

Jhon R. Searl on Artificial Intelligence

Abstract

Artificial Intelligence, is a combination of computer, science, physiology and philosophy. Artificial Intelligence asks us to believe that human beings are in fact computers or an advanced computer is equally capable as a human mind. But John R. Searl, a contemporary thinker and Philosopher criticizes this assumption in his article 'Mind, Brain and Program' that computer program can be equivalent to human mind.. Searl distinguishes in his article between a 'weak' view of AI which simply claims that AI is of value for helping us understand the way in which the mind works and a 'strong' view of AI which believes that a computer program is in fact 'a mind' and it has cognitive states just as human beings. It is this strong view of AI which is challenged by Searl. My attempt in this paper is to explain the notion and claims of Artificial Intelligence and its possibility with special reference to John R. Searl.

Keywords: Jhon R. Searl , Artificial Intelligence, human mind, computers, Alan Turing, Turing Test, Chinese Argument, Physiology, Philosophy, Behaviorist, Operationalist, Concept of Mind,

Introduction

In Philosophy, the pursuit for an understanding of human mind, which distinguishes us from other living and non-living things, is not new. But in last few decades the thinkers and scientists are not only trying to understand the functioning and structure of brain and its relation with mind but they are actually working in the direction to make a machine with artificial intelligence. A machine, which can not only perform certain tasks resembling to human beings (like walking etc) but can also have the same thinking capacity which a normal man has.

Though the development in this area has taken place in last few decades or so but it has its roots in the thinking of the 16th century western philosopher Thomas Hobbes(1588-1679),who claimed that 'Reasoning is but reckoning'. According to him, thought is not occult or unknowable, but an operation performed on information provided by the senses. Hobbes saw the mental activity as the working of a material process. Again a more crucial further step in the direction of Artificial Intelligence was probably taken by George Boole(1815-1864)who saw thinking and logic as a matter of symbol manipulation and also that any complex argument or process could be broken down into its constituent parts. He believed that complex truths in theory are reducible to binary truth values and in the last analysis it is a matter of Yes/No. Thus it implies that complex concepts can be built up by the addition of very large number of basic binary choices. In the last 20th century the invention of computers gave strength to the implications of Hobbes and Boole's approach to human thinking. With the advent of computers which, by mechanical means, are able to perform actions which resemble what a human being does when he or she thinks; the issue of whether computers can think or not, became crucial and central to the philosophy of mind. And there are thinkers who firmly believe that machines can think and Artificial Intelligence is possible.

Review of Literature

There are various books available on the above topic but few are philosophically important. For example Thompson Mel's edited book on *Philosophy Of Mind*,

Feser Edward's edited *Philosophy Of Mind* and Rosenthal David M's *The Nature Of Mind* apart from this I have thoroughly gone through John R Searl's article "Minds Brains And Programs".

The main problem

The main problem of which I have tried to find a solution in my paper is if there is any scope and possibility of Artificial Intelligence?

Famous mathematician and thinker Alan Turing is said to be the first to raise the question 'Can Computers Think?' his approach was to set a computer a basic task, namely that it should be able to respond to questions in such a way that a person would not be able to know whether



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those answers were coming from a computer or another human being; that it responded intelligently. For this to work, it was necessary to program the computer in such a way that appropriate answers would be formulated in response to questions. This is known as Turing Test and it raised whole range of questions about Artificial Intelligence. This view of Turing was attacked by Searl with his famous Chinese Argument which came in his article "Minds, Brain and Programs". This we shall discuss latter in the paper. First and foremost it is important to understand the notion and claims of AI.

Artificial Intelligence is a combination of computer, science, physiology and philosophy. It is indeed a broad topic, consisting of different fields .But one element which is common in all is the creation of machines which can 'think'. 'Intelligence' itself is a complex notion which consists of many abilities such as capacity to reason, to plan, to solve problems, to think abstractly, to comprehend ideas to use language, to learn etc. Now the question is how can we judge the intelligence of a machine. To this we have seen the answer is 'Turing Test'; computer should be able to response to questions just as a human being does. This is possible only if we accept that computers can also have mind which is said to be so special about human beings or we accept that there is nothing called mind except for the functioning of the brain in human beings. Thus the notion of AI revolves around two basic questions-

1. How a computer can have mind? And
2. Why do we need to think of a human as having a 'mind' over and above the various operations that it performs through the functioning of the brain?

