




Tracing machine and human translation errors in some literary texts with some implications for EFL translators

Mohammad Awad Al-Dawoody Abdulaal^{a 1} 

^a Prince Sattam Bin Abdulaziz University, Al-Kharj, Saudi Arabia
^a Port Said University, Port Said, Egypt

APA Citation:

Abdulaal, M. A. A. D. (2022). Tracing machine and human translation errors in some literary texts with some implications for EFL translators. *Journal of Language and Linguistic Studies, 18*(Special Issue 1), 176-191.

Submission Date: 21/07/2021

Acceptance Date: 03/11/2021

Abstract

This research study aims at drawing a comparison between some internet emerging applications used for machine translation (MT) and a human translation (HT) to two of Alphonse Daudet's short stories: *The Siege of Berlin* and *The Bad Zouave*. The automatic translation has been carried out by four MT online applications (i.e. Translate Dict, Yandex, Mem-Source, and Reverso) that have come to light in the wake of COVID-19 breakout; whereas the HT was carried out by Hassouna in 2018. The results revealed that MT and HT made some errors related to (a) polysemy, (b) homonymy, (c) syntactic ambiguities, (d) fuzzy hedges, (e) synonyms, (f) metaphors and symbols. The results also showed that Yandex has dealt with polysemy much better than HT in *The Siege of Berlin*, but the opposite has been noticed in *The Bad Zouave*. Another crucial result is that HT has excelled all MT systems in homonymy and syntactic ambiguities in the two literary texts. A final result is that both MT and HT have dealt with fuzzy hedges at similar rates with little supremacy on the part of Reverso; whereas Mem-Source and Translate Dict have dealt with synonyms in the two literary texts much better than HT. The study concluded that EFL learners should be aware of the fact that in spite of the advantageousness of MT systems, their inadequacies should not be overlooked and handled with post-editing.

Keywords: the literary text; machine translation; human translation; translation errors; polysemy; homonymy; EFL translators

1. Introduction

Owing to the plentiful online production of literary and non-literary pieces of writings in miscellaneous scopes and fields in addition to the human fiasco in addressing the translation needs, the indispensability of machine translation commenced arising at the beginning of the twenty-first century (Hardmeier, 2015; Wilks, 2009; Yao, 2017; Lyons, 2020). It has been recently pointed out that the proper usage of translation modern methodologies should be combined into translation pedagogies and ultimately courses should be given to EFL learners and instructors (Wang, Shang & Briody, 2013). Despite the leverage of translation applications and websites in proposing some solutions associated with distinct fields and scopes, the validity and credibility of such translation software, websites, and

¹ Corresponding author:

E-mail address: ma.abdulaal@psau.edu.sa

applications when it comes to literary texts are still totally dialectical (Eley, Young, Hayes, & McNulty, 2019; O'Brien, 2012). A huge number of educators still belittle the significance of machine translation software and websites in rendering and construing literary texts (Trujillo, 1999; Venuti, 2017). This dimension, for Erwen and Wenming (2013), has some pedagogical aspects related to the growing need to coalesce contemporarily emanating technologies in teaching activities.

For concise and convenient usage of translation applications and websites in educational contexts, these translation technologies should be well estimated. Therefore, this research study endeavours to assess the importance of applying some machine translation software, applications and websites to literary genres aiming at determining and crystalizing the difficulties and the repeated stumbling blocks that may negatively impact the precision and thoroughness of machine translation software. To achieve this purpose, four translation systems have been elected (i.e. Translate Dict, Yandex, Mem Source, and Reverso) and two of Alphonse Daudet's short stories (i.e. *The Siege of Berlin* and *The Bad Zouave*) have been subjected to both human and automatic translations to compare and figure out the hurdles and obstacles noticed within these two different kinds of translations.

2. Theoretical Framework and Literature Review

Machine translation is the automatic translation of a spoken or written discourse from one natural language to another without any human intervention (Garrison, Anderson & Archer, 2000; Jiang, Qin, & Sun, 2016). The word 'automatic' means that the translation is undertaken via computer or smartphone software or applications. Being not a modern science and dating back to the turn of the seventeenth century, such a translation was referred to as mechanical rather than machine translation (Nelson, 2019; Poibeau, 2017; Prah & Petzolt, 1997). Machine translation owes its emergence and development to Descartes, the first to propose that human language can be displayed via codifications with distinct languages to render the same semantic content when translated (Shang, 2016; Washbourne, 2014).

Furthermore, Crisp and Harmelink (2011) pointed out that the word 'automatic' was employed instead of 'machine' as a dominant term. Dron and Anderson (2016) contended that in the wake of the World War II, it was totally convoluted to employ computer software to translate languages. Owing to the immense use of literary figurative devices, such as similes, metaphors, irony, and metonymy, there are scarce research endeavours seeking solutions to problems that arose when using machine translation despite the growing employment of machine translation software in distinct scopes comprising the translation of news, short stories, and academic papers (Babelyuk, 2017; Banks, 2020; Bachleitner, 2019; Church, 1993; Bhattacharyya, 2015; Lopez, 2007).

Miscellaneous research studies, hence, started estimating the usability of machine translation applications and websites in translating scholarly messages comprising narratives, poetic works, and dramatic projects. Huang and Knight (2019) and Carter and Monz (2011) pointed out that machine translation technologies can be profitable in translating Spanish literature to English with slight bloopers and errors that can be easily processed by Spanish software developers. Chaeruman (2019) and Chan (2018) revealed that 32.6% of the sentences produced by machine translation technologies and accredited professional translators were to a great extent identical and of the same quality. By the same token, Abdi and Cavus (2019) in addition to Basal (2017) estimated various machine translation applications in translating Danish prose and poems. They pointed out that machine translation applications can be employed in literary translation. They contended that machine translation has advantageous potentials for language users in relation to literary interpretation.

On the other hand, Koehn (2010) asserted that machine translation software is not that efficient when it comes to literary texts. To assess the efficiency of machine translation technologies for literary

messages, Koehn (2020) conducted a research study to examine the usability of machine translation for some short stories to be translated from French into English. He concluded that miscellaneous lexical, grammatical, and tectonic errors occurred which had a terrible impact on the translation quality. Absolon (2019) also pointed out that certain social and cultural inter-textual references have not been given the required attention. Hence, Absolon concluded that machine translation technologies for literature are not that credible and reliable. It comes in consistency with Rutkowski (2012) that pointed out that there were various obstacles and stumbling blocks attributed to machine translation of literary texts which make it convoluted for users to count on machine translation systems.

