Artificial Intelligence and Literature-The Future of Two Unlikely but Inextricably Connected Areas

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Abstract: Literature has been an indispensable part of human expression. The literature and computer science are not as far from each other as it appears. Artificial Intelligence (AI) is unquestionably evolving and its contribution in the field of literature can be immense. It has been observed by many researchers that AI has the capability to play a critical a key role in literary world, whether it is literary interpretation, or literary criticism. AI-aided translation is one such area of humanities where a lot of developments has been done. Over the years, there has been different forms of literature that has evolved. There was an era when narrative was told though lengthy epic poetry, and there was also a time when novels into prominence. Translation had always played a key role in every era, of connecting two different languages, cultures and literatures. And nowAI could play an important role in breaking the language barrier. This paper is an attempt to understand the relation of literature and AI, and how these two areas in future, can make a different in the academia.

Keywords: Literature, Artificial Intelligence, Human Agency, Translation

I. INTRODUCTION

The society has always been under evolution. From stone and wood to industrialization, electricity and the internet, humanity has seen many changes. This era is an age of development of science and technology. It won't be wrong to say that the primary function of the development of science and technology is to serve humanity. But as Gerd Leonhard in his new book titled 'Technology vs Humanity', says that "The world is entering an era of truly transformative change. Tremendous potential lies in these exponential technological advances, yet with these new opportunities also come tremendous new responsibilities. A combinatory set of 'science and technology enabled megashifts' are coming together that will redraw not only literature, culture and society but also our biology and our lives. An avalanche of technological changes will reshape the very essence of humanity and touch every aspect of life of our planet." (Leonhard 2016).

II. LITERATURE AND TRANSLATION

Literature has been an indispensable part of human expression. Translation has a key role to play in that. It becomes a bridge between different cultural settings. Translation is a medium through which thoughts could cross the barrier oflanguage. Through this medium a piece of literature is able to reach audience faraway from its origin into a new cultural linguistic space. Interestingly, thisprocess of translation also becomes the part of a larger political and culturalconstruct. Translation is a transfer of meaning from a language to another, butalso a transfer of culture and politics. As Bassnett quotes Lefevere Translation is not just a window opened on another world, or some such piousplatitude. Rather, translation is a channel opened, often not without a certain reluctance, through which foreign influences can penetrate the native culture, challenge it and even contribute in subverting it". (Bassnett 1980). Translation cannot be considered as an innocent act. It could be used as astrategy that is consciously employed, either to promote a political ideology or to impede a certain kind of ideology through the manipulation of certain themesand metaphors. State plays an important and decisive role in it. Translator self-censors the text depending on how state censorship would react, and how the subject fits in national discourse and cultural identities of theaudience. In short, the text is contextualized as per the different linguistic-temporal-cultural contexts. Interestingly all this is not there when a machine translates.

The understanding of translation could not just come by analyzing arewritten text, but it comes through the lingua- and socio-cultural aspects whicheffect the translation process. Susan Bassnett has precisely said what translation is all about;

"Writing does not happen in a vacuum, it happens in a context and the process of translating texts from one cultural system into another is not a neutral, innocent, transparent activity. Translation is instead a highly charged, transgressive activity, and the politics of translation and translating deserve much greater attention thanhas been paid in the past" (Bassnett 1980)

III. LITERATURE AND ARTIFICIAL INTELLIGENCE

The term Artificial intelligence, at first sight appears simple, that it is about the intelligence which is demonstrated by computer machines. James Vincent believes that it is a difficult term to define. Ben Coppinalsosays that AI is systems that work in a way that

which is intelligent. It is big term, which covers a lot of computer processes. It is a field of computer science that stresses the creation of such intelligent machines which could work and act just like humans (West 2018). Interestingly, Mani (2012) proposed a new way of thinking, he questions that if algorithms can tell us about the stories which we would love to read. If literature, is carved into computable bits of 'information', then certainly AI can handle it. And then using that information, AI can play an important role in literary interpretation, as well as literary criticism. It is also proposed that algorithms can even derive the meaning from books in just like humans, so it is also possible to say that based on the algorithms, literature can be produced (Mani 2012).

The literature and computer science are not as far from each other as it appears. In a way they are connected to each other. Both are based on language. Mostly the applications of AI, involve sophisticated patterns that are learned by machine. AI is based on data. AI is based on structures and patterns, it is so similar to how language is based on structures and patterns. The structuralist movement of literature is about the readings of a text to see how it functions, and that's what is similar, as AI is also based on close study of structures and patterns.

If we see the AI through a historic background, it largely to solve mathematical problems, games and puzzles. Around 1960s, the system was needed to do more intellectual responsibilities. such as "solving geometric problems, answering questions, creating semantic networks and storing information" (Anand). Another milestone in the history of AI is General Problem Solver (GPS). This GPS was first of its kind approach of thinking like human. It gave an approach to solve problem with the same approach as humans would. The AI which once was solving *kid's* problems, gradually become something that dealt with serious issues.