In other words Artificial Intelligence asks us to believe that human beings are in fact computers or an advanced computer is equally capable as a human mind. In fact the whole emphasis of AI (the behaviourist and operationalist approach towards mind) is on the input and output capacity of a computer and they tend to believe that given a technically advanced program to a computer it will also give outputs similar to a human mind. But there is one issue related to this belief of AI, there is a difference between the input and output capacity of a man and a computer. The inputs and outputs of a human being has meaning and significance, it always has a reason for doing or not doing something and this we don't know whether computers can have or not even with a more advanced program. People who don't believe in intelligent computers have either of the following views –

1. Computers only act 'as if' they are intelligent but they actually lack that special 'something' namely consciousness, intentionality, caring etc; which is an essential part of human intelligence.
2. Computers are good at doing limited things but they will never become powerful enough to be able to get near human intelligence.¹

John R. Searl is of the first view. He has criticized the assumption that computer program can be equivalent to human mind. This he shows very clearly in his article 'Mind, Brain and Program'. Searl distinguishes in his article between a 'weak' view of AI

which simply claims that AI is of value for helping us understand the way in which the mind works and a 'strong' view of AI which believes that a computer program is in fact 'a mind' and it has cognitive states just as human beings. It is this strong view of AI which is challenged by Searl. The argument he gives is a thought experiment known as Chinese Argument. In which ' Searl asks us to imagine a scenario in which he is locked in a room with a collection of Chinese symbols and some rules written in English which tells him which combination of symbols to put in response to questions written in Chinese and slipped to him through a slot in the door. Searl does not speak a word of Chinese , and the rule book does not tell him the meanings of the symbols he is combining- all it tells him, in effect is that when he is given a set of symbols that look like this (where *this* refers to some specific set of shapes on the page), he should reply with a set of symbols that look like *that* (where *that* refers to some other set of shapes)it is possible that Searl could get so good at combining the shapes that a native Chinese speaker who is putting questions to him through the slot and is unaware of what is going on would assume that Searl really speaks Chinese.'²

Thus Searl looks at the claims of AI and comes to the conclusion that , just as he can manipulate Chinese characters without understanding them, so a computer can manipulate a set of formal symbols without actually knowing anything at all of what they stand for. Now the question is if the difference of human thinking and the so called information processing capacity of computers is so clear then why the supporters of

All believe that any machine with human capacity to think could be made? Searl gives three reasons in answer to this question-

1. First and most important is a confusion regarding the notion of 'information processing' people in cognitive science believe that the human brain and its mind basically does information processing and computers when properly programmed (ideally with the same program as brain) the information processing in them is identical with that of human brain.
2. Second reason is that the supporters of AI are in a sense Behaviorists or Operationalists who see that appropriately programmed computers can have input output patterns similar to those of human beings and so they postulate mental states in computers similar to human mental states.
3. Third reason is that AI assumes a dualism of programs and hardware which separates it from its material matrix(brain). In his words " If mental operations consist in computational operations on formal symbols ,then it follows that they have no interesting connection with the brain ;the only connection would be that the brain just happens to be one of the indefinitely many types of machines capable of instantiating the program."³

Searl clearly states that the capacity of human mind is not simply processing the given information but it also has intentionality as an

essential part of it; whereas computers can have similar information processing without having intentionality in it. Secondly only on the ground of similar input and output patterns one can never explain the human capacity to think, because even in the case of Chinese argument the person not knowing any Chinese was giving answers in Chinese that was similar to those of a native Chinese speaker. That means, so called input and output was also there but there was no 'thinking' or 'understanding'. Again the way AI supporters separate mind from brain it totally negates any intrinsic connection between mind and the actual properties of the brain, whereas many of the mind properties like consciousness, intentionality, etc are actually a biological phenomenon likely to be casually dependent on the specific biochemistry of its origin that is brain. Searl very rightly says ".....only a machine could think, and indeed only very special kind of machines, namely brains and machines that have the same causal powers as brains. And that is the main reason strong AI has little to tell us about thinking, since it has nothing to tell us about machines. By its own definition, it is about programs, and programs are not machines" ⁴

Finding

Thus in the light of the above it can be said that explaining the human capacity of thinking simply in the terms of having the ability of information processing and giving outputs according to its inputs is actually degrading the capacity of human mind. Because human mind can not be defined as having the only capacity of information processing it also has the ability to reason, plan, learn, comprehending ideas, thinking abstractly, using language etc. And to have these qualities, Consciousness and Intentionality

is needed which is dependent on the bio-chemical activity of the brain.

Conclusion

Moreover human beings cannot be said to be programmed at any particular time but their capacity to think is actually a gradual process of learning and growing in a society with language and people around them. As Ryle very rightly differentiates between 'knowing that' and 'knowing how', in his book *The Concept of Mind*. AI concentrates on getting computers to 'know that' to come up with the appropriate responses as a result. Whereas Ryle argues that an intelligent action is a matter of instinctively knowing what one wishes to do in a situation, irrespective of any rules (namely the input). That means intelligent action is also 'knowing how' and not only 'knowing that'.

Suggestion

Thus unless and until we create a machine exactly as human brains with all its causal powers, bio chemical properties and the ability to 'know how', we can never ever reach to anything near to human mind and its varied capacities.

Endnotes

1. Thompson Mel, *Philosophy of Mind*, Hodder Education, 338 Euston Road, London, UK, 2001, p. 66.
2. Feser Edward, *Philosophy of Mind*, Oneworld Publications, Oxford, England, 2006 p.122.
3. Searl John R, , "Minds Brains And Programs" in *The Nature Of Mind*, ed., Rosenthal David M, Oxford University Press, 1991, p. 51
4. Searl John R, , "Minds Brains And Programs" in *The Nature Of Mind*, ed., Rosenthal David M, Oxford University Press, 1991, p. 51