

## **Machine Translation of Selected Ghazals of Hafiz from Persian into English**

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### Abstract

Neural Machine Translation (NMT) is an end-to-end learning approach for automated translation with the potential to overcome many weaknesses in conventional phrase-based translation systems. However, there are still grey areas that need attention in the field of machine translation, mainly in the context of literary translation and poetic language. This research aims to identify the shortcomings of the NMT in addressing ambiguity and the semantic complexities of poetic expressions that are important in translating literature in a cross-cultural and multilingual context. Furthermore, while human translators struggle to retain naturalness and accuracy in translation, this research aims to identify to what extent machine translation could convey the message in translating literary-based texts from Persian into English. The corpus of this study consists of Forty ghazals from the Divan of Hafiz, which is translated by a computer-assisted translation software, memoQ and then compared to the authentic translation of Hafiz by Henry Wilberforce Clarke. This comparative descriptive study portrayed the challenges and issues related to Hafiz's poems, which demonstrate that the literary touch is lost in MT products.

*Keywords:* Ghazals of Hafiz, Literary Text, Literature, Literary Machine Translation, Machine Translation, Neural Machine Translation, Persian poetry, Translation, Translation Persian to English

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## Introduction

In context of recent improvements in the quality of Neural Machine Translation (NMT) output and the ever-increasing need for literary and poetry translation, this descriptive study reports on an experiment using NMT systems to translate poems of Hafiz. Furthermore, this research examines the applicability of MT for translating the literary-based text as the applicability of MT for literary text has received very little study so far, specifically in English - Persian (Farsi) translation.

Translating literary texts presents an even more challenging problem in Neural Machine Translation (NMT) than other MT tasks because even human translators struggle to retain the naturalness and accuracy in translation of literary texts and poetic languages, especially Hafiz poems which, due to the rich cultural complexity of Hafiz's poetry, most of his poems are untranslatable. Hafiz is by universal consent the supreme master of the art of Persian ghazal - a literary form generally equated with the lyrics (Arberry, 1993). The ghazal is infused with a mysticism that perplexes today's translators when transferring the mystical concepts of Persian ghazals into English.

Machine translation is a significant technology that represents an essential part of natural language processing systems. The quality and number of specialized dictionaries of the software define the efficiency of MT (González-Rubio & Casacuberta, 2014). Various inadequacies of MT inevitably require a multitude of attempts to post-edit the output. Human evaluations of MT are extensive, but these take a huge amount of time and hence are expensive. Therefore, quality estimation is required in order to utilize the total potential of MT suggestions. Machine translation has developed significantly within the short time since statistical approaches became prominent two decades ago (Brown, Pietra, Pietra, & Mercer, 1993). Machine translation is used in industry in order to improve translation productivity, especially for technical texts (Plitt & Masselot, 2010).

Evaluation of MT is a difficult task due to different possible interpretations. There are a few proposed methods to facilitate the evaluation of MT systems because of the challenges inherent with human evaluation. Bilingual Evaluation Understudy (BLEU) is the most widely used automatic evaluation metric to achieve a high correlation with human judgments of quality (Papineni, Roukos, Ward, & Zhu, 2002). Doddington(2002) proposed the NIST metric based on IBM work.

Human translation is usually a costly and time-consuming method. There are not enough qualified translators, while the need for translation throughput has steadily increased. To mitigate this dilemma, computers and computer technology need to be relied upon to facilitate the computerized translation of extensive numbers of documents. Professional translators may post-edit automatic translation for an accurate translation (Alabau, Sanchis, & Casacuberta, 2014). Modern MT systems are still not capable of delivering high-quality translation without human translator intervention. The human translator must edit the output of MT and translation software to improve the quality of translation. MT systems require an interactive translation process between humans and technology. Human translators use computer software in order to facilitate and accelerate the translation process (Barrachina *et al*, 2009). Frederking and Nirenburg, (1994) measured MT errors when post-editing MT output based on the number of keystrokes to convert the system output into a "canonical" human translation Knight and Chander,(1994) tried to improve MT performance based on automatic post-editing algorithms. Post-editing measures have been demonstrated to be useful for evaluating summaries on news articles (Mani *et al.*, 2002). Post-editing evaluation has also been shown effective for Natural Language Generation (NLG)

and MT systems (Sripada, Reiter, & Hawizy, 2004). An optimal automatic accuracy measure is preferred for rapid feedback and reliability while developing MT systems. Human-based evaluation fails in the aspect of memory and time and has mostly been replaced by purely automatic MT evaluations

