in the TL reader the same emotional and psychological effect experienced by the original SL reader."*[7]

In all, stating that language and creativity may only be a part of the repertoire of a good literary translator is not enough because as Phyllis Gaffney affirms, there is an intuitive sixth sense which interferes with the creative mind during given translations.[8]

5. Methodology

The present research seeks to investigate units of translation (TU) that the experts in literature translation make use in the translation of fiction from English to Arabic. It also deals with the study of equivalence existing between both the source translation (ST) and target translation (TT) segments, while taking into consideration the dichotomy of free-literal approach to translation in relation to the occurrence of unit-shifts in the UTs. So the approach is merely limited to the results of translation in that it is a comparative analysis of some extracts of English fiction.

Therefore, the research seeks to compare and contrast pairs of ST and TT segments [9] in order to determine the most recurrent

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[7]. "Literary Translation." [Retrieved March 2013]

<http://www.translationblog.trustedtranslation.com/literary-translation-2010-02-03.html>

[8] *http://www.trnslationdirectory.com/articles/articles2332.php*

[9] In fact I used a parallel corpus which is a set *"consisting of a set of text in one language and their translations in another"* (See Olohan, 2004: 24).

UT as well as to find out the correlation between their UTs and the kinds of translation, i.e. free versus literal.

In an endeavor to draw attention to the key effective discrepancies between machine translation and human translation, the paper makes available the subsequent texts to be translated by the two approaches of translation. The novel and the novella were selected because they are originally written in English, being regarded as masterpieces and closely related to each other in terms of genre. The texts are extracts taken from Ernest Hemingway's novella "The Old Man and the Sea" (1952) and Mark Twain's novel "Tom Sawyer" (1876).

The focus is to be on giving a picture of, semantic and pragmatic differences revealed in the translated version. The translation is to be from English into Arabic. The Arabic translations selected were based on the amount of selling Arabic translations and the professionals who made the translations.

No.	Novel &Novella/ Title	Author	Year of Edition	Edition
1	"The Old Man and the Sea"	Ernest Hemingway	2009	Talantikit, Béjaîa
2	"The Adventures of Tom Sawyer"	Mark Twain	1997	Chi'ar Linashr wal'ouloum, Aleppo

Table 1: The list of English novels

Nber	Novel &Nove	Translator	Year of Edition	Edition

	lla/ Title			
1	توم سوير	Rym 'adel Nassifَ	1997	شعارللنشرروالعلومة َةُقّةُ-حلب
2	الشيخ والبحر	Samir 'Azèt Nassar	2009	دار ومكتبة الهلال

Table 2: The list of Arabic translations

6. Data Collection and Analysis Procedure

To facilitate deal the process of data collection, some passages of each literary work were selected. The extracted sentences of each novel/Novella were then matched with their translation. In this way, the ST-TT segments were specified for each literary work based on the established equivalent relations. For that matter, the sentence was basically adopted as the major unit of analysis because it is regarded as a meaningful unit that conveys the message entirely. However, there were instances in which punctuation marks like full stops interfered so as to separate the units of analysis within the ST sentences.

After specifying the ST-TT segments, they had to be analyzed to see what UT(s) were applied in them by both machine and human translation. I adopted as categories of UT Newmark (1991: 66-68)'s statement that assumes the main translation units to be made a hierarchy: Text, paragraph, sentence, clause, phrase/group, word, and morpheme.

7. Investigating Units of Translation

In what follows, a short overview about both simple and compound sentence will be given.

7. 1 Sentence as UT

A simple sentence, also called an independent clause, contains a subject and a verb, and it expresses a complete thought[10]. Also, it could be defined as a full, independent prediction containing a subject plus a predicate in the form of independent clause. The sentence can be classified into two types: simple and compound, both of which contain independent clause as their only building block. So this UT was treated in simple sentences and compound sentences, and the number of both simple and compound sentences is reckoned as indicative of UT as sentences.

▪ Simple Sentence as UT**:** A simple sentence contains one full subject and predicate and can take the form of a statement, a question, a request, or an exclamation. To Wishon and Burks (1968), such sentence also called an independent clause contains a subject and a verb, and it expresses a complete thought.

▪ Compound Sentence as UT**:** A compound sentence contains two independent clauses joined by a coordinator for example: for, and, nor, but, or, yet, and so (FANBOYS). Except for very short sentences, coordinators always come first followed by a comma.

7.1 Investigating Unit-shifts in the UTs applied by both MT and HT

To avoid a basically source-oriented translation, i.e. if the SL is imitated exactly in the TL, it is necessary for the translator to make a shift in which he moves away from the ST as well as from close linguistic equivalence.