3. Research Problem and Questions

Despite the expanded analyses on the evaluation of machine translation technologies in the Western and Eastern languages, the review of the literature shows that little has been conducted regarding evaluating machine translation systems of translating English literary texts into Arabic and the embodiment of these software systems on EFL contexts. This research study attempts to address this research gap by assessing the machine translation websites to two literary texts from English and Arabic. To attain this goal, this study raises the following questions:

1. What are the major categories of the errors made by each kind of translation (MT and HT)?
2. Which kind of translation (MT or HT) scored the least number of errors when translation *the Siege of Berlin* and *the Bad Zouave*?
3. Which one of the translation applications scored the lowest number of errors?

4. Methodology

4.1. Research Design

To analyse the data collected, a research mixed design was adopted. The data were analysed quantitatively and qualitatively. In the qualitative analysis, errors attributed to the machine and human translations are defined and grouped into six categories. In the quantitative analysis, the errors made by the four translation websites and the two human translations were calculated and tabulated. Further, the mean (μ) and the standard deviation (SD) of each error category were computed, then, a comparison was drawn between the error categories in the light of the latter measurements.

4.2. Research Tools

To estimate the machine translation to literature from English into Arabic, four applications were employed: Translate Dict, Yandex, Mem Source, and Reverso. The rationale is that these four technological systems become very dominant after the heavy reliance on online learning at the beginning of 2020 in the wake of the pandemic outbreak of COVID-19. Translate dict is an online translator website providing free translation and professional translation services in 51 languages. One can also translate and speak any texts through the voice translator, convert texts to speech, get the meanings of words with the dictionary. Yandex Translate is an online translation service supplied by Yandex Company, intended for the translation of text or web pages into another language. Mem Source Translate automatically selects the optimal machine translation engine for your content, depending on engine performance data. It comes with Amazon Translate and Microsoft Translator. Reverso is a free online translation into Arabic, French, English, Spanish, Danish Italian, Russian, Portuguese, Hebrew, and Japanese (Haque, Hasanuzzaman, & Way, 2020).

4.3. Data Collected

The Siege of Berlin is a short story by Alphonse Daudet. It narrates the entry of the Prussians into Paris in 1871. An old French Colonel, being totally below the bar, has been hoaxed by his grandson and his doctor about the debacle of the French soldiers. It is translated into Arabic by Hassouna in 2018. *The Bad Zouave*, translated by Hassouna also, focuses on the French patriotism. Zouaves refer to new and unusual military units in the French army. The two short stories, *The Siege of Berlin* and *The Bad Zouave* were translated by Translate Dict, Yandex, Mem Source, and Reverso, and the machine translations were compared to the human translations attempted by Hassouna. Macro-textual tools were employed to assess the machine translations of the four websites. These assessment tools are concerned with estimating the goal, function, and influence of the automatic translations.

5. Results and Data Analysis

5.1. Statistical Quantitative Analysis

Table (1) below shows the types of errors made by a human translation and some websites when rendering *The Siege of Berlin* from English to Arabic. This table reveals six basic errors noticed in MT and HT; these errors include (a) polysemy, (b) homonymy, (c) syntactical ambiguities, (d) fuzzy hedges, (e) synonyms, and (f) metaphors and symbols. This table reveals six significant findings: (1) Yandex has dealt with polysemy much better than HT; (2) HT has excelled all MT websites in homonymy and syntactical ambiguities; (3) both MT and HT have dealt with fuzzy hedges at similar rates with little preponderance on the part of Reverso; (4) Mem source has dealt with synonyms much better than not only Translate Dict, Yandex, and Reverso, but also HT; (5) both HT and Translate Dict have attempted metaphors and symbols with the same qualified standards, excelling the rest of MT methods (i.e. Yandex, Mem Source, and Reverso); and (6) HT excelled all MT methods in dealing with three basic errors, including homonymy, syntactic ambiguities, and metaphors and symbols.

Table 1. A comparison between MT methods and HT in attempting *The Siege of Berlin*

Error Type	Translate Dict	Yandex	MemSource	Reverso	Human Translation
Polysemy	15	5	6	15	9
Homonymy	26	14	8	18	6
Syntactical ambiguities	31	18	23	22	3
Fuzzy hedges	24	22	9	1	2
Synonyms	41	25	7	17	14
Metaphors and symbols	5	15	12	18	5
Total	142	99	65	91	39

Figure (1) below illustrates a linear representation of the high rate of errors made by Translate Dict, Yandex, and Reverso, and it also displays the excellence of HT over most of the MT methods. Furthermore, this figure reveals that Mem Source has come second immediately after HT in terms of the amount of errors made when translating *the Siege of Berlin*.

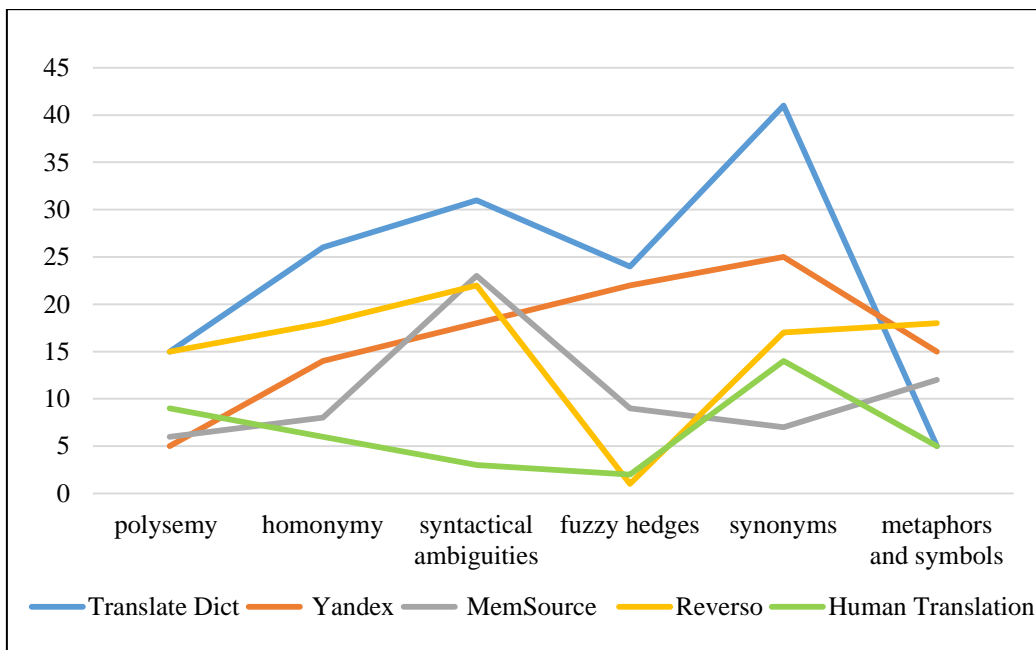


Figure 1. MT vs. HT in The Siege of Berlin

Figure (2) below shows that Translate Dict scored the highest amount of errors with $\mu_1 = 23.6$ and $SD = 18.9$; Yandex comes second to Translate Dict with $\mu_2 = 16.5$ and $SD = 9.01$; Reverso comes third with $\mu_3 = 15.2$ and $SD = 5.9$; and Mem source scored the least amount of errors made by MT with $\mu_4 = 9.8$ and $SD = 3.1$. The most important finding in this figure is that HT reported the least amount of errors being far away in rate from Mem Source with $\mu_5 = 6.5$ and $SD = 5.3$.