The significance of this study is three-fold. Technology keeps advancing and with it comes the growing demand to meet the needs of different subtitling companies; consequently, subtitlers are now being asked to work with MT to produce more subtitles in less time. The use of technology in underrepresented languages as undertaken in this study will provide new avenues for MT use in subtitling replication for a variety of other underrepresented languages.

MT of the literary-based text is different from the MT of other content. As Way(2013) states, “the degree of human involvement required in a particular translation scenario will depend on the purpose, value and shelf-life of the content” (p. 1 ). Therefore, the post-editing of subtitles of movies based on literary works will be very different from other content or genre because the subtitle faces many constraints such as time, space, textual, formal, linguistic, semiotic and iconic and socio-cultural constraints. This project may provide some insightful findings to optimally use MT in addressing the culturally loaded subtitles that may pose difficulties or capture less of the near-native understanding of the source movie. More Subtitle (Post-) Editor roles are being advertised, particularly using underrepresented languages, but without evidence of increased productivity and equivalent quality compared to a non-MT subtitling workflow.

Despite increasing attention on NMT research most of the research done in this field centers on the European scene; NMT of the Persian language is only recently being exploited. There is very limited data available in the form of bilingual corpora. The interdisciplinary aspect of the study is identified in the use of two languages, the presence of a cross-cultural society, and use of several technical elements within the study.

### Literature Review

European projects such as eTITLE (Melero, Oliver and Badia, 2006) and SUMAT (Pozo *et al*, 2013, p. 11) have investigated MT and post-editing in the process of translating audio-visual products, focusing on subtitles. The SUMAT project studied viable MT solutions for the subtitling industry in nine bidirectional language pairs. A large-scale evaluation of the output of the MT engines was carried out by trained subtitlers as part of this project (Bywood, Georgakopoulou & Etchegoyhen, 2017). SUMAT focused on European languages (Pozo *et al*, 2013). Likewise, Ortiz-Boix and Matamala (2016) investigated post-editing effort in translating an English-language wildlife documentary film into Spanish (Ortiz-Boix & Matamala, 2016). Another study by Volk, Sennrich, Hardmeier and Tidstrom (2010) and colleagues employed SMT systems for TV subtitles and built translation systems for Danish, English, Norwegian and Swedish languages (Volk, Sennrich, Hardmeier & Tidstrom, 2010). The study sketched the text genre characteristics of TV subtitles and demonstrated that SMT of subtitles leads to production-quality translations when the input is a large high-quality parallel corpus (Volk *et al*, 2010).

### Neural Machine Translation

NMT is a contemporary approach to machine translation (MT) and has surpassed other MT technologies used over the past two decades. NMT is an end-to-end learning approach for automated translation, with the potential to overcome many of the weaknesses of conventional

phrase-based translation systems (Wu, Schuster, Chen, Le, & Norouzi, 2016). Early NMT systems were developed with Recurrent Neural Network (RNN)-based models for variable segment length which predicted a target word based on the context associated with source and previously generated target words (Bahdanau *et al*, 2014). Long Short Term Memory (LSTM)-based neural network architecture was a significant improvement over traditional RNN based architecture and has been used in many general NLP tasks including NMT (Olah, 2015). Current state-of-art NMT systems are being developed with newer architectures in the field of deep learning such as transformer models (Vaswani *et al*, 2017). Recent advances in NMT with newer architectures are going to have a significant impact on all fields of work which use NMT in their data analysis pipeline. The field of NMT subtitle post-editing will also be significantly impacted.

