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DIFFERENTIATING THE MIND AND MACHINE IN THE PHILOSOPHY OF MIND

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ABSTRACT

In the second half of twentieth century, by emerging computers the theory that these machines are identical to the human mind and scientists will be able to create a computer which has all human minds' capacities by developing and improving computer sciences became more important. This project was called artificial intelligence. People who advocated this mode assumed that by developing the computer sciences we will face artificial mind. To achieve these goal two main solutions were made among scientists of this field and there was a conflict about the right solution. One group analogized the relationship between mind and brain to the one between software and hardware. This approach was called strong AI (artificial intelligence). On the contrary the advocates of the weak AI believe that we can simulate some aspects of the human being's intelligent behaviors by computer applications. According to the computer functionalism theory, there is no obstacle for nonhuman systems to have mind and sense because mind's actions are nothing just calculations. In this article according to the computer functionalism theory and by analyzing and criticizing this theory, we try to get the relationship between the mind and artificial intelligence. Considering the reasoning of Chinese Room and intentionality in human being, intuition, the matter of frame, the matter of authority, awareness and the power of thinking which is the basic element of the human existence thinking and mind are refused about computers. Because for producing a computer which has abilities more than human being it is necessary for us to teach the computer solutions which are better than the ones that human being applies and this is self-defeating, for human being should have invented those solutions before.

KEYWORDS: Machine, Mind, Artificial Intelligence, Computer Functionalism, Awareness, Thought

Mind is a collection of states and phenomena like thoughts, beliefs, emotions, intentions, feelings, desires, goals and sensory perceptions which generally form any person's subjective life.

The subjective states have the intentionality, meaning that they represent something. One of the characteristics of subjective states is that everybody accesses to his/her subjective states immediately and nobody accesses to others' subjective states. Meanwhile physical events are general. The course of privacy and private access make us to say that the subjective states are transparent and we are the ultimate reference of our all feelings and perceptions. A subjective matter is not limited to the space (it is not spatial) but being spatial is the inherent characteristic of the physical matters. The subjective intentional states in relation to other intentional states and a belief with a coherent and coordinative relation with other beliefs can result in a sensible action. Thus, the subjective states have a characteristic of holistic. In the early of 1950s when the calculator machines shower their adequacy and performance, some pioneer philosopher came to a conclusion that digital computers were more able than being just giant machines. But how we can interpret recent effort about computer science and AI that is attempt for making intelligent machines? Can electronic brain think? Do computers' abilities mean that the human being's brain is just a complex machine? Scray Van suggests that despite the upcoming difficulties there is no decisive reason for being pessimistic and hopeless in relation to this subject to join invention with learning and finally a machine will be made that is a kind of competitor for human being in learning area. (Barbour, 1983, 381). A computer is just a machine that receives data, processes and stores it and then uses it. Now if human's cognition and intelligence are not something more than computer-like processing data, people can believe that the ratio of the mind to the brain is like the one of software to the hardware of computer. This view is called strong AI. However, in the view of weak approach we consider just a similarity between the mind and computer. (Searle, 2003, 75). From Heidegger's point of view the fundamental element of human being's existence is thought. And the kind thought and thinking by which we can solve our scientific problems differs from the kind that is common in natural sciences meaning the arithmetic thought that machines do these days in the best way. (Macquary,1998, 141). The power of thought and awareness are the most important characteristics which are peculiar for human kind by which we differentiate human's and machine's mind. Computers therefore, apply just a series of simulative actions according to general applications fed to them.

RATIONALITY OF MAN AND AI

People have been trying to understand their relationship with other creatures for thousands of years. Nowadays, for several reasons, many philosophers don't like to solve such big problems. However, these problems still exist. The biggest problem for instance, is that we have a general and ordinary portrayal of ourselves which is hard to adapt with our scientific universal portrayal of the physical cosmos. We consider ourselves as conscious, liberated, enjoyed the mind and wise in the world that according to science just has been formed of physical and mindless and aimless particles. Now, how we can adapt these two portrayals? How a mechanical world can have men in itself who enjoy intentionality that is people who can represent the world to themselves? Problems like these have been

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transmitted to issues which look newer: how the mind can communicate to the brain?