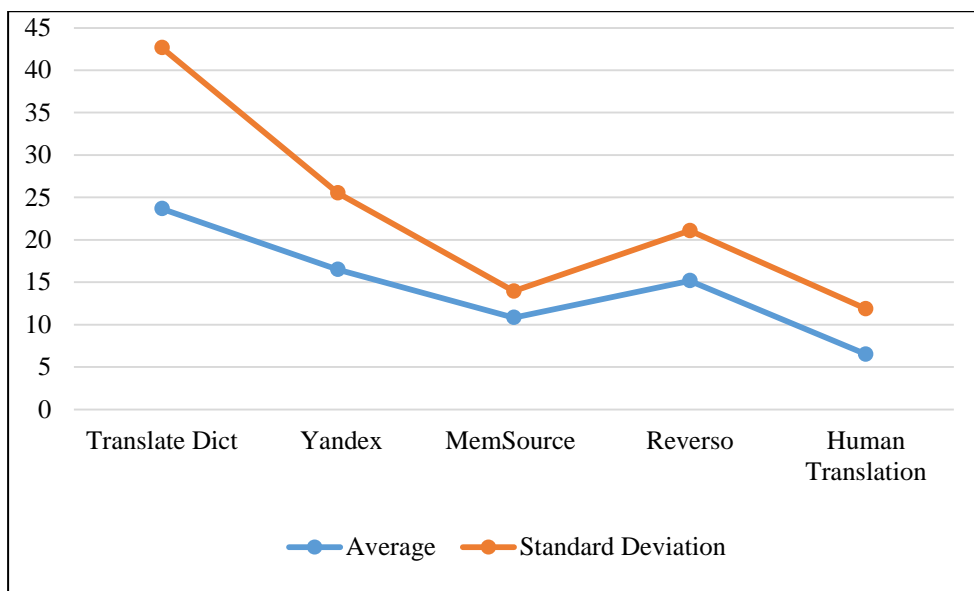


Figure 2. A comparison between MT and HT in terms of means and Standard Deviations in The Siege of Berlin

Table (2) sums up a comparison between MT methods (i.e., Translate Dict, Yandex, Mem Source, and Reverso) and HT to *The Bad Zouave*. This table reveals the same six errors made when construing *The Siege of Berlin* by MT and HT. These errors include (a) polysemy, (b) homonymy, (c) syntactical ambiguities, (d) fuzzy hedges, (e) synonyms, and (f) metaphors and symbols. Table (2) reveals five significant findings: (1) HT has dealt with polysemy, homonymy, and syntactic ambiguities with much

better rates than MT; (2) Mem Source has excelled all MT systems in addition to HT in syntactical ambiguities; (3) Reverso has dealt with fuzzy hedges with the least amount of errors excelling HT and other MT methods; (4) Translate Dict has dealt with synonyms much better than not only Mem Source and Reverso, but also HT; (5) Mem Source has attempted metaphors and symbols with slight higher rates than Translate Dict and HT.

Table 2. A comparison between MT methods and HT in attempting *The Bad Zouave*

Error types	Translate Dict	Yandex	Mem Source	Reverso	Human Translation
Polysemy	12	10	12	11	7
Homonymy	23	15	15	12	5
Syntactical ambiguities	45	7	6	14	5
Fuzzy hedges	12	31	19	5	8
Synonyms	5	22	6	8	13
Metaphors and symbols	8	14	7	24	8
Total	105	99	65	74	46

Figure (3) below delineates a linear representation of the high rate of errors made by Translate Dict and the excellence of HT over most of the MT methods including Translate Dict, Yandex, Mem Source, and Reverso. Furthermore, it also shows that Mem Source, like figure (1) above, has come second after HT in terms of the amount of errors made when translating *The Bad Zouave*.

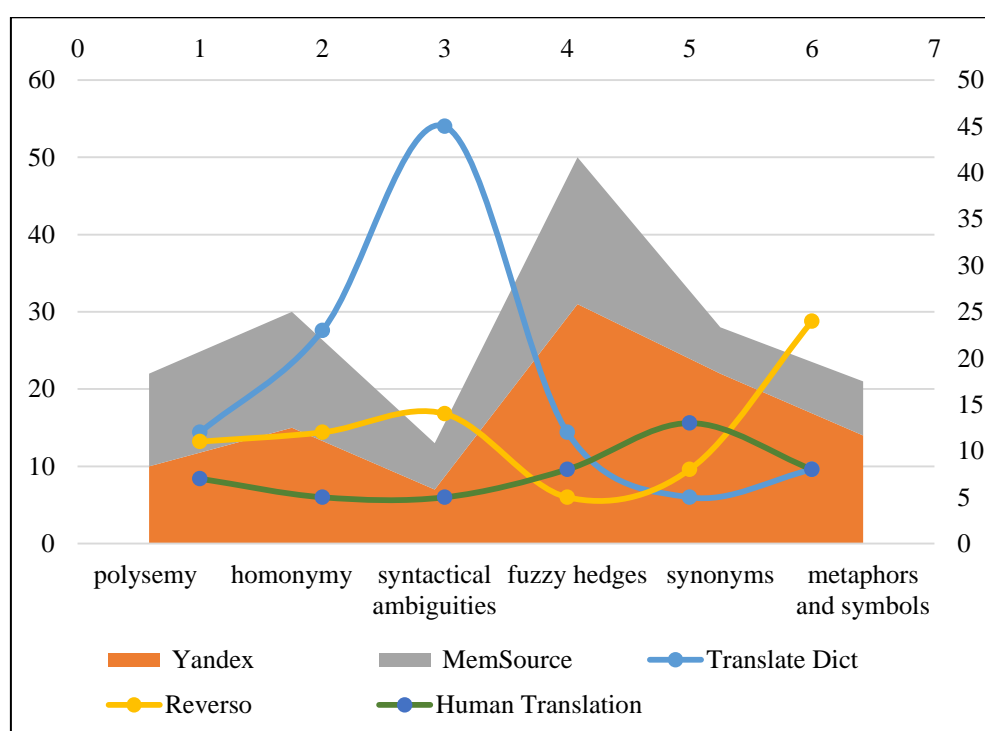


Figure 3. MT vs. HT in construing *The Bad Zouave*

Figure (4) below shows that Translate Dict scored the highest amount of errors with $\mu_1 = 17.5$ and $SD = 14.7$; Yandex comes second to Translate Dict with $\mu_2 = 16.5$ and $SD = 8.7$; Reverso comes third with $\mu_3 = 12.3$ and $SD = 6.5$; and Mem source scored the least amount of errors made by MT with $\mu_4 =$