Unlike traditional SMT, NMT builds and trains a single, large neural network that reads a sentence and outputs a correct translation (Bahdanau, Cho, & Bengio, 2014). NMT achieved state-of-the-art performances in large-scale translation tasks such as from English to French (Luong, Sutskever, Le, Vinyals, & Zaremba, 2015) and English to German (Jean, Cho, Memisevic, & Bengio, 2015). NMT has shown higher accuracy than SMT (Bentivogli, Bisazza, Cettolo, & Federico, 2016; Toral & Sánchez-Cartagena, 2017). Wu *et al.*, 2016) studied the implementation of Google's NMT (GNMT) system, including all the techniques that are critical to its accuracy, speed, and robustness. The result of their study shows that our GNMT system approaches the accuracy achieved by average bilingual human translators on some of our test sets. The GNMT system, when compared to the previous phrase-based production system, delivers roughly a 60% reduction in translation errors on several popular language pairs (Wu *et al.*, 2016). Pestov(2018) also states that NMT contains 50% fewer word order mistakes, 17% fewer lexical mistakes, and 19% fewer grammar mistakes.

Passban,(2017) used neural networks to address the challenges of MT of morphologically rich languages and proposed methods by which deep neural networks can improve SMT in Czech, Farsi, German, Russian, and Turkish languages. He incorporated morphological information into MT and defined architectures which can model the complex nature of morphologically rich languages).

### Post-Editing of Machine Translation

Veale and Way (1997) define post-editing as "a term used for the correction of MT output by human linguists/editors"(p,) and, hence, "the task of the post-editor is to edit, modify and/or correct pre-translated text"(p.) (Allen, 2001). Post-editing can be carried out on two different levels: minimal or light, and full and, depending on the level of post-editing used, different levels of post-editing efforts are required (Allen, 2001). Nowadays, post-editing has been a key research issue of many scholars (Krings & Koby, 2001; Moorkens, 2018; O'Brien, 2004, 2005, 2006) via a variety of methods that compare post-editing efforts and translation work in order to determine the most productive method. These studies show that post-editing of MT output requires less time and effort than translation from scratch. Sousa *et al.* conducted research to automatically predict post-editing effort by comparing sentences that were predicted to have good or average quality (Sousa, Aziz, & Specia, 2011). Krings and Koby categorized post-editing efforts into three types: temporal, technical and cognitive (Krings & Koby, 2001). The 'temporal effort' is understood as the time taken to post-edit a document, 'technical effort' refers to the number of keystrokes, mouse

movements and clicks, and ‘cognitive effort’ applies to “the extent and type of cognitive processes that must be activated to remedy a deficiency in the MT output” (Krings & Shreve, 2001).

Certain shortcomings in current NMT systems have been identified by various researchers in the field of MT. The shortcomings of NMT systems impact post-editing as it demands further time and effort to achieve optimal results. Borrowing from Toral et al., (2018) and Castilho *et al.* (2019), various inadequacies include, but are not limited to:

- i. retaining the fluency and reading experience while translating
- ii. retaining the linguistic and extra-linguistic features that are important in translating in a cross-cultural and multilingual context
- iii. as in many research areas and applications that involve professional translators, experiments with PE, especially with the recent NMT paradigm, have limitations such as small sample sizes, time constraints, and ecological validity (e.g. tools used in the research may not be the same as those used by translators in production).

This research aims to identify the shortcomings of Neural Machine Translation (NMT) in addressing non-linguistic and paralinguistic features that are important in translating literary texts in a cross-cultural and multilingual context. Many articles have been written about the applicability of machine translation in literary translation; however, there are still grey areas that need attention in the field of translation technology, mainly in the literary context. This study, therefore, aims to answer the following research questions.

Q1: Is MT doomed incapable of translating selected ghazals of Hafiz from Persian to English?

Q2: To what extent MT could convey the message into English in translating selected ghazals of Hafiz?