Our mental phenomena include: 1. consciousness 2. intentionality (which their cause is related and focused on objects and matters existing in the world and are other than them). One of the most expensive properties of human kind is rationality which often is appreciated as the distinction of us and other creatures. The ability of conceptual thinking and expressing our thought by tongue bind with the ability to perform deeply reasoning process. The idea that rationality is just for human kind is challenged by two different groups in the recent century. Revolution in information technology has resulted in ambitious statements of AI researches. (Low, 2010, 220). The advocates of this point of view suggest that any analogy between brain and machine should be based on observations of behavior and the target of contemplation or thought is an action that means the result of thinking; because being aware of mental feelings or inner states is inaccessible for others and computers. Chess player computers always win the world champions. Moreover, there are computers learning experiences. Such self-corrector machines can adjust their programs in the light of the past performance. For example, they can regulate making decision criteria (the value of chess man, defense position, flexibility in one set) again and revise about them and find out the competitor's plans. On the opposite side of this approach the view of weak AI's advocates exist. They say that even there is a machine which adjusts its program. This is done according to the predetermined plan that is the machine just does something which has been defined in its general plan. As far as computer simulates and repeats human being's behavior and this action is not an evidence for its intelligence but an indication of an intelligent designer. Machine can not invent or innovate and can not form a scientific theory or hypothesis. Music and poetry made by computer are not impressive and pleasant because the skill and delicacy of the relation of tones and music can not be measured in simulative way.

TOURING TEST

According to the Alen Touring's test (1912-1954)- English mathematician- if human kind can not distinguish that the received response is from a person or a machine and actually the response is made by a machine, we can say that the machine has intelligence and perception. Touring's dream was realized after a while and some programs were designed which were able to do this. Touring machines are simple computers which have a very high power. Thinking about designing these machines have a very important effect on developing mathematic reasoning and calculation theory. Also in order to verify the computer model of mind and defensing the theory of AI, Touring test is strictly posed.

Table 1: Touring machine table for adding two numbers

Input: X	Input: -
State 1: no change/right/2	No change/right/1
State 2: no change/right/2	X/left /3
State 3: no change/left/3	No change/ right/4
State 4: -/ stop	

The Touring machine includes three parts: 1. a very long strip divided into some squares. 2. a head being able to read the symbol on the square, erase the square and substitute another symbol and move a square to left or right. 3. stops.

The main thought behind the machine table is as following:

The head moves to the right to get the first square having X in it. The then head continues to move to get a vacant square ("-") which makes a space between two numbers (two chains of Xs). The machine fills the vacant square with a X and goes back to the left. When getting to the next vacant square (that is when passes all Xs) the machine takes one step to the right and replaces the X in the left end with a vacant square. The result (in example) is a chain of five X. it means that the machine calculates adding 2 and 3. This process is used for every other chain of Xs which are separated by a vacant square. (Craft, 2008, 146).

ELIZA AND PERRY PROGRAMS

Designers of programs such as Eliza and Perry which speak with people like a real person is speaking must have had higher claims. However, making such program made a kind of doubt that computer understood and perceived too. For example, following there are some instances of questions and answers from Eliza program:

Patient: I need help. This is undoubted.

Computer: how much value will it had for you if computer helps you?

Patient: maybe I can learn how to get along with my mother.

Computer: tell more about your family.

Patient: my mother is looking after me.

Computer: does any other family member look after you? (from Esterrnberg,2008, 733).

Here the computer speaks as if a real person speaks and this makes some people so charmed that they think computers also think. They don't know that according to Churchland (as a materialist) in this conversation the computer that plays the role of Eliza makes the illusion of having real perception, but actually it doesn't have. The responses are mostly formed by the patient's sentences and by simply converting and using a complex of standard forms of language. And the produced questions are made using the patient's keywords. Eliza doesn't have perception about what father, brother or happiness is (used in the patients speech and the computer's answer accordingly).