10.8 and SD = 5.4. The most crucial finding in this figure is that MT reported the least amount of errors being far away in rate from Mem Source with $\mu_5 = 7.6$ and SD = 2.9

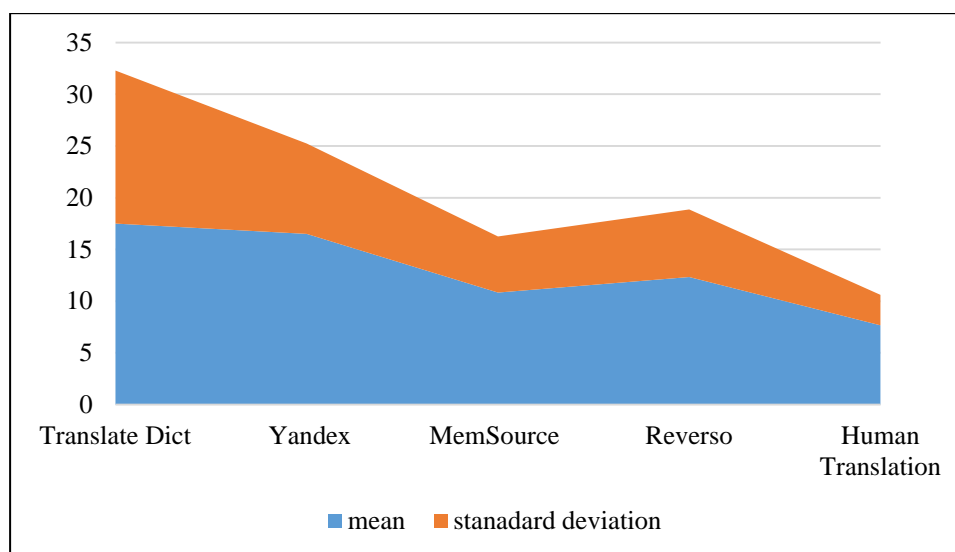


Figure 4. A comparison between MT and HT in terms of means and Standard Deviations in The Bad Zouave

5.2. Qualitative analysis

The snapshot in (1) below gives an example of a machine translation error that is related to polysemy. The phrasal verb ‘go up’ is mistranslated at the beginning of the excerpt. It has several meanings, two of which are ‘to rise or increase’ and ‘to go northwards’. Reverso translates ‘go up’ as “سنرفع”, but the context implies that the narrator and his companions were heading northwards. Thus, the proper translation was supposed to be “كنا نتجه شمالا ناحية الشانزليزيه”. Another machine translation error related to polysemy in the same snapshot is the mistranslation of the polysemous word “pompously”, which has many meanings, three of which are “vainly”, “convivially”, “luxuriant and sumptuous”. Reverso chose the former disregarding the context that predestines the later. Thus, to ameliorate the translation, it would be much better to be “و المنازل الفارهه التي تتجمع حول قوس النصر”



Snapshot 1. Examples of polysemy errors made by Reverso in The Siege of Berlin

A third machine translation error related to homonymy is the mistranslation of the original French word “au courant”, which has two unrelated meanings: “to be aware of something” and “to woo and

besech somebody”. Reverso mistakenly picked up the latter, whereas the former would have been the best choice (see snapshot 2 below). Therefore, the translation would be much better if it were: “لقد كان ”من الضروري أن يظل على دراية بتحركات القوات



Snapshot 2. A polysemy error, “au courant”, made by Reverso in The Siege of Berlin

The excerpt (3) below represents a sample of some errors related to syntactic ambiguity made by translate Dict. “The little drums of Jena begin to beat” is ambiguously and syntactically mistranslated, and the source of opaqueness is attributed to the improper syntactic translation of the word “little”. In the source text, this word is used as an adjective, but in the target one, it has been translated into an adverb. It would have been much better and clearer if it had been translated as “وتبدأ طبول جينا الصغيرة في ”الخفقان”. In the source text, “little” is used as an adjective to modify Jena, but in the target text, it is translated as an adverb modifying how Jena’s drum beats.

In the same excerpt, there is a homonymy translation error. The word “tramp” has many meanings, two of which are “vagabond” and “treading”. Translate Dict used the former, whereas the latter was the most appropriate to the context. Therefore, it would have been much better if it had been translated as “القوات ذات الخطوات المتناقلة”. Another point to mention is that the language stocking programming of Translate Dict is considerably poor; it has been noticed when it fails to translate the word “sabres” into its Arabic equivalent “سيوف”.

A final point in this excerpt is the mistranslation of the word “confused” as the context showed that the people of the city were in a state of perplexity and bewilderment as they did not know who is going to occupy their town. Therefore, the suggested translation would be “وكان هناك صوتٌ محيرٌ قادم من وراء قوس ”النصر”. The word “مشوش” did not reflect the psychological state of the city dwellers; it just describes the nature of the sound heard in the city.

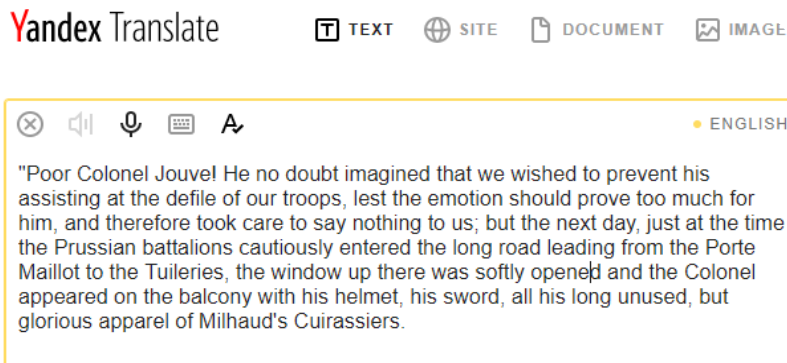


"But no! there, behind the Arc de Triomphe, there was a confused sound, a black line advancing in the growing daylight—then, little by little, the spikes of the helmets glisten, the little drums of Jena begin to beat, and under the Arc de l'Etoile, accompanied by the heavy tramp of the troops, by the clatter of sabres, bursts forth Schubert's Triumphal March

"ولكن لا! هناك، وراء قوس النصر، كان هناك صوت مشوش، خط أسود يتقدم في ضوء النهار المتنامية - ثم، شيئاً فشيئاً، والمسامير من الخوذات تلمع، والطبول قليلاً من جينا تبدأ في ضرب، وتحت قوس دي L'Etoile، يرافقه الصعلوك الثقيلة للقوات، من قبل قفاعة من sabres، رشقات نارية فورث شوبرت مسيرة النصر