	SL	MT	HT
	"The old man was thin and	**(Babylon 10)**	

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[10] Baack, E. (2005) "Advanced Composition for Non-Native Speakers of English" [Retrieved March 2013] *http://eslbee.com/sentences.htm*

Sentence 1	gaunt with deep wrinkles in the back of his neck.".(*The Old Man and the Sea,* p. 14)	كان الرجل قليل السُمك وخفيف الوزن الهزيل مع عمق التجاعيد في الجزء الخلفي من رقبته.	كان الرجل العجوز نحيلا بغضون عميقة في قفا رقبته.
Sentence 2	All the village went to the courthouse the next day. (Tom Sawyer p 80)	**(Babylon 10)** كل قرية ذهبت إلى المحكمة في اليوم التالي.	و في اليوم التالي ذهب كل سكان القرية إلى المحكمة.

Table 3: Some example of shifts

7. Discussion of Findings

7. 1 Simple Sentence as UT

One can admit right from the start that machine translation does not give an accurate translation of the source text into the target text. Although the translated text carries one way or another the essential elements (i. e.; pivot words[11]) limited to the language of the source text, it still does not allow the reader to get hold of a precise interpretation of meaning. The point is that the machine has committed a breach, which is in fact an important inconsistency.

In what follows, a correlation is made here between the extents to which the human translation has been successful in converting the source text into the target text explaining if the translated text has the equivalent results similar to the source text.

Simple Sentence			

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[11] Pivot words refers to the "two–word" period in which the child relies on content words to convey his messages.

	Text Source (Writer)	**Machine Translation**	**Human Translation**
Sentence 1	They picked up the gear from the boat.(Ernest Hemingway p. 14)	**World lingo** التقط هم فوق الترس من الزورق,	أخرجا العدة من القارب.
Sentence 1a	They picked up the gear from the boat. (Ernest Hemingway p. 14).	**Google** هم التقطوا فوق الترس من الزورق.	أخرجا العدة من القارب.
Sentence 2	All the village went to the courthouse the next day. (Tom Sawyer p 80)	**Babylon 10** كل قرية ذهبت إلى المحكمة في اليوم التالي.	و في اليوم التالي ذهب كل سكان القرية إلى المحكمة.
Sentence 3	Tom went miserable. (Tom Sawyer p. 80)	**Babylon 10** توم عادوا miserable.	عاد توم إلى المنزل والتعاسة تنهش قلبه.
Sentence 4	I am a strange man. (Tom Sawyer p. 14)	**World lingo** أنا رجل غريب	أنا رجل غريب.

Table 4: Machine & Human Translation

From the first sight there appears to be a literal translation which prevents the reader from getting an obvious interpretation of the source text. In this word-for-word translation (refer to sentence 1, 1a, 2, 3 and 4); the machine has systematically replaced each word in the source text (sentence pattern SVO) with another, for example:

	Sentence 1		Sentence 2	
They	هم		Tom	miserable.
picked	التقطوا		Went	توم ا
up	فوق		Miserable	عادو
the gear	الترس			
from	من			
the boat	الزورق			

Table 5: Literal translation (word-for-word)

Another aspect which characterizes sentence 3 refers to both the failure of the machine to offer a synonym for the adjective "miserable", and to provide the correct use of translation. There is also no agreement between the 3rd person singular subject (Tom) and the corresponding Arabic verb (عادو) which indicates the plural.

It becomes apparent from the above table that this type of translation is a simple spitting image of the source text as opposed to a real adaptation of the target text. Although meaning can be understood, an entire well-formed translation must take into account the structure of the target text. Thus language comprehension of given texts requires feasible linguistic rudiments which machines are deprived from till now.

As opposed to machine translation, the human translator has focused on both the structure of the source text and the one of the target text. Indeed, humans have the capacity to shift from language into another to make available appropriate translations. In addition, they can include the artistic flavor which enhances the literary translation as in ["عاد توم إلى المنزل والتعاسة تنهش قلبه"]

7. 2 Compound Sentence as UT

In the above four sentences of the source texts, there are compound sentences. Each sentence contains two or three independent clauses, and they are joined by a coordinator with a comma preceding it.

Compound Sentence	Text Source (Writer)	Machine Translation	Human Translation
Sentence 1	"The old man was thin and gaunt with deep wrinkles in the back of his neck." *The Old Man and the Sea,*p. 14)	**(Babylon 10)** كان الرجل قليل السُمك وخفيف الوزن الهزيل مع عمق التجاعيد في الجزء الخلفي من رقبته.	كان الرجل العجوز نحيلا بغضون عميقة في قفا رقبته.
Sentence 2	"The old lady went to the open door and stood there, looking out into the garden she couldn't see Tom, so she shouted, "You-u-u Tom!" (*Tom Sawyer*, p.14).	**(Google)** امرأة مسنة ذهبت إلى فتح الباب ووقفت تجيل الطرف في الحديقة. وقالت لكنها لا ترى توم حتى ضحت يا يو يو توم	و توجهت السيدة إلى الباب المفتوح ووقفت تجيل الطرف في الحديقة، لكنها لم تستطيع رؤية توم فصاحت: أنت يا توم – وم.
Sentence 3	"The boy quickly ran out, climbed up the garden fence, and	**(Babylon 10)** الفتى يرافقهم بسرعة، تسلق.	وبسرعة هرب الصبي وتسلق سور الحديقة ثم اختفى خلفه.