## Method

The corpus of this descriptive qualitative study includes forty Ghazals from the Divan of Hafiz, which is translated by memoQ and then compared to the authentic translations of Hafiz by Henry Wilberforce Clarke and NMT translation output is evaluated and ranked based on NAATI Certified Translator Test Assessment Rubric. This rubric is a descriptive marking scheme describing a candidate's performance levels in the translation certification test based on a five-band rating scale. The data collection involves the following stages: The reason for relevance among current available rubrics are the competency and proficiency skills of the translators.

Forty ghazals (each ghazal consists of five to fifteen couplets) from the Divan of Hafiz (by Khwāja Shams-ud-Dīn Muḥammad Ḥāfeẓ-e Shīrāzī, known by his pen name Hafiz) encompass the corpus of this study which is translated by memoQ and then compared to the authentic translation of Hafiz by Henry Wilberforce Clarke. Henry Wilberforce Clarke (1840–1905) was a translator of Persian literature, Saadi, Hafiz, Nizami and Suhrawardi. Over the years and due to the familiarity of writers, orientalist, and lovers of Oriental culture, many translations of Hafiz's poetry have been done; unfortunately, perhaps due to the theological complexities, different literary concepts, and sophisticated mystical meanings of Hafiz's poems, for many translators, despite their valuable efforts, have not been able to convert the closest meaning and may have had difficulty understanding Hafiz's Persian poetry. Among these, Henry Wilberforce Clarke's translation is one of the popular translations of Hafiz's poetry in terms of its relevance and

introduction to non-Persian readers. His translation, published in 1891, has many semantic and content mistranslations; therefore, the researcher has used the version compiled and corrected by Dr. Behrouz Homayoun Far, published in 2001. The randomly selected Ghazals from Divan of Hafiz include Ghazal 1, 13, 35, 39, 41, 44, 47, 52, 56, 59, 73, 75, 76, 83, 87, 88, 91, 94, 97, 101, 113, 115, 118, 120, 124, 126, 135, 138, 144, 146, 147, 150, 157, 161, 170, 174, 182, 188, 192, and 198.

The memoQ software will be used in this study. The study is limited to the poetry translation of Persian into English. memoQ offers technical services for translation and localization. memoQ also has Neural Machine Translation systems.

NAATI Certified Translator Test rubric (Figure 1) is used in this study, which evaluates the translated text according to transfer competency and language competency factors. NAATI rubric describes performance levels using a five-band rating scale where Band 1 represents the highest level of translation quality and Band 5 represents the lowest. Since the researcher is a native Farsi speaker with more than 15 years of experience translating various texts, including literary texts, the evaluation of each Ghazal translated by MT is not only based on the rubric, but also the judgment and assessment of the researcher as a top-rated translator and translation instructor.

