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Semiotic Perspective on Delimiting AI-Induced Mediamorphosis

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ABSTRACT

Is Semiotics in Artificial Intelligence leading to mediamorphosis? This question is vital because the scholars of artificial intelligence claim that it has the ability to transform the process of communication. This transformation is expected to be very magical as well as mathematical. This practice will question the epistemological assumption that the world is a system of objects. AI has already started processing the speeches, analyzing the faces and reading the texts. Not only this the AI has made it possible that even the programmed machines could report an event. The AI has made it possible to identify the places, building and streets by the machines. Therefore, in media's context Artificial Intelligence in Semiotics is not about dealing with numbers or digits, it is bout encoding even the numbers into symbols. This study hypothesizes that unless the Artificial Intelligence develops itself as a culture it won't have the capability of interpreting the contextual meaning of the signs and symbols. Furthermore, in its existing nature of simulation, AI won't be able to replace natural intelligence because it itself exists as artificial entity. The semiotic approach in true sense can help AI in understanding the reason of interpretation of a phenomenon. And, when this reason is well understood, the researchers will be able to predict whether and to what extent it is capable of creating mediamorphosis? Artificial Intelligence and Semiotics both have mathematics and algorithm at its core and hence they prove to be the bridge between the traditional and digital humanities. But, the application of AI in semiotics has limited to preliminary successes. In solving the complex problems of digital humanities AI is still not that successful. The purpose of integrating Artificial Intelligence with the science and technology was to use and facilitate machines as intelligent entities like human being. Here, the need of bringing the semiotics to AI was felt as the machines had to recognize the patters of recognition matching to human cognitive system. However, in its 70-year long journey, Artificial Intelligence has maintained its own territory, it has helped different disciplines in developing formal logic, patter recognition, programming and analytics and robotics. This study focuses on the use of Artificial Intelligence in Semiotics from the perspective of limitations in using it in development of digital humanities and formal logic.

1. Introduction

This study introduces the concept of Artificial Intelligence from a new perspective to analyze its epistemological grounding from the perspective of its application in mediated communication. It also intends to find out the operational limitations of AI-Induced Mediamorphosis. The epistemology of Semiotics comprises of two elements: the knowledge of how physical beings are believed to be existing and, the knowledge of how the objects are cognized as existing. From here develops the question of rationality, which requires a philosophical explanation. Morphism is a concept that is known for its associability and functionality. In this mathematical concept the objects are basically sets of some additional structures and morphisms are structures, which preserve the functions. Therefore, if source X has to protect the target Y it will have a function f. And this function is known as morphism. This source to target approach is phenomenal in the application of Semiotics in AI in which cultural attributes function as morphism. Unless the semiotics in AI is directed towards protection of a structure, mediamorphism will not be possible. And, here comes the concept of application of Semiotics in formal logic.

2. Artificial Intelligence and Rationality

This inquiry is more of a philosophical understanding of limitations of AI in semiotics. It has been argued by philosophers since long that there are distinctions in the logical interpretation capabilities of human mind and machine that is beyond mathematical computation and algorithm. Intelligent machines are based on the principles of rationality and that is why to some extent these machines have started behaving like humans. The rationality of digital machines has been delimited in the studies of Simon (1971), Papert & Minsky (1973) and Newell (1980). In his study Newell found that AI has distinguished itself from other domains of mathematics and computation as it uses the system of signs and symbols. So AI is beyond using the numbers, it is about encoding even the numbers into symbols. The premise that the intelligence may also be manipulated has resulted in the concept of simulated intelligence. But, the nature of these symbols is very dynamic and hence comprises of set of entities that are difficult to be manipulated. This is the first limitation of using the AI is semiotics. The physical symbols may get manipulated using AI, but physical systems can't process the set of natural symbols that have infinite meanings in different contexts. If a system of symbols is not realizing into accurate meaning, then AI will lead to some kind of stupidity. If the symbol being interpreted is of a type and not of the dynamic one, then the interpretation of the symbol would limit to that particular type of symbol which is having limited instances and meaning.