Snapshot 3. A homonymy and syntactic ambiguity errors made by Translate Dict in The Siege of Berlin

The excerpt in the snapshot below represents some of the machine translation errors made by Yandex on translating *the Siege of Berlin*. The word “defile” is of two totally different meanings: “to besmear” and “a couloir”. Yandex made a homonymy error when using the former meaning instead of the later to translate the source text. It should have been construed as “إنه كان يتصور أننا نمنعه من مد يد العون”. “للقوات المتمركزة في الممر



Snapshot 4. A homonymy error example made by Yandex in The Siege of Berlin

The snapshot (5) below represents some of Memsorce translation errors when construing *The Bad Zouave*. The first error is a polysemy one as Memsorce failed to properly construe the past perfect verb “had gone”. It was transposed as “betaking”, which contextually is inappropriate and cannot describe the extinguishing of the smithy fire. Thus, it would be much better if it was transposed as “عندما انطفأت نيران الحدادة و معها غابت الشمس”.

Another error related to homonymy is the mistranslation of the word “forge” which has two totally different meanings: (1) rigging and (2) the smith’s shop. Memsorce used the former, whereas the latter was much more appropriate. Therefore, it would be more suitable to be transposed as follows: “ولكن في هذا المساء ظل الحداد الطيب في دكانه”.

A third error related to syntactic and metaphorical ambiguity is the mistranslation of the word “grateful”. Structurally, it is an adjective that modifies the blacksmith’s weariness; contextually, it is an adjective modifying the blacksmith’s psychological state of thankfulness. Thus, structurally, it should have been translated as Memsorce suggested; however, it seems very much awkward in Arabic. Ideationally, it should have been transposed as “لقد كانت تلك عادته في الجلوس على اريكته لكي يستريح من”. The figurative use of the word “grateful” adds to the difficulty of transposing the word from English to Arabic as it personified the blacksmith’s state of weariness.



<p>THAT evening the big blacksmith, <u>Lory</u> of <u>Sainte-Marie-aux-Mines</u>, was not happy. When the smithy fire had gone down and the sun had set, it was his custom to sit on a bench before his door, tasting that grateful weariness which is the reward of heavy labor and of a hot day’s work. Before he sent home his apprentices, he would drink several deep glasses of cool beer with them, while he watched the workers coming out of the factories. But that evening the good blacksmith remained at his forge until it was time for his supper, and even then he went as if he regretted to leave. As his old wife looked at him, she thought. “What can have happened to him? Can he have received bad news from the regiment and be hiding it from me? Perhaps the older of the boys is sick—” But she dared not question him, and has busied herself quieting three little tow-headed rascals, brown as ears of parched corn, who were laughing around the table as they crunched their good salad of black radishes and cream.</p>	<p style="text-align: center;">→</p> <p>في ذلك المساء لم يكن الحداد الكبير، لوري من سانت ماري أوكس ماينز، سعيداً. عندما كانت النار سميتي قد ذهب إلى أسفل والشمس قد غربت، كان من عادته للجلوس على مقاعد البدلاء قبل بابيه، تذوق أن التعب ممتنة التي هي مكافاه العمل الشاق والعمل يوم حار. قبل أن يرسل إلى المنزل المتدربين له، وقال انه شرب عدة أكواب عميقة من البيرة بارده معهم، في حين انه شاهد العمال يخرجون من المصانع. ولكن في ذلك المساء بقي الحداد الجيد في تزييفه حتى حان الوقت لتناول العشاء، وحتى ذلك الحين ذهب كما لو أنه ندم على المغادرة. كما نظرت زوجته القديمة في وجهه، وقالت انها تعتقد. “ماذا يمكن أن يحدث له؟ هل يمكن أن يكون قد تلقى أخباراً سيئة من الفوج ويخفيها عني؟ ربما كبار السن من الأولاد مريض - لكنها تجرأت على عدم استجوابه، وقد اشغلت نفسها تهدئة ثلاثة ثلاثة الأوغاد سحب قليلاً، البني كما آدان الزره الزايدة، الذين كانوا يضحكون حول الطاولة وهم يطحنون سلطة جيدة من الفجل الأسود والفتشده.</p>
--	--

Snapshot 5. A polysemy, syntactic ambiguity, and metaphor errors made by Memsorce in *The Bad Zouave*

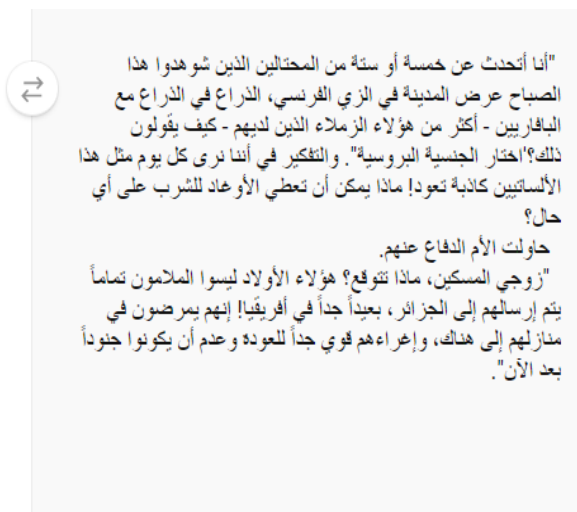
The snapshot (6) below is an example of some of the errors made by Memsorce when translating *The Bad Zouave*. The first one is related to the figurative usage of some language items. In the third line, the protagonist informed his wife that was totally embittered because of the national traitors who helped the German colonizers and walking arm in arm with them. MemSource translated “arm in arm” as “الزراع في الزراع مع البافاريين”, a mere literal translation that failed to convey the message to the receiver as the latter did not manage to conceive the relationship between the national traitors and the Bavarians, the German colonizers. Therefore, it will be quite appropriate if it is translated as “المتعاونين مع البافاريين”.

Another mistranslation error related to the figurative use of the language item can be noticed in the same excerpt when the protagonist’s wife attempted to defend the soldiers sent unwillingly to Algeria, claiming that they got home back with much homesickness. Memsorce literally construed the word “homesickness” into Arabic. It should have been transposed as “و يشعرون بالحنين إلى الوطن و هم هناك”.

"I am talking of five or six scamps who were seen this morning parading the town in their French uniforms, arm in arm with the Bavarians—more of those fellows who have—how do they say it?—'chosen Prussian citizenship.' And to think that every day we seeing such false Alsatians come back! What can they have given the scoundrels to drink anyway?"

The mother tried to defend them.

