Exploration of Artificial Emotional Intelligence in Tobias S Buckell's "Scar Tissue"

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Abstract:

Artificial Intelligence (AI) is one of the most significant innovations in technology. Among its varieties, Artificial Emotional Intelligence, also called Affective Computing (AC) is an upcoming technology that enables machines to identify human emotions, process them in a timely manner and react properly and appropriately. AI is also instrumental in providing such emotion - oriented human machine communication. AEI is mainly found in Anthropomorphic robots, text, voice chatbots, and video bots that actively demonstrate their knowledge and skills combined with emotions through the framework of Artificial Intelligence.

An important stand of research in the field of Artificial Emotional Intelligence is how robots can respond to emotions of human beings. AEI enables robots to incorporate emotions into their interfaces through a variety of modalities like textual content, speech, video and facial expressions and react to them compatibly. A number of recent studies are conducted to make human interactions with computers and robots in a more natural and engaging way. This paper analyses Tobias S. Buckell's short story "Scar Tissue" from the perspective of AEI. It also highlights the life in robots and aids in understanding the appropriate emotions of robots instilled through Artificial Emotional Intelligence.

Key words: Artificial Intelligence, Emotions in Robots, Artificial companion , Robot, Interactions & Communications, Artificial Emotional Intelligence, Prosthetic devices

Science and Technology have become the watchwords of the contemporary era. Among the two, technology has become more dominant with its products of internet and robotics. Moreover, technology has shrunk the world into a digital society or online society and has made work, communication and connection processes easier. Any kind of development without the presence of science and technology is unheard of and thereby enhances human skills, thinking and wellbeing. The development in the fields of technology also paves way for new research developments and revolutions in various fields such as Medicine, Agriculture, Education, Information Technology and all walks of human life. Some of the radical changes of technology include Space Exploration, Introduction of Nuclear Power Plants, Defence Techniques and Constructive Technologies. Martin Bridgstock, a senior lecturer, School of Biomolecular and Physical Sciences at Griffith University opines that "it is equally clear that science can alter our entire conception of ourselves and our place in the universe". (Bridgstock 3). He states that by solving the world's riddles, from the tiniest subatomic particles to the wide expanse of galaxies, science has the potential to fundamentally alter the perception of mankind and its place in the universe.

Technological developments have always been the catalysts of change in society, underpinning innovation and influencing everyone's lives economically, culturally and environmentally. Undoubtedly, it is believed that in the forthcoming years, there will be a sharp increase in the development of science and technology and thereby the newer generation would encounter more innovations. It is also observed that people who embrace technology and love to learn about it, create a new environment for better living. The technological knowledge helps its learners and users to live independently by fulfilling their lives and also contributing to society and culture in various ways. Frolov, a Russian Philosopher opines,

… a firm foundation for sciences' value orientation, for the unity of scientific cognition and humanistic ideals in which the determinative, regulating role belong to the technology. The importance of this has never been felt so acutely as today, particularly because it is precisely man that is increasingly becoming the object of modern science (120)

He adds that science and technology has become inevitable towards development and must also be governed by universal moral principles.

Artificial Intelligence (AI), is one such a product of science that has made lives easier. The twenty first century witnesses its rampant growth and integration into various fields. The recent innovations like AI, Deep Learning Advancement, Cloud Computing, and Interactive Bots are widely used in many walks of life. The earliest substantial work in the field of Artificial Intelligence was carried out in the mid - twentieth century by the British logician and computer pioneer Alan Mathison Turing. In 1935, he introduced

an abstract computing machine consisting of a limitless memory and a scanner that moves back and forth through the memory and produces desired products in the form of symbols.