3. Artificial Intelligence and Value Judgment

Language, legitimacy and logic have contextual relevance. Semiotics of humor and judgment of value neutrality depend on the contextual meaning of these attributes. Context dependency of humor is a complex concept, which could

hardly get solved using Artificial Intelligence. For example, what humor a song has depends upon the context and that context is also not universal. Using stimuli for sensing may be common phenomena but how the senses of individuals of different society mean a message contained in a song can't be the universal phenomena. Using AI machines can think of different situations, but is it possible to map all the situations and code them for computational manipulation. The idea of Roger Schank (1975) and Thomas Kuhlman (1985) provide a good account of analysis of humor for digital humanities. The techniques identified for humor analysis have their own limitations. The techniques identified by Arthur Asa Berger (1995, 2016) are also limited in number and are relevant when analyzed in context of language, logic and action. But these techniques may not suit all the situations. Words and phrases don't have absolute meaning. The combination of words and phrases has different meanings in different contexts and hence development of system for exact interpretation of infinite combinations of words is almost impossible. This is another limitation of using semiotics principles in AI based computer programming.

4. Artificial Intelligence and Imitating Human Cognition

The machine learning is a naïve concept that uses big data to solve communication problems. This is why machine learning has good prospects in communication research. But the point is whether the machines would be able to map the human cognition using AI based machine learning. Developing the set of expectations for mapping the human cognition is beyond the limit of a machine (Larson). The environment in which the information is processed in human brain is dynamic and the way it gets processed is not only psychological but physiological as well. The system of cognition that builds expression is more physiological and is a composition of excitation created by a message, symbol or sign. The specialized and specific sense attached to a message for individuals is difficult to compute and machines can hardy give exact meaning to this expression. So to break the code assigned to a symbol is beyond the ability of computation and algorithm. Processing the knowledge available in open domain depends on the systems of scripts and frameworks (Minsky, 1988). Even the supervised machine learning, which is considered the high-end machine learning, has its own limitations when it comes to map the interests of the individuals because the computational results often lead to over-fitting.

The above study leads to the identification of a knowledge gap as these research questions:

- Whether the Semiotics has potential of converting AI into the natural intelligence?
- Is semiotics capable of providing a phenomenological model for construction of near-natural artificial intelligence?
- Is semiotics able to bridge the gap of traditional and digital humanities?
- Is semiotics in AI leading to mediamorphosis?

5. The Gap of Technology and Culture in AI and Machine Learning

A deeper understanding of cultural attributes is needed to understand this gap. The attributes of any interface depend on the semiotic understanding of its elements. Giving meaning to everything around is a complex process. The basic tasks of cultural semiotics include Terms and Questions, Sign Systems in a particular culture; codes, processes and media and then the culture itself is identified as a sign system of society, civilization and mentality (Posner, 2004). The process of "semiotization" and "desemiotization" therefore, requires an intelligent perspective if it has to synchronize with machine learning. The culturally peripheral and culturally central ideas have different intensity, but both need to be recognized. There are some traits, which are central to the system of society, civilization and mentality and some are peripheral. The extra-cultural and counter culture realities are dynamic aspect of it. This aspect also needs proper identification and recognition if the technology has to completely synchronize with the culture. The creation and destruction of cultural codes is an ongoing process of reality augmentation. The codes, which become irrelevant, must get destructed or desemiotized and the codes, which have newly been added, need to get semiotized. This dynamic transition between two spheres of semiosic and non-semiosic could fill the gap between technology and culture (Johansen and Larsen, 2002).

6. Conclusion

This study concludes that there are possibilities of applying semiotics in culture, because some of the cultural attributes comprises of signs and symbols. But, it is equally impossible to apply semiotics to human reason and rationality developed in a particular culture. The mythological practices may or may not be the outcomes of scientific knowledge. As far as delimiting the human cognition through the use of AI is concerned this is an area where most of the research is being directed to predict the behavior of consumers and audiences by mapping their cognition, emotion and action as behavioral patterns play crucial role in building phenomenological models for AI. But, the limitation here is that coding the behavior of each and every individual will lead to infinite amount of data that may or may not lead to any universal understanding of the behavior. It may be possible to segregate all the elements of humors in the days to come, but it won't be possible in the near future for the machines to imitate human cognition, because either the big data based AI programming would lead to over-fitting or it may generate stupid humor. This situation is indicative of the capacity of AI-induced phenomena called mediamorphosis. This mediamorphosis is induced by deep learning and has bigger impact on the audiences. The algorithms of mapping the behavior of the consumers and audiences by the machine has actually delimited the capacity of media in such a way that the original media content gets morphed to fit the needs of the consumers and the market. The philosophical understanding of the semiotics suggests that whatever be the capacity of AI, machines can't handle humor in a physiological way. To understand this, one can imagine a situation when in the odd news section of a website there is a fictional story on crime in which a juvenile commits a crime. In the frequentist algorithm approach this would be included uselessly during the interpretation of a real crime by a juvenile. This way the AI based semiotics and machine learning would be over-fitting and would have no significance.

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