Neither does this software perceive these things nor understands the meaning of the words. (Churchland, 2007, 186). Arguments and critiques against AI

1. The Touring's dissertation can not be used in order to show that computers are intelligent, because these machines are syntactic motors and perform only based on simulative and symbolic calculations and thus can not progress toward implying and being intelligent. The AI's opponents consider the human being's thought as composed symbols which have both syntactic and cognitive reasoning characteristics. The syntactic characteristics are characterized by testing symbol in the single state. Shape is one of these characteristics. The cognitive reasoning characteristics are likes with meaning. They include reference and the value of symbol's verity and can't be characterized only by testing symbol. Thus, computers are instruments which manipulate symbols only based on their syntactic feature. But they can not be planed to maintain the cognitive reasoning characteristics. (Searle, 1991, 526).

2. Chinese Room argument

Searle assumes that he sits in a room (Chinese Room) and receives three sets of Chinese characters which include orderly: a simple story in Chinese language, general information about the story's arrangement in Chinese language and a set of question about the story with a series of instructions in English. The instructions teach him how to manipulate three sets of Chinese characters in order to get another set of Chinese characters. Following these characters is difficult because searle doesn't know the Chinese language and distinguishes the characters only according to their shapes. Finally with a lot of effort searle gets a forth set of Chinese characters. The searle's answers to the Chinese questions- sings that he even doesn't know they include a question- and signs that he discards and doesn't know they include the answer are just computer operations and he does understand no sign. Then searle acts himself as a computer but hasn't understood the Chinese story. Because he only knows about the shapes of the symbols and no syntactic characteristics. He therefore, concludes that all computer systems are sensitive just to syntactic characteristics and there is no computer that knows about characteristics of related cognitive state. So, no computer can understand a story. Thus the strong AI is voided.

Searle's argumentation can be formulated as follow:

1. If the strong AI is right, then there is a software to understand Chinese language by which the computer running those software can understand Chinese language.
2. Searle can run such a software without understanding Chinese language.
3. So the AI theory is not accepted. searle uses the perception of intentionality in his analysis. The perception which ties with the name Brentano (German philosopher). Andre Dartigue to describe this term writes: "the base and principle of intentionality is that awareness is always awareness of something. Awareness is awareness only when notices something. Apparent or identification dependent is not definable but in relation to awareness. (Dartigue,1997, 21).

So we can not have an understanding which is empty and without dependent thing. Understanding should always be about something. According to searle, software is only a simulative matter but intentional state have content. (Searle, 1980, 21).

A suitable example in this regard is Mykin software. This software having about 500 rules (if and then proposition) is a program which can examine about 100 types of infection which are resulted from bacterium. So that its performance is comparable with performance of members of medical faculty of medical department in Stanford university. (Esternberg, 2001, 735-736). So we can not ascribe any understanding to this program because the program performs only according to defined simulative rules. Intelligent thought and understanding may not include just a string of symbols according to the simulative rules. But this is all computers can do when running a program. Therefore we can not claim that computers are intelligent because of running a program. And if the Touring test suggests something other than this it is absolutely wrong. (Low,2010, 248).

1. Lack of intuition

Dreyfus who criticizes the computer functionalism, believes that human kind has intuition and computer doesn't. He believes that computer just manipulates predesigned algorithms. Computers excel in math and analogy aspects but are not better in the intuition field. (Esternberg, 2008, 737).

2. Existence of inherent intentionality in human being

The AI theory necessitates an incorrect generalization and this is the generalization of human being's intentionality to other things even to the manmade products. (Searle, 1980, 374). Simon (father of AI) makes fallacy in using the word "calculation" about computer. He has believed that thinking includes calculation while calculation for computer means

simulative ans symbolic calculations but about human being it has several proofs and includes decisions that human being makes in his life. Imagine a person, for example, who wants to choose a spouse. Here he considers such different criteria as faith, modesty, higher education, good sociability and the like. This is also a kind of calculation. But is computer able to such calculation? So, it can be said that thinking includes calculation. Macquary believes that human being's different thinking should differ from computer's calculational thinking or knock and stop.