IV. TRANSLATION AND AI

"One Hour Translation CEO OferShoshan told me that within one to three years, neural machine technology (NMT) translators will carry out more than 50% of the work handled by the \$40 billion market" (Marr 2018)

Artificial intelligence has an interesting role to play in Translation. Although machine translation is a new phenomenon, it appears to be as a challenge to human translation. Any area where quality is essential, it would be unfair to neglect its proficiency and benefits. Benefits as well as constrains of machine translation are equally visible; mechanical translation certainly holds an efficiency value and certain amount of proficiency, but human influence or, to say, human intervention is surely required when it comes to producing satisfactory translation. Vitality of human agency becomes paramount, if precision in translation has to be maintained, therefore check on machine translation, by human agency, becomes of principal interest.

The emergence of cost effective and easily availability of internet has certainly have made online machine translation in the reach of common people. A lot of websites offer translated version, e.g. websites in china have an option to change the language to English. Even internet browsers automatically suggest to translate if they catch that another language is being used, other than the user preferred language, a common example of this, is Facebook where such alerts are very often can be seen. Google Translate, is one of the biggest online-machine translation platform.

V. MACHINE TRANSLATION AND LITERATURE

"AI-aided translation is called machine translation" (AISA 2018)

To understand how the translation through a machine works, few samples have been taken from literature and those are being translated through the google translation. The first sample is taken from the novel, Jene Eyre by Charlotte Brontë, the second one is from To Kill a Mockingbird by Lee and the third one is from Toni Morrison's Beloved. These three gives the idea of the structure and the scope of the machine translation. The fourth 1.4 onwards are the examples from Shakespeare's Hamlet and a comparative study of its google translation as well as Human translation.

1.1.

"There was no possibility of taking a walk that day. We had been wandering, indeed, in the leafless shrubbery an hour in the morning; but since dinner, the cold winter wind had brought with it clouds so sombre, and a rain so penetrating, that further outdoor exercise was now out of the question." (Brontë 1847)

And the google translation was as below;

| "BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB |
|--|
| 00000000000, 0000000000000000000000000 |
| |

1.2

"When he was nearly thirteen, my brother Jem got his arm badly broken at the elbow. When it healed, and Jem's fears of never being able to play football were assuaged, he was seldom self-conscious about his injury. His left arm was somewhat shorter than

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|---|--|
| his right; when he stood or walked, the back of his hand was at right angles to his body, | his thumb parallel to his thigh. He couldn't |
| have cared less, so long as he could pass and punt." (To Kill | a Mockingbird) |
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| " | , |

"Counting on the stillness of her own soul, she had forgotten the other one: the soul of her baby girl. Who would have thought that a little old baby could harbor so much rage? Rutting among the stones under the eyes of the engraver's son was not enough. Not only did she have to live out her years in a house palsied by the baby's fury at having its throat cut, but those ten minutes she spent pressed up against dawn-colored stone studded with star chips, her knees wide open as the grave, were longer than life, more alive, more pulsating than the baby blood that soaked her fingers like oil." (Morrison1987)

| 1.4. |
|--|
| 'Hamlet. Here, thou incestuous, murderous, damned Dane, |
| Drink off this potion! Is thy union here? Follow my mother.' (King dies.) (Original Text) |
| rollow my mother. (King dies.) (Original Text) |
| Google Translation 'DODGOOGLE Translation 'DOGGOOGLE |
| Human Translation |
| ''annonnanananananananananananananananan |
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| |
| 1.5. The climax scene of Hamlet, where the mother has already died. There is a dialog where people say; |
| "Treason! treason!" (Claudius. O, yet defend me, friends! I am but hurt.) |
| The online machine translation is DDDDDDD! DDDDDDDDD! |

.____

Rangeya Raghav translated as

It's being translated by Harivansh Rai Bachchan as

These examples show us an overview of current machine translations. The first translation 1.1 is able to convey the meaning, except in the last line, "that further outdoor exercise was now out of the question" is being translated too literally. Still we can say it is very close. The lines from To Kill a Mockingbird given in 1.2 are simple in nature. Although the translation is a little blurredly and is not able to convey the exact meaning. However, 1.3's translation is such which is confusing. Morrison who expresses the horrors of slavery in her writing, is not being able to be reflected in the translation. 1.4 and 1.5 are written by Shakespeare. If phrases like follow my mother was taught to machine, then more or less the translation would have been able to convey the meaning. 1.5 shows us how even human translation differs from one to other. The same word has been translated differently.

VI. CONCLUSION

AI researcher Eliezer Yudkowsky observed that "By far the greatest danger of Artificial Intelligence, is that people conclude too early that they understand it." It is a vast field, with endless scope. It can be useful in so many areas, and literature is one of it. As discussed above if algorithms are properly created and a clear structure is being given to computer system, AL can play a key role in literary interpretation, as well as literary criticism. These algorithms can certainly tell critical information about reading pattern, and narrative structure. AI's role in translation is something quite evident. Machine Translation is a field which has been extensively used, and its future appears positive. Simon Davies in his article titled 'Artificial Intelligence Is Changing The Translation Industry. But Will It Work?' observed that "AI is breaking the language barrier and AI can be as precise as a human translator in future." (Davies 2018). The only thing that all the scholars suggest is that AI Translation need human intervention, humans who can not only correct the wrong translations but also help to teach AI. Artificial intelligence company 'Unbabel' recently devoted \$23 million of funding for developing machine translation. AI will unquestionably evolve as time goes by, still, human will have an important place in effective implementation. The key in computer science is algorithms and proper instructions, and if we focus on developing in a way which associate with literature, it can certainly change the course of the academia.

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