	disappeared over it. (Tom Sawyer p 10)	سور الحديقة اختفت	
Sentence 4	He was an old man who fished alone in a skiff in the Gulf Stream and he had gone eighty-four days now without taking a fish. (The Old Man and the Sea. p. 9)	**(Babylon 10)** كان رجل عجوز الذين يصطادون وحدها في زورق في تيار الخليج ، وانه ذهب أربعة وثمانين يوما دون الأسماك.	كان رجلا عجوزا يصطاد السمك وحيدا زورق صغير في تيار الخليج وقد أمضى أربعة وثمانين يوما حتى الآن دون أن ينال سمكة.

Table 6: Translating Compound Sentence as UT

No one can deny that the main raison d'être behind any translation is to transfer as much as possible the meaning intended by the source text's writer into the target text. Yet, in machine translation, this is not always the case in that sometimes the achieved meaning is ambiguous, distorted, and it becomes difficult to grasp it just like in the following examples:

EX 1:

(SL) "The boy quickly ran out, climbed up the garden fence, and disappeared over it. (Tom Sawyer p 10)

[MT] : الفتى يرافقهم بسرعة، تسلق. سور الحديقة اختفت

[HT]: وبسرعة هرب الصبي وتسلق سور الحديقة ثم اختفى خلفه

EX 2:

(SL) "He was an old man who fished alone in a skiff in the Gulf Stream and he had gone eighty-four days now without taking a fish." (The Old Man and the Sea. p. 9)

[MT] : كان رجل عجوز الذين يصطادون وحدها في زورق في تيار الخليج ، وانه ذهب أربعة وثمانين يوما دون الأسماك

[HT] : كان رجلا عجوزا يصطاد السمك وحيدا زورق صغير في تيار الخليج وقد أمضى أربعة وثمانين يوما حتى الآن دون أن ينال سمكة.

EX 3:

(SL) "The old man was thin and gaunt with deep wrinkles in the back of his neck."(*The Old Man and the Sea,* p. 14)

[MT]: كان الرجل قليل السُمك وخفيف الوزن الهزيل مع عمق التجاعيد في الجزء الخلفي من رقبته

[HT]: كان الرجل العجوز نحيلا بغضون عميقة في قفا رقبته

In what follows, there is a constant Violation of meaning during the transfer from English to Arabic. For instance, the verb "ran out" is associated with "يرافقهم" meaning "come with" which is completely confusing. The same is true for the verb "had gone" which is connected to "ذهب"; there is also no verb agreement as in the singular verb "fished" and the plural verb"يصطادون", the singular pronoun "who" and becomes a plural "الذين" in the translated text. Another strange vagueness refers to the approximate interpretation of "gaunt" which is reflected in a series of synonyms"وخفيف الوزن الهزيل" as if giving a definition of a dictionary wherein the reader has to guess the fitting meaning. In these examples, the machine created some confusing associations which are quite unfit for the reason that the machine concentrates mostly on the source text.

All the misuses recorded so far come directly from literal translation, but what about typography. For example odd gaps are left randomly either at the beginning, middle or end of the translated passage. Last but not least, refers to odd the misuse of punctuation if it ever exists. On the whole, one can state that

there is a monotonous exploitation of punctuation all the way through the passages studied in the present paper

It is to be remarked that successful translators are mostly concerned with the sentence as the unit of translation to find the closest natural equivalent to the source-language message and to best convey the message to the reader. It can also be inferred, as far as the product-oriented view of both machine and human translations are concerned, that at the sentence level, both MT and HT do not seem to be far from each other; whereas, at the compound sentence level great divergences are to be recorded.

Furthermore, a literary text which, by its very nature, depends on personal interpretation focuses on the target translation. For instance, both literary text used in this study involves narrative sequence with descriptive comment. The same cannot be said, however, of MT wherein a literal (word-for-word) translation prevails throughout. All in all, one can affirm that being familiar with the internal structure of the text is not sufficient. What is considered necessary is a translation *which [provides] language life away from the [time] and space of close utterance or transcription* (Stiener, 1975: 28)

Conclusion

In this paper an attempt has been so as to distinguish between Machine Translation and Human Translation. In fact, successful translators who are more effective and flexible in comparison with Machine Translation are mostly concerned with the sentence as the unit of translation to find the closest natural equivalent to the source-language message and to best convey the message to the reader. The findings of this research can provide guiding principle for the beginner in translator to acquire a number of practical tips when dealing with literary translation. For that reason, it is very important to devise practical activities such as grammar exercises, and translation tasks on grammatical structures in translation classes.

Finally, given the importance of UT in the literary translation, it is vital to give more attention to further researches in this arid subject to pave the way for still uncertain avenues.

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