3. Misleading process and action

There is a misleading analogizing computer operation to human intelligence which can be called misleading process and action. The meaning of this misleading is that computer operations and calculations follow some fixed rules which are built in computer programs and this can be called process. But action (operation) is a course like reading, writing, falling in love, … which is created by human kind and is resulted from his/her decision. Such a course is result of interchanging the human kind's intelligence and surrounding environment. There is no fixed rules related to this behavior. (Postman, 2006, 224). Analogizing human being to computer, therefore, will have no result but determinism. That is since computer is a machine, the result of its calculation is predetermined, analogizing human being to computer necessitates that his/her behavior is predictable meanwhile, this is essentially invalid. Because human being is a free creature and we can not determine what kind of behavior in special conditions in a few next moment he will have. The computer functionalism theory makes that we ignore these human's features which make him benevolent and able to be selected morally. (Wolf, 2002, 282).

4. Consciousness

Consciousness is subjective indescribable quality of experiences and experiences of sensory perception. (Blackmore, 2003, 104). The matter of consciousness is special for human kind and activities of conscious mind and is the distinction of man from machine and other creatures.

Nature of Consciousness

The nature of consciousness has been questioned very much. Is it a physical or meta physical matter? But it can be asserted that if we call it a metaphysical matter, that is consciousness. To advocate of consciousness as a metaphysical matter, there have been many arguments including: 1. The argument of cognition of Frank. Jackson. Mary is a super intelligent scientist who has been jailed in a black and white room since birth. She has learned all physical details of visual system. One day, Mary is released from jail and sees a ripe tomato in enough light. She cries: Aha, now I know what red color looks like. This reasoning shows that subjective quality of being red can not be a physical trait because if it is a physical trait, Mary wouldn't learn any new thing when seeing the tomato and the red color. So the physical originality is incorrect. 2. Consciousness and explanatory gap: unlike the existing sameness in science like the sameness of water and H_2O in which we can explain properties and features of water with the help of its chemical structure, physical and neural information about human being's brain can not explain the qualities of visibility. So there is always a gap between the brain's physical states and its subjective state which can not be filled. This gap can not be filled by developing science and increasing experimental data. 3. The intelligence test of Zombie: the intelligence test of Zombie or imitator of pain is referred to refuse functionalism of consciousness and defense its being metaphysical and also to prove that human being enjoys the mind. The imitator of pain is a person having an inner state that plays the role of pain but doesn't have a painful experience. Chalmers is among people who believe that it is really possible that two systems exist which are equal functionally but one is conscious and the other is not. Therefore because Zombies can be imagined functionalism is not correct and features of visibility of subjective states are not determined by functional roles which characterize these subjective states.

Consciousness Oneness

The human being's consciousness has oneness and content. There is a kind of continuity from moment to moment or even in all consciousness experiences. This conscious content is experienced by a single I. thus in addition to the flux of experiences there is a single experiencer. (Blackmore, 2008, 21-22).

Consciousness, Attention, Memory

Our neurological capacity is so limited that can not sense all millions external stimulus and bring in the consciousness. Even if it is possible to trace all this stimulus, the brain can not process all them. Our capacity for data processing is limited. So just a little of this processed information comes in our consciousness. This selection is performed by attention mechanism. Hence the attention is the preface of consciousness and activation of the activator reticulated system in the brainstem is the requisite for consciousness. Memory is divided into three types: 1. Procedural memory which is storage and retrieval of the information which a person has experienced himself in a certain time and place. 2. Semantic memory which is storage and retrieval of some information about the world, personal knowledge, words, relations, rules and formulas. 3. Process memory which is related to the way of doing operations and skills.

Any one of these three types of