"My poor husband, what do you expect? Those boys are not entirely to blame. They are sent to Algeria, so far away in Africa! They get homesick out there, and their temptation is very strong to come back and not be soldiers any longer."



Snapshot 6. Errors related to the figurative usage of the language made by Memsources in *The Bad Zouave*

6. Discussion

As for the first research question, the errors made by MT and HT in *the Siege of Berlin* and *the Bad Zouave* fell into six groups in terms of the type of error. The first group comprises the errors related to polysemy. For example, the verb "to get" can mean "procure" (e.g. I'll get the tickets), "become" (e.g. He got terrified), "understand" (e.g. I got what you say) etc. In the linear or vertical polysemy, one sense of a lexical item is a subset of the other (Abdulaal, 2019; 2020; Abdulaal & Abuslema, 2020; Recanati, 2017). The second group comprises the errors attributed to homonymy. In linguistics, homonyms are words that are homographs or homophones, or both. That is to say, they have identical spelling and pronunciation, whilst maintaining different meanings. For example, the word "ruler" can mean "a scale" and "a governor".

The third group comprises the errors related to syntactic ambiguity, sometimes called structural ambiguity, or amphiboly or amphibology. It is a situation in which a sentence may be interpreted in more than one way because of the ambiguous sentence structure (e.g. Visiting doctors can cause problems) (Kweon, 2015; López-Astorga, 2020; Sánchez, 1995). The fourth group is hedges, linguistic devices used by the speakers and writers to signal probability and caution versus full certainty. Hedges are of four categories: quality (e.g. I think, I believe, I assume), quantity (e.g. roughly, more or less, approximately), relevance (e.g. this may not be relevant but), and manner (e.g. to put it more simply). The fifth group is synonyms, words with similar meanings and are interchangeable (Doherty, 2002; Eynard, Mazzola, & Dattolo, 2012). The final group is the metaphors and symbols which can be handled in three different ways: formal equivalence, functional equivalence, and ideational equivalence (Cheetham, 2016; Bahameed, 2020; Abualadas, 2020; Zibin & Hamdan, 2019).

As for the second research question, to strike a comparison between the errors made by MT and HT when translating a literary text, four MT websites (i.e. Translate Dict, Yandex, Mem Source, and Reverso) have been used to construe *The Siege of Berlin* and *The Bad Zouave*, then the four translations are compared to an HT submitted by Hassouna (2018). The aspects of comparison involved six sources of problems mentioned above: polysemy, homonymy, syntactical ambiguities, fuzzy hedges, synonyms, metaphors and symbols.

As shown in tables (1) and (2), Yandex has dealt with polysemy much better than HT in *The Siege of Berlin*, but the opposite has been noticed in *The Bad Zouave*. The researcher attributed this to the types of polysemy used in each of the literary texts. In the former literary text only regular polysemy was used, but in the latter literary work two types of polysemy were employed: regular and irregular.

The regular polysemy means that the lexical items have systematic relationships, such as ‘girl’ and ‘girlfriend’. Irregular polysemy, on the other hand, implies no systematic relationships between the meanings of the lexical items. This finding is in consistency with Kitova and Aprelikova (2019) who examined the efficiency of Yandex in translating polysemous words from English to French, revealing that Yandex proved efficient when construing regular polysemy at a rate of 65% and proved terribly infirm with irregular polysemy at a rate of 7.5%.

HT has excelled all MT systems in homonymy in *The Siege of Berlin* and *The Bad Zouave*. This result is in agreement with Ward (2009) that pointed out the homonymy is recognized as a language universal. It generates lexical vagueness in that a single lexical item has two or more distinct meanings. Such a kind of ambiguity requires a professional human rather than a machine translation system to deal with. The researcher attributed this finding to the complexity of the nature of homonyms (i.e. two words which are identical phonetically or graphically but have an essential difference in lexical or grammatical meanings).

Again HT has shown much efficiency in dealing with the syntactic ambiguities in *The Siege of Berlin* and *The Bad Zouave*. This finding goes with Shin (2016), Lazebna (2019), and Longland (1986) that contended the weakness of Google translate when construing sentences involving syntactic vagueness from Portuguese to English, rated less than 4.94%. The researcher believes that this finding is attributed to the human ability that can distinguish between lexical ambiguity and syntactic ambiguity. The former implies the presence of two meanings within a single word, whereas the latter implies the presence of two meanings within the same sentence.

As for the third research question, it is noticed that both MT and HT have dealt with fuzzy hedges at similar rates with little supremacy on the part of Reverso. This result is in agreement with Jinseok (2008) and Vychodil (2012) that pointed out that Reverso has construed some fuzzy hedges, such as ‘quite’, ‘more or less’ and ‘slightly with perfect rates reaching 72.7% in some cases.

Mem source and Translate Dict have dealt with synonyms in the two literary texts much better than HT. This result is in agreement with Brueton (2020) that reported many synonym-related problems in Daniel Simon’s translation of Abdallah Taia’s *Turning Thirty* from Arabic to English. The researcher believes that the human insufficiency in translating synonyms is related to the nature of the Arabic language that is marked by the abundance of closely related synonyms, for example, /jæfra/, /jæbda?/ and /jestahl/ are synonyms of the word ‘start’.

In *The Siege of Berlin* and *The Bad Zouave*, HT, Translate Dict, and Mem Source have attempted metaphors and symbols with the same qualified standards, excelling the rest of MT methods (i.e. Yandex and Reverso). This result is in agreement with Macken, Prou, and Tezcan (2020) that reported the human supremacy in translating metaphors and symbols between Spanish and French. The researcher believes that the poetic nature of the Arabic language which is derived from the Holy Quran facilitates the translator’s task when construing metaphorical messages.

As for the third research question (i.e. Which one of the translation applications scored the lowest number of errors?), it seems that Mem Source came second to HT in construing both *The Siege of Berlin* and *The Bad Zouave*, with $\mu = 9.8$ and $SD = 3.1$ in the former and $\mu = 10.8$ and $SD = 5.4$ in the latter. This result is in consistency with Shore (2005) that enlisted Mem Source as one of the best seven translation applications that can be used in translating anthropological and cultural texts.

7. Conclusion

Taking the aforementioned results into account, it is worth fundamentally featuring that despite the errors made by machine translation systems, they should not be wholly underrated or disparaged in translation classes. It should be taken into account that not all machine translators have the ability to

construe challenging literary texts. The inference here is that EFL translation learners using MT technologies, such as Translate Dict, Reverso, Mem Source, and Yandex should be aware of the errors related to polysemy, lexical ambiguities, metaphors, and symbols. They should be aware of the fact that in spite of the advantageousness of MT systems, their inadequacies should not be overlooked and handled with post-editing.