	TRANSFER COMPETENCY			LANGUAGE COMPETENCY
	A: Meaning transfer skill	B: Follow translation brief	C: Application of textual norms and conventions	D: Language proficiency enabling meaning transfer (Target language - LQTE or English)
<b>Pass Requirements</b>	<b>At least Band 2.</b>	<b>You must achieve at least Band 2 in one of these two criteria, and at least Band 3 in the other.</b>		<b>At least Band 2.</b>
<b>Band 1</b>	Translates the propositional content and intent of the message accurately, with <b>no</b> unjustified omissions, insertions and/or distortions. Demonstrates ability to <b>skillfully</b> resolve all translation problems.	<b>Comprehensively</b> follows the specifications provided in the translation brief. Produces a text which <b>thoroughly</b> takes into account the purpose of the target text, a specified audience and type of communication.	Displays <b>accomplished</b> use of register, style and text structure appropriate to the genre and consistent with the norms and conventions of the target language.	<b>Consistently</b> uses written language competently and idiomatically, in accordance with the norms of the target language. Demonstrates <b>accomplished</b> use of lexis, grammar and syntax, including orthography, punctuation and terminology.
<b>Band 2</b>	Translates the propositional content and intent of the message, with few instances of <b>minor</b> unjustified omissions, insertions and/or distortions. <b>Mostly</b> demonstrates ability to resolve most translation problems appropriately.	Follows the specifications provided in the translation brief, but does not in several instances take into account the purpose of the target text, a specified audience or type of communication.	Demonstrates ability in the use of register, style and text structure appropriate to the genre and <b>mostly</b> consistent with the norms and conventions of the target language.	<b>Mostly</b> uses written language competently and idiomatically, in accordance with the norms of the target language. <b>Mostly</b> demonstrates competent use of lexis, grammar and syntax, including orthography, punctuation and terminology. The target language may contain a few minor errors. The errors in the target text <b>do not impact on understanding</b> .
<b>Band 3</b>	Translates the propositional content and intent of the message, with several <b>minor</b> and/or any <b>major</b> unjustified omissions, insertions and/or distortions. Demonstrates <b>some</b> ability to resolve translation problems appropriately.	Demonstrates <b>some</b> ability to follow the specifications provided in the translation brief, but does not in several instances take into account the purpose of the target text, a specified audience or type of communication.	Demonstrates <b>some</b> ability in the use of register, style and text structure appropriate to the genre and consistent with the norms and conventions of the target language.	Demonstrates <b>some</b> ability to use written language idiomatically, in accordance with the norms of the target language. Demonstrates <b>some</b> ability to use lexis, grammar and syntax, including orthography, punctuation and terminology. and/or The target language contains systemic errors, and/or The target text contains errors which <b>impact on understanding</b> .
<b>Band 4</b>	Demonstrates <b>limited</b> ability to translate the propositional content and intent of the message accurately, with frequent instances of unjustified <b>minor</b> and/or <b>major</b> omissions, insertions and/or distortions. Demonstrates <b>limited</b> ability to resolve translation problems appropriately.	Demonstrates <b>limited</b> ability to follow the specifications provided in the translation brief or take into account the purpose of the target text, a specified audience or type of communication.	Demonstrates <b>limited</b> ability to use register, style and text structure appropriate to the genre and consistent with the norms and conventions of the target language.	Demonstrates <b>limited</b> ability in the use of written language in accordance with the norms of the target language. Demonstrates <b>limited</b> ability to use lexis, grammar and syntax, including orthography, punctuation and terminology. The target text contains frequent errors which <b>impede understanding</b> .
<b>Band 5</b>	<b>No</b> demonstrated ability to translate the propositional content and intent of the message accurately. Excessive instances of unjustified <b>major</b> omissions, insertions and/or distortions. <b>No</b> demonstrated ability to resolve translation problems appropriately.	<b>No</b> demonstrated ability to follow the specifications provided in the translation brief or take into account the purpose of the target text, a specified audience or type of communication.	<b>No</b> demonstrated ability to use register, style and text structure appropriate to the genre and consistent with the norms and conventions of the target language.	<b>No</b> demonstrated ability in the use of written language in accordance with the norms of the target language. The target text contains excessive errors of lexis, grammar and syntax, with many awkward and unidiomatic expressions which <b>prevent understanding</b> .

Figure 1. NAATI Certified Translator Test Assessment Rubric

After reviewing and evaluating the MT's output, the translation of all 40 Ghazals in band 5 (the lowest level) are marked to answer the research questions. This seemingly anomalous result came as no surprise to the researcher. The researcher does not generally consider poetry untranslatable but believes that poetry cannot be translated even with the top translation tools.

