

Artificial Intelligence (AI): The Christian Perspective

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Abstract

The issues and concepts of providing machines that imitate or duplicate the function of the human brain, and sometimes fool humans have been the trend of the field of Artificial Intelligence (AI).

This paper explains various schools of thought comparing machines to humans, as well as highlighting some basic limitations of AI. It presents a Christian biblical perspective that shows that intelligence or natural intelligence is a gift from God; who holds the answers to the mysteries or orders, coordination and cognition.

Keywords: God, Man, Creation, Artificial Intelligence, Machine, Christian, Limitation

Introduction

The capacity to reason, plan, solve problems, think abstractly, comprehend ideas and language and also learn is, or can be referred to as intelligence. These abilities are all powers of the mind. The concept of intelligence also permeates traits such as creativity, personality, character, knowledge and wisdom. All these in a nutshell try to explain intelligence or natural intelligence.

Dartmouth College in Hampshire in 1956, was the host of the first artificial intelligence conference (Dartmouth, 2014). This conference inspired researchers to undertake projects that emulated human behavior in the areas of reasoning, language comprehension and communication. Computer scientists and mathematicians Claude Shannon, Marvin Minsky, and John McCarthy laid the groundwork for creating "thinking" machines from computers. John McCarthy proposed the use of the term artificial intelligence (AI) to describe computers with the ability to mimic or duplicate the functions of the human brain (ability to reason, plan, solve problems, etc). A number of AI pioneers predicted that computers would be as "intelligent" or "smart" as people by the 1960's, the thesis has not yet materialized till date though, but artificial intelligence and its benefits are being seen today.

One good question is what is artificial intelligence? Unfortunately, the term artificial intelligence has no standard definition due to some of its concepts which many people consider controversial and confusing.

Below are some attempts made by scholars to define artificial intelligence

1. "The exciting new effort to make computer think ... machines with minds, in the full and literal sense" (Haugeland, 1985).
2. "The automation of activities that we associate with human thinking, activities such as decision-making, problem solving, learning ..." (Bellman, 1978).
3. "The art of creating machines that performs functions that require intelligence when performed by people" (Kurzweil, 1990).
4. "The study of how to make computers do things at which, at the moment, people are better" (Rich and Knight, 1991).

Objectives

This paper attempts to give a comparison of Artificial Intelligence and Natural Intelligence, Robots and Human, all from a Christian perspective. And also use the four-wall model of the hierarchy of components to explain that the source of all intelligence is God. This paper like similar ones seeks to establish a Christian view of AI. Several authors have written papers in favour of AI over religion, particularly Christianity. For example a reference is made to the work of Desmonde. According to Desmonde ". . . computers will come to grips with all value a problem . . . Mankind has to look to artificial intelligence for a new world where life will be meaningful" (Desmonde 1964; p. 5). One begins to wonder what the motive behind AI is or have evolved to.

In a paper by Trausan-Matu (2005), he stated that the main goal of AI is to develop machines (computer-based) that could perform tasks that, if performed by a human, the human could be referred to as an intelligent person. This goal is sometimes extended to include all psychological dimensions of a human being: learning, emotion, intentions, even language understanding and consciousness. This goal has been achieved to a large extent, as seen in both literature and production. However, the unsubstantiated comparison of robots and human, artificial

intelligence and natural intelligence poses questions about the difference that exist between the creator and the created.

Artificial Intelligence versus Natural Intelligence

According to Jones (2008), Intelligence can be simply defined as a set of properties of the mind. These properties include the ability to plan, solve problems, and in general, reason. It implies basically that intelligence is the ability to make the right decision given a set of inputs and a variety of possible actions. Artificial Intelligence is both the intelligence of machine, electronics and the branch of Computer that aims to create it (Jerwin & Prabu, 2014). Artificial Intelligence can be soft or hard. When AI is applied to computer systems, they exhibit this form of intelligence. For example, an application that plays a standard chess game can be built to play with and almost better than a human. Generally, humans exhibit some form of intelligence, which is somehow limited even in animals and AI. Humans have the ability to communicate with language, solve complex problems, all as a result of the embodiment of many aspects of intelligence (the ability to communicate, solve problems, learn and adapt) (Jones, 2008). Considering the ability to “really” learn and adapt, the application developed to play chess would neither know nothing about the game of monopoly, nor how to make a good cup of tea. It is somehow evident that the most complex and intelligent applications can be deemed intelligent from one perspective, but lacks even the simplest intelligence that can be seen in the least intelligent of animals (Jones, 2008). This fact is easily countered considering the fact that humans also might be deemed intelligent from one perspective.