Acknowledgments

I'd like to thank Prince Sattam Bin Abdulaziz University in the Kingdom of Saudi Arabia alongside its Deanship of Scientific Research, for all the technical support it has provided towards the fulfilment of the current research project.

References

- Abdi, A., & Cavus, N. (2019). Developing an electronic device to teach english as a foreign language: Educational toy for pre-kindergarten children. *International Journal of Emerging Technologies in Learning (iJET)*, 14(22), 29-44. <https://doi.org/10.3991/ijet.v14i22.11747>
- Abdulaal, M. A. A. D. (2020). A Diagnostic Chomskian View to Arabic Asymmetry. *Arab World English Journal*, 11(2), 168-186. <https://dx.doi.org/10.24093/awej/vol11no2.12>
- Abdulaal, M. A. A. D. (2019). Polysemes and Synonym Language Stock: Linguistic Evidence from English to Arabic Translation. *Wadi-nil for Humanities and Social and Educational studies*, 23(23), 109–132. <https://doi.org/10.21608/jwadi.2019.85114>
- Abdulaal, M., & Abuslema, N. (2020). Spontaneity of Speech Errors: A Diagnostic Psycholinguistic Case Study. *International Journal of English Linguistics*, 10(3), 92-107. <https://dx.doi.org/10.5539/ijel.v10n3p92>.
- Abualadas, O. A. (2020). Optional Shifts in Existential Presupposition in Two Arabic Translations of A Farewell to Arms: A Shift into a More Narratorial Involvement and an Approximated Reader. *International Journal of Arabic-English Studies*, 20(1), 125-142. <https://doi.org/10.33806/ijaes2000.20.1.7>
- Absolon, J. (2019). Human Translator 4.0: The ultimate guide to Machine Translation for a modern translator. ASAP-translation.com.
- Babelyuk, O. (2017). Culture strategy in translating postmodern literary text. *Scientific Journal of Polonia University*, 22(3), 23-26. <https://doi.org/10.23856/2202>
- Bahameed, A. S. (2020). Abu Bakr Salem's Saudi-Hadhrami Songs in Translation. *International Journal of Arabic-English Studies*, 20(2), 241-256. <https://doi.org/10.33806/ijaes2000.20.2.13>
- Banks, D. (2020). Discussion of “Machine learning applications in non- life insurance”. *Applied Stochastic Models in Business and Industry*, 36(4), 538-540. <https://doi.org/10.1002/asmb.2537>.
- Bachleitner, N. (2019). Clive Scott: The Work of Literary Translation. Cambridge: Cambridge University Press, 2018. *Archiv Für Das Studium Der Neueren Sprachen Und Literaturen*, 2, 23–58. <https://doi.org/10.37307/j.1866-5381.2019.02.12>
- Basal, A. (2017). Learning collocations: Effects of online tools on teaching English adjective-noun collocations. *British Journal of Educational Technology*, 50(1), 342–356. <https://doi.org/10.1111/bjet.12562>

- Bhattacharyya, P. (2015). *Machine Translation* (1st ed.). Chapman and Hall/CRC.
- Brueton, J. (2020). Abdallah Taïa's literary palimpsests. *RELIEF - Revue Électronique de Littérature Française*, 14(1), 49. <https://doi.org/10.18352/relief.1066>
- Carter, S., & Christof, M. (2011). Syntactic discriminative language model rerankers for statistical machine translation. *Machine Translation*, 25(4), 317-339. <https://doi.org/10.1007/s10590-011-9108-7>
- Chaeruman, U. (2019). Merancang Model Blended Learning Designing Blended Learning Model. *Jurnal Teknodik*, 17(4), 053. <https://doi.org/10.32550/teknodik.v17i4.577>
- Chan, S. (2018). *The Human Factor in Machine Translation*. Taylor & Francis
- Cheetham, D. (2016). Literary translation and conceptual metaphors: From movement to performance. *Translation Studies*, 9(3), 241–255. <https://doi.org/10.1080/14781700.2016.1180543>
- Crisp, S., & Bryan H. (2011). Computers as Translators: Translation or Treason?. *The Bible Translator*, 62(2), 59–60. <https://doi.org/10.1177/026009351106200201>
- Church, K., & Eduard, H. (1993). Good applications for crummy machine translation. *Machine Translation*, 8(4), 239–258. <https://doi.org/10.1007/bf00981759>
- Daudet, A. (2004). *The Siege of Berlin and Other Stories*. Kessinger Publishing, LLC.
- Daudet, A. (2018). *حصار برلين وقصص أخرى*. (Hassouna, Trans.). Jordan: Dar Alsadeeq Publishing and Distribution (Original work published 2004).
- Doherty, M. (2002). Synonyms, homonyms and false beliefs: a reply to Garnham, Brooks, Garnham and Ostefeld. *Developmental Science*, 5(1), 84–85. <https://doi.org/10.1111/1467-7687.00212>
- Dron, J., & Anderson, J. (2016). The Future of E-learning. In Haythornthwaite, C.; Andrews, R.; Fransman, J. & Meyers, E. (Eds.), *The SAGE Handbook of E-learning Research Second Edition*. Sage. <https://doi.org/10.4135/9781473955011.n1>
- Eley, C., Young, V., Hayes, C., & Cliodna A. (2019). Evaluation of an e-learning platform for educators to improve education around infection prevention and antibiotics. *Technology Pedagogy and Education*, 5, 1-17. <https://doi.org/10.1080/1475939X.2019.1634138>
- Erwen, Z., & Wenming, Z. (2013). Application of Computer-Aided Translation Technology in Translation Teaching. *International Journal of Emerging Technologies in Learning (iJET)*, 8(5), 15. <https://doi.org/10.3991/ijet.v8i5.2926>
- Eynard, D., Mazzola, L., & Dattolo, A. (2012). Exploiting tag similarities to discover synonyms and homonyms in folksonomies. *Software: Practice and Experience*, 43(12), 1437–1457. <https://doi.org/10.1002/spe.2150>
- Garrison, D., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education model. *The Internet and Higher Education*, 2(2-3), 87-105. [https://doi.org/10.1016/s1096-7516\(00\)00016-6](https://doi.org/10.1016/s1096-7516(00)00016-6)
- Haque, R., Hasanuzzaman, M., & Way, A. (2020). Analyzing terminology translation errors in statistical and neural machine translation. *Machine Translation*, 21–44. <https://doi.org/10.1007/s10590-020-09251-z>
- Hardmeier, C. (2015). On Statistical Machine Translation and Translation Theory. *Proceedings of the Second Workshop on Discourse in Machine Translation*. <https://doi.org/10.18653/v1/w15-2522>