## Findings

Carlo Saccone, the translator of Hafez's poems into Italian, talks about the difficulties of translating Hafez's poems in the "study of love from the perspective of mystics and Hafiz" meeting (2013). Omar Khayyam is easy to understand and, from a literary point of view, enjoyable and quick to understand for a wide range of European readers. But Hafez is an entirely different conundrum as he is a poet who is difficult for readers, especially Europeans, to grasp fully. When a translator wants to translate Hafez's poem, he/she faces many challenges and difficulties. Some Italian translators projected that Hafez loved the pleasures of life. In this way, Hafiz joined the group of twentieth-century Italian liberals in the minds of many readers. But it was not long before they realized that Hafiz could not be a vulgar and anti-religious person. A German translator, who studied Hafiz sincerely, made Hafiz's pseudo religiosity known in poetry. Roger Lescot, the French

translator of Persian literary works in the 1940s, argued that Hafez was neither hedonistic nor religious; Rather, he was a royal praiser who was supported by the princes and nobles of the Shiraz royalty. Carlo Saccone says that when he was trying to translate Hafiz's poems, I saw these lines and ideas in front of me. But I soon realized that none of these theories could be considered the key to Hafez's interpretation definitively (Saccone, 2013). For 25 years, this researcher has faithfully followed the project of translating some of Hafiz's Ghazals into Italian and looked at Hafiz's poems from a perspective other translators may not have considered in their translation. Hafiz's translation does not only deal with a set of words, but also requires a more profound and in-depth knowledge of knowing two languages. Although giving grammatical and linguistic information to the machine is possible, the culture and vision of life cannot be programmed in a translating tool.

This comparative descriptive study will portray the specific issues regarding Hafiz's poems that prove that literary touch is lost in MT output.

Table1. *Couplet 6 of Ghazal Hafiz 161*

Original Text	در کار گلاب و گل حکم ازلی این بود کاین شاهد بازاری وان پرده نشین باشد
	/Dar kar golab o gol hokme azali in bood/ /Kin shahed bazari va an parde neshin bashab/
Human Translation	In the matter of rose-water and of the rose, the decree of eternity without beginning was this: "That should be the lovely one of the bazar; and that this should be the sitter behind the veil."
Machine Translation Output	This was the eternal rule in the work of roses and flowers That this is a market witness and that curtain dweller

Hafiz mentioned the eternity of human destiny in various language forms and with different poetic expressions in tens of vases in his divan (Tahmasbi, 2012). From the analysis of the above text, it can be implied that the poet believes that God has determined the fate and destiny of human beings on the Eternal Day, and no change is possible in it. He has created some who love and hope for eternal grace and mercy, and some who have created ascetics, people of goodness, obedience, reliance, and pride in his obedience; in his critical ontological in this Ghazal, Hafez says: Do you not believe that destinies have been determined and your fate has been determined from the beginning? Do you not believe that "fate does not change" and destiny does not change, and the eternal fate cannot be taken away? That is, everything that has been written by destiny will not be realized. Although Henry Wilberforce Clarke translated this beautifully, perhaps if the researcher wanted to translate this sentence, she would certainly put the word "destiny" somewhere. The MT output of this couplet has failed to recreate the beauty and literary sense of this poem. It should be noted that the translation is provided after pre-editing by the researcher; otherwise, it should have been like this:

In the work of roses and flowers, the eternal verdict was that Cain witnessed the curtain bath market.

How would you, as a reader, rate this translation? Did you even feel like reading this poem? According to the NAATI rubric, the researcher ranked it as unacceptable translation or Band 5 as it did not transfer the content of the message accurately.

Table 2. Couplet 10 of Ghazal Hafiz 39

Original Text	غرض ز مسجد و میخانه ام وصال شماست جز این خیال ندارم خدا گواه من است
	/Gharaz ze masjid o meykhaneam vesal shomast/ /Joz in khial nadaram khoda gavahe man ast/
Human Translation	Through the tavern and the Masjed, my desire is union with Thee: Save this, no fancy have I. God is the witness of mine!
Machine Translation Output	The purpose of my mosque and pub is to join you, but I do not think that God is my witness

The reflection of religious issues in Hafez's poetry, like other topics and themes of his poems, contains critical aspects. He doubts and criticizes the Muslimness of the Muslim people of his time, takes his poetic character from the mosque to the tavern to cleanse him of the stigma of hypocrisy and lies, and leads him to honesty through drunkenness. In this way, Hafiz challenges and criticizes the mentality of the people of his time towards religion, worship, mosque, heaven, and hell (Khorramshahi, 2006). Although the first line of translation is not unacceptable and at least gives the listener an idea about the original message, a positive sentence is translated negatively in the second line. It does not convey the beauty and sense of literature in any way.