The first AI program was created in 1951 by Christopher Strachey, the director of the Programming Research Group at the University of Oxford. His 'Checkers' program ran successfully, at the university and it could play a complete game of checkers at a reasonable speed. In 1952 another program, named 'Shopper' written by Antony Oettinger at the University of Cambridge, ran on the EDSAC computer. This was used to find an item among the numerous products available in the shops in order to make buying easier for shoppers.   According to Georgios I Zekos, an economist and attorney at law defines AI as,

… a machine designed to operate any general intelligent action that a human is capable of. To that extent, an advanced artificial intelligence will have the capacity to perform multiple cognitive tasks, displaying a resourcefulness in its performance at a level equivalent to that of a human with 'AI Intelligence and AI Consciousness' (414).

All these features are now incorporated into various devices and witness AI's potentials. It is to be underscored that AI has entered into all the spheres of life and are developing more and more efficiently every day.

Millions of people come in contact with AI from the simple to complex forms, yet there is always a wide gap between humans and AI devices as the emotion between the two do not match. Emotions are unique in human beings which are expressed in many different degrees, qualities and intensities. Often human experiences comprise of multiple emotions, which are expressed through various verbal and non-verbal means and on the other hand, with the increase in the population of robots, shared with other living organisms of the world to which human have been connected for many centuries. As a new non-human entity, humans are still apprehensive of sharing their emotions with the AI devices. With the increase in the population of robots, the need for Human – Machine interactions has simultaneously increased and also requires high level AI programming.

 The highly - programmed bots are now designed with capacities to give accurate responses to complex queries. Earlier this advanced way of understanding and reciprocating emotions was considered as a farfetched goal for AI to achieve, but now it has become a reality. In recent times the AI bots are well made, capable of responding and reciprocating to human emotions. This unbelievable turn in AI technology is known as Artificial Emotional Intelligence (AEI) or   Affective Computing. Richard Yonck, a futurist and speaker, rightly affirms:

… now we find ourselves entering an astonishing new era, an era in which we are beginning to imbue our technologies with the ability to read, interpret, replicate and

potentially even experience emotions themselves. This is being made possible by a relatively new branch of artificial intelligence known as affective computing. (Yonck 15)

He is of the view that as a powerful technology, affective computing is destined to transform human life and this world over the forth coming decades.

AEI has reached its milestone of helping machines gain the capacity to understand, interpret and respond to human emotions through robots. The MIT Media Lab and Dr. Rosalind Picard, the pioneers of this AEI, initially used the idea of AEI in the field of medicine to treat the patients with empathy. They found that empathy given by robots quickens the recovery of patients. Being an emerging form of AI, AEI's influence has spread to all the disciplines like healthcare, insurance, education and transportation. It is expected that in the future AEI will be used to diagnose depression, detect insurance fraud, determine how a student comprehends a lesson or assess a driver's performance and so on. Emine Kambu, a Professor in Business Administration presents, "AI technologies perform simple and limited tasks with various programs that will make life and work easier. However, nowadays it has come to the point of detecting emotions. AI can detect emotions according to voice and face" (Kambu 152). He states that, AI technology has advanced to the point that it can correctly identify human emotions by analysing speech and facial clues and connect to the people in a more personalised and empathetic way. In short, AEI is a mixture of computer science, robotics, cognitive science and psychology. All the developments in science and technology gets reflected in literature and sometimes sci-fi becomes a source for technological innovations.

The twenty- first century witnesses and frequently addresses the wondrous nature of emerging technologies in literature. It appears in the form of novels, short stories, poems and plays. Since ancient times, technology has aided in writing and reading literature but in the modern world, technology has made easier for people to discuss about books and literature via Book Twitter, Book Blogs, Book Tube and also provides unimaginable methods of sharing books. Technology has also allowed writers and readers to connect more easily than they ever could before and it could be said that electronic media has revolutionised literature. This is evident through the fact that more people love to prefer audio and video sources, e books, movies, cinemas and podcasts than the physical books. Social Media and video sharing channels have also drastically changed people's perspective towards literature and education. Rui Alexandre Castanho, a Professor of Applied Science at WSB University comments,

In education, AI is being used to enhance the learning experience and improve educational outcomes. One of the latest developments in the field of AI is the ChatGPT model, which is a type of language model that can generate human-like responses toa wide range of questions. (Castanho 375)