- Huang, S., & Knight, K. (2019). *Machine Translation: 15th China Conference, CCMT 2019, Nanchang, China, September 27–29, 2019, Revised Selected Papers (Communications in Computer and Information Science)* (1st ed. 2019 ed.). Springer.
- Jiang, J., Qin, Y., & Sun, Y. (2016). Constructing Automated Scoring Model for Human Translation with Multidisciplinary Technologies. *International Journal of Emerging Technologies in Learning (iJET)*, 11(02), 57. <https://doi.org/10.3991/ijet.v11i02.5137>
- Jinseok, K. (2008). On hedges in English addresses. *Korean Journal of Linguistics*, 33(1), 21–42. <https://doi.org/10.18855/lisoko.2008.33.1.002>
- Kitova, J., & Aprelikova, N. (2019). Yandex Users' Needs in Knowledge on Psychology. *RUDN Journal of Psychology and Pedagogics*, 16(4), 618–633. <https://doi.org/10.22363/2313-1683-2019-16-4-618-633>
- Koehn, P. (2010). *Statistical Machine Translation* (1st ed.). Cambridge University Press.
- Koehn, P. (2020). *Neural Machine Translation*. Cambridge University Press.
- Kweon, S. (2015). Lexical Sensitivity in Processing Syntactic Ambiguity by Korean Learners of English. *Korean Journal of Applied Linguistics*, 31(4), 79. <https://doi.org/10.17154/kjal.2015.12.31.4.79>
- Lazebna, N. (2019). Semantic ambiguity of urbanistic terminology (Ukrainian-English Google translate vs human translation). *Nova Filologîa*, 76, 61–65. <https://doi.org/10.26661/2414-1135/2019-76-11>
- Longland, J. R. (1986). Three Portuguese Poets in Self-translation. *Translation Review*, 21(1), 21–26. <https://doi.org/10.1080/07374836.1986.10523385>
- Lopez, J. (2007). Notes on Metaphors, Notes as Metaphors. *Science Communication*, 29(1), 7–34. <https://doi.org/10.1177/1075547007305165>
- López-Astorga, M. (2020). Semantic ambiguity does not imply syntactic ambiguity. *Argumentos - Revista de Filosofía*, 23, 7–13. <https://doi.org/10.36517/argumentos.23.1>
- Lyons, S. (2020). A review of Thai–English machine translation. *Machine Translation*, 34(2), 197–230. <https://doi.org/10.1007/s10590-020-09248-8>
- Macken, L., Prou, D., & Tezcan, A. (2020). Quantifying the Effect of Machine Translation in a High-Quality Human Translation Production Process. *Informatics*, 7(2), 12. <https://doi.org/10.3390/informatics7020012>
- Nelson, B. (2019). The Work of Literary Translation. By Clive Scott. *French Studies*, 73(3), 507. <https://doi.org/10.1093/fs/knz099>
- O'Brien, S. (2012). Translation as human–computer interaction. *Translation spaces*, 1(1), 101–122. <https://doi.org/10.1075/ts.1.05obr>
- Poibeau, T. (2017). *Machine translation*. Cambridge, MA: The MIT Press.
- Prahl, B., & Petzolt, S. (1997). 'Translation problems and translation strategies involved in human and machine translation: Empirical studies'. *Machine Translation and Translation Theory*. <https://doi.org/10.1515/9783110802474.123>
- Recanati, F. (2017). Contextualism and Polysemy. *Dialectica*, 71(3), 379–397. <https://doi.org/10.1111/1746-8361.12179>

- Rutkowski, S. (2012). *Machine Translation evaluation: an analysis of two translations produced by Google Translate and English Translator XT*. LAMBERT Academic Publishing.
- Sánchez, R. (1995). Syntactic ambiguity as a device in British humor. *Revista Alicantina de Estudios Ingleses*, 8, 209–228. <https://doi.org/10.14198/raei.1995.8.18>
- Shang, W. (2016). Construction and Application of WeChat Learning Platform in Folk Literature Teaching. *International Journal of Emerging Technologies in Learning (iJET)*, 11(05), 10-15. <https://doi.org/10.3991/ijet.v11i05.5688>
- Shin, J. (2016). Prosodic Resolution of Syntactic Ambiguities in Second Language: Evidence from Korean Learners of English. *English Language and Linguistics*, 22(3), 213–234. <https://doi.org/10.17960/ell.2016.22.3.010>
- Shore, C. (2005). All in the Translation: Interpreting the Constitution. *Sites: A Journal of Social Anthropology and Cultural Studies*, 2(2), 10–32. <https://doi.org/10.11157/sites-vol2iss2id62>
- Trujillo, A. (1999). Translation Engines: Techniques for Machine Translation. *Applied Computing*. <https://doi.org/10.1007/978-1-4471-0587-9>
- Venuti, L. (2017). *Teaching translation: Programs, courses, pedagogies*. London: Routledge, Taylor & Francis Group.
- Vychodil, V. (2012). On terminological issues regarding linguistic hedges. *International Journal of General Systems*, 41(5), 533–536. <https://doi.org/10.1080/03081079.2012.686979>
- Wang, Y., Shang, H., & Briody, P. (2013). Exploring the impact of using automated writing evaluation in English as a foreign language university students' writing. *Computer Assisted Language Learning*, 26(3), 234-257. <https://doi.org/10.1080/09588221.2012.655300>
- Ward, J. (2009). Aristotelian Homonymy. *Philosophy Compass*, 4(3), 575–585. <https://doi.org/10.1111/j.1747-9991.2009.00211.x>
- Washbourne, K. (2014). The outer limits of otherness: Ideologies of human translation in speculative fiction. *Translation Studies*, 8(3), 284–301. <https://doi.org/10.1080/14781700.2014.931817>
- Wilks, Y. (2009). *Machine translation: Its scope and limits*. New York: Springer.
- Yao, S. (2017). Application of computer-aided translation in English teaching. *International Journal of Emerging Technologies in Learning (iJET)*, 12(8), 105-117. <https://doi.org/10.3991/ijet.v12i08.7145>
- Zibin, A., & Hamdan, J. (2019). The Conceptualization of FEAR through Conceptual Metonymy and Metaphor in Jordanian Arabic. *International Journal of Arabic-English Studies*, 19(2), 243–266. <https://doi.org/10.33806/ijaes2000.19.2.1>

AUTHOR BIODATA

Mohammad Awad Al-Dawoody Abdulaal is an assistant Professor of English Linguistics in the Department of English, College of Science & Humanities, Prince Sattam Bin Abdulaziz University in Kingdom of Saudi Arabia. Further, he is a standing lecturer of English language and linguistics in the Department of English, Faculty of Arts, Port Said University, Egypt. Dr Mohammad Awad Al-Dawoody Abdulaal received his PhD degree in linguistics in 2016 from Suez Canal University, Egypt. His research interests include psycholinguistics, discourse analysis, applied linguistics, and translation.