Table 3. Couplet 6 of Ghazal Hafiz 126

Original Text	ای دل طریق رندی از محتسب بیاموز مست است و در حق او کس این گمان ندارد
	/Ey del tarigh rendi az mohtasab biamouz/ /Mast ast o dar haghe o kas in gaman nadarad/
Human Translation	O heart, learn the way of profligates from the Mohtaseb. Being drunken, but on his rightness no one suspects not.
Machine Translation Output	O heart, Randy is drunk through the learned accountant No one thinks about him

Divan Mohtaseb or Ehtesab has been one of the ministries of the Iranian administrative system since the Samanid period. The ministry was responsible for monitoring the market, buying and selling goods of peasants and artisans, and preventing the sale and purchase of fake goods. Gradually, in the later period, maintaining security and peace was also assigned to Divan Mohtaseb. The ministry also took care of drinking and dealing with religious affairs, and the person in charge was Mohtaseb (Ravandi, 1980). After Amir Mobarezoddin Mohammad Mozaffari took control of Shiraz, he became strict and prejudiced, broke the bottles of wine, went to congregational prayers on foot, sometimes retaliated against criminals with his own hands in the middle of reciting the Qur'an, and cherished hypocrites, Sufis, and conservative scholars, so the people of Shiraz named him Mohtaseb: Mohtaseb in Divan of Hafiz is next to the ascetic, Sufi, preacher, etc. and the most hated of them all Mohtaseb, like Zahid, has characteristics in Divan of Hafiz through which one can better understand Hafiz's position towards him: Rough, hypocritical, immoral, unforgiving, and fanatical, but Hafiz often ignores him and makes fun of him; humor is used in most of the poems about him. Knowing the meaning of Mohtaseb in this verse helps to better understand the meaning of Hafez, which can be achieved by a footnote or further investigation of the reader. The researcher herself may have chosen the word "sheriff" for

Mohtaseb to clarify it better. However, the word "Mohtaseb," or even the sheriff, is a much better choice than the accountant replaced by MT. Machine translation is not only "interesting" in terms of beauty and being poetic, but it does not even provide the correct meaning of the intent of this poem.

Table 4. Couplet 4 of Ghazal Hafiz, 76

Original Text	زمانه گر بزند آتشم به خرمن عمر بگو بسوز که بر من به برگ کاهی نیست
	/Zamaneh gar bezanad atasham be kharmane omr/ /Begou besooz ke bar man be barg kahi nist/
Human Translation	If, into the harvest of my life, Time cast fire, Say: "Consume; for, equal to a little blade of grass, in my opinion, it is none."
Machine Translation Output	When the fire strikes the harvest of life Say burn that there is no straw on me

In Hafez's time, farmers were not in a good situation, and the distance between farmers and landowners has widened more than ever. The increase in various types of taxes during this period further caused ordinary people to experience increasingly challenging lives. Insecurity, looting, and burning of farmers' fields and crops continued to be common. In his Ghazals, Hafiz has repeatedly addressed issues related to agriculture.

See how irrelevant the MT output is! So, here is another Band 5 translated text.