Famed author Isaac Asimov once wrote about his experience with aptitude tests in the army. In the army, he scored well above the norm. But what he realized was that he could score well on tests that were developed by others that shared his academic bents. He opined that if people involved in auto repair developed the tests, he would have scored very poorly. The issue being that tests are developed around a core of expertise and scoring poorly on one doesn't necessarily indicates a lack of intelligence (Jones, 2008).

Exploring the Turing test which seeks to establish the fact that it is possible to program a computer to make it fool an average interrogator such that the interrogator will not have more than 70 per cent chance of making the right identification after five minutes of questioning (Turing, 1950). According to Trausan-Matu (2005), any computer program has not yet passed the Turing test and it is not expected to be passed soon. The issue of having a dialogue or a conversation is really a vivid way to differentiate artificial and natural intelligence. For a computer system to perform reasonable well in a dialogue, it must be rigorously programmed to handle basic words or words recognition. Trausan-Matu noted that if there are computer programs for translation, summarization and other powerful language processing, phenomena like metaphors, jokes, ... , even mundane dialogs are usually hardly “understood” by AI programs. Winograd (1987) states that artificial intelligence cannot go beyond beauraucracy level – which in Trausan-Matu's words, is a person with empathy, that acts according to some strict, mechanic rules. Furthermore Winograd (1987) explains that for achieving language understanding, a computer that “as a language machine, manipulates symbols without respect to their interpretation”, cannot reach humans that “create their world through language ... always interpreted in a tacitly understood background.” Intelligent machines exhibit this limited intelligence without even knowing the meaning, they lack self-awareness or self-perception.

Natural intelligence is divine; it has an origin that is unlimited. According to the bible in Gen 1:27-28a “So God created man in his own image, in the image of God he created him; male and female he created them. And God blessed them ...” The limitation of AI should be easily understood since it stems from a “limited” being, human. We as the creators of AI, should therefore regard machines as our creatures. Trausan-Matu (2005), stated that AI applications limitations could be very well understood if we accept that humans have, in addition to machines, from a Christian perspective something that resembles God. AI is a result of the creative gift we acquired from God, this suggests that no matter the innovation that AI experiences it would never meet natural intelligence. Creatures cannot surpass their creature, and just as we can never surpass God our Creator, the creature, machines, can never surpass humans.

Robots versus Humans

ISO (International Standard) 8373 defines a robot this way:

An automatically controlled, reprogrammable, multipurpose, manipulator programmable in three or more axes, which may be either fixed in place or mobile for use in industrial automation applications.

Pollock (1989) argues that we can build a person, on the basis of three theses.

- mental events are physical events that can be represented by a computer program
- people are physical objects with a physical structure that can be replicated.
- one can construct a person (that literally thinks, feels and is conscious) by building a machine endowed with appropriate artificial intelligence.

Creation of robots is an exhibition of the creative power given to humans. However, just like the tower of Babel it can be violated if taken to extremes. It can be a way for humans to demolish the purpose behind God's creation of humanity. Humans were created by God to relate with Him the creator and also with fellow humans. Replacing humans with robots it will demolish the relationship mindset God had for humans (Bang, 2014). Doctor Ivo Robotnik said in [Adventures of Sonic the Hedgehog](#) "Ah, a match made in heaven is nothing compared to a match made in the lab." Humans have gone to the point of creating robot wives to satisfy them both sexually and intellectually. This is done mostly because they seek a robot that will serve them without any resentment. (Robotic Spouse, 2014)

What is a person?

According Phillip (2006), the bible defines a person in terms of relationship. We are who are because of our relationship with God and with one another, not because of what we do or how intelligent we are. Relationship with God, gives meaning and purpose to life. It is a covenant between God, (as Creator) and people (his creation). A good question to ask is, are people only machines? In trying to answer this question, more questions arise, such as, is a robot with the ability to communicate, a human or a machine with human sensory capabilities? Will it be able to establish a relationship? (McKerrow, 2006). A lot of people will start seeing humanity as a stepping stone toward a higher form of evolution and will claim it is humanity's destiny to help the artifacts (intelligent robots) get off the planet and into their true environment - namely, the cosmos - perhaps in search of other hyper intelligences. (Hugo de Gares, 1989).

Machines are a product of humans, servants and not a replacement. Human beings are the apex of God's creation, placed in the universe the home for which they were created. The authors suggest that robots that exhibit intelligence should be developed in such a way that they can "recreate" a new robot, maybe, from their own creativity. Creativity is divine, it an inherited trait from God. The possibility of robots feeding, growing, reproducing, and maybe ruling a country seems remote at this point. For one to make the assertion that human being are nothing but machines, implies that they are machines with consciousness. Consciousness here, refers to having one's mental faculties in an active state i.e 'being aware', sharing knowledge with another, thinking about one's own acts or affections, an internal testimony to one's own state of innocence, guilt, etc. (Natsoulas, 1978). McKerrow (2006) noted that conscious robots are capable of using sensing and perception to be aware of their surrounding, such that a mobile robot can recognize and avoid obstacles in its path. It is however, the lack of reflective consciousness, which leads to moral responsibility for decision making, as beings created by a just God who hold humans responsible for their actions that differentiates humans from machines. Can a robot be held responsible for its actions? For robots to really be like humans, they must learn to adapt to new situations i.e. be flexible, and must learn about nobler things of life – beauty, integrity and righteousness. (McKerrow, 2006)

Four-Worlds Model

The task of defining artificial intelligence may be viewed by using the 4-worlds model, which is a division of the fields of intelligence. The worlds are labeled 0, 1, 2 and 3 respectively. The source world is labeled 0 and is called the Nucleus world. The segment labeled 1 is the intelligent world or natural world. The segment labeled 2 is called the abstract or machine world. The segment labeled 3 is called the virtual world.

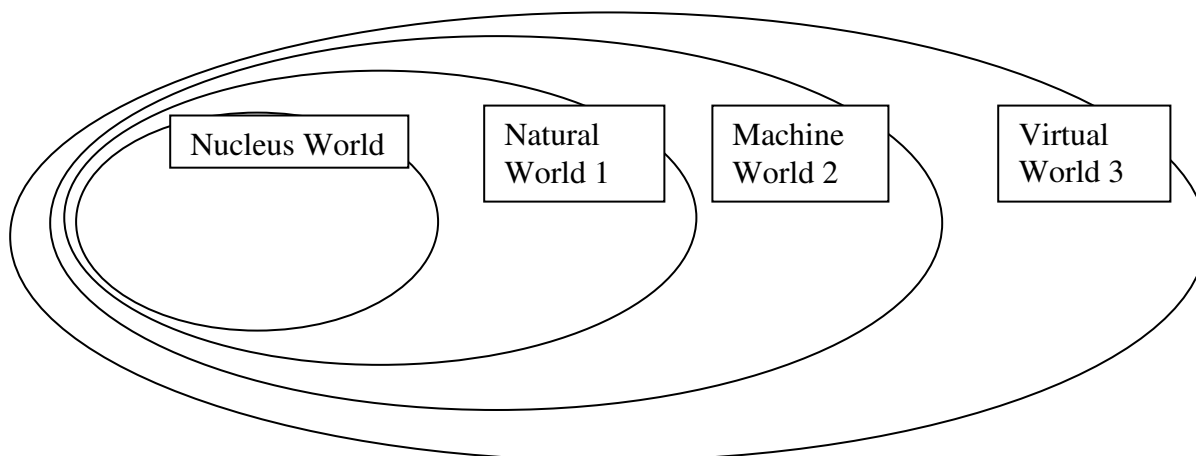


Figure 1.0

In figure 1.0, each world consists of physical and non-physical components. For an integer I such that $2 > I \geq 0$, each world $(I + 1)$ is brought about or emanates from the active objects in world I that means that the natural world is formed from the objects of the nucleus world. Likewise the Virtual world is formed from the objects of the machine world. The computer software (operating system or other software) and the Rom (Read Only Memory) are members or objects of the virtual world ($I = 3$). The physical members of the computers fall into the machine world ($I=2$). The underlying concepts behind the physical attributes of the computer system, which formed as basis knowledge for the fabrication of a machine that tries to imitate an animal, the production of machine can be referred to as an activity in artificial intelligence. The Nucleus world gives rise to the natural world and it is the supernatural world of God a caring force guiding humankind and producing form and order in the natural world we perceive everyday ($I=0$).

The scope of work on artificial intelligence is vague or indistinct and can be described in the context of work done. A good question to ask is “are artificial or natural children produced from artificial insemination?” Some believe that by this theory, human beings are complex machines and are capable of being constructed via AI. The core of the matter here is the natural sperm and natural egg from the woman’s ovary is artificially fused to produce the natural embryo or baby. So the means is not the issue here but the type of objects considered (natural or artificial), in the case natural.

Conclusion

According to Jaki (1969) “...man, precisely because of his mind, is not a machine, but a marvel and out be treated as such”. To say that a robot is a person reduces humanity to the level of a machine. Robots can be intelligent, dexterous and autonomous, but they are not human McKerrow (2006), and will not replace humans. Trausan-Matu (2005) suggests that AI which in fact is the result of human creative product, may be seen as an extension of the human mind, to be used as tools that could perform activities that do not need creative abilities. The human system, not mentioning the brain, is too complex for anyone to comprehend or compare to a wired up machine. “And God created man in his own image, in the image of God he created him; male and female he created them. And blessed them...” (Gen 1:27-28a)

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