Table 5. Couplet 1 of Ghazal Hafiz, 120

Original Text	بتي دارم که گرد گل ز سنبل سایه بان دارد بهار عارضش خطی به خون ارغوان دارد
	/Boti daran ke garde gol ze sonbal sayeban darad/ /Bahar arezash khati be khoun arghavan darad/
Human Translation	I have an idol that, the canopy of the hyacinth around the rose hath: A line in the blood of the Arghavan, the spring of his cheek hath.
Machine Translation Output	I have Betty who has a canopy of violets Spring has a complication of purple blood

The importance of metaphor in poetry is so prominent that poetry is usually considered a metaphorical word. The language of metaphors can communicate the emotions and feelings of the poet in a soft and gentle language, far from ordinary logic, which standard language cannot express. A metaphor is more profound and more imaginative, and beautiful than a simile, and evokes the emotions of the audience. Poets and writers use a metaphor, which is one of the main elements of imagination, to create beautiful images. Three beautiful metaphors can be found in this verse. Idol is a metaphor of the beloved/ the lover. The flower is a metaphorical expression of the face of the beloved. Lavender is a metaphor for the beloved's hair. While Henry Wilberforce Clarke's translation is beautiful, it is not poetic, and in the case of machine translation, without taking into account obvious errors, it can be said that it is not poetry at all.

Table 6. Couplet 3 of Ghazal Hafiz, 1

Original Text	مرا در منزل جانان چه امن عیش چون هر دم جرس فریاد میدارد که بر بندید محملها
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	/Mara dar manzel janan che amne eysh chon har dam/ /Jaras faryad midard ke bar bandid mahmelha/
Human Translation	In the stage of the Beloved, mine what ease and pleasure, when momentarily, The beil giveth voice, saying: "Bind ye up the chattels of existence!"
Machine Translation Output	How safe I am in Janan's house like every breath Jaras shouts to close the carriers

Hafez says that there is no time and opportunity for me to have fun and enjoy the moments in my beloved's place because, at any moment, the caravan and camels announce that you should pack your bags and set off. Jaras is a bell that was attached to the neck of the caravan animal and a large bell that the caravaners rang to wake the passengers up. The point of this line is that there are joy and pleasure in the beloved's house, but it does not last, which also refers to the shortness of life.

Here it is worth mentioning that due to the difference in the format of poetry in Persian and English, as well as the different aesthetic views that exist in these two languages, the translation of the poems of prominent Iranian poets, especially Hafiz, faces challenging problems. In fact, Hafez's poetry poses additional difficulty for the translator due to its theological complexities, various literary industries, and high mystical concepts. Hence, despite their valuable efforts, many translators have not been able to provide the translation of poetry in the form of poetry, and we see more translation of poetry in the form of verse than in prose. The first translation of Hafez's poem into English was made by William Jones in the 18th century. His translations are in the form of prosaic and poetic, which is written without rhyme at the end of the verses, an experience that did not exist before. After him, many translators translated Hafez's Ghazals, all of which worked based on direct and semantic translation and tried to convey the poet's meaning by translating word for word or sentence by sentence. In the meantime, the first person to translate all of Hafez's poems in this way was Henry Wilberforce Clarke. He served in the British Army in India and became acquainted with Oriental culture and Persian poetry. In his translations, Wilberforce Clark explained some words and terms that would probably have made it very difficult for the reader to understand the poem without these footnotes. While translation goes beyond words and phrases in the form of poetry and requires an understanding of the poet's culture and perspective and understanding literary devices, how can all of this be machine-programmed and institutionalized?

### Conclusion

While human translators are still struggling to retain the naturalness and accuracy in translation, how will the machine be able to translate classical poetry? Like what Robert Frost once mentioned "Poetry is what gets lost in translation," the researcher finds machine translation of poetic language a near-impossible ambition to achieve.

The translation from and into Persian language is weakly-supported by MT. Traditionally, MT has been primarily used for short-lived documents such as technical manuals, legal documents, and for literary works where there is an extensive corpus of pre-translated works primarily focused on European languages as illustrated in aforementioned SUMAT projects. Hence, these languages

are over-represented and could provide a misleading estimate of MT's literary translation capabilities. A bi-directional translation provides a more accurate evaluation for NMT output as the translator can provide the human input from the viewpoint of comprehending language nuances that MT is unable to detect and process in accordance to context and cultural understanding. This is therefore a necessity for weakly-supported languages by MT that consist within a morphologically rich context with nuances that may not be captured by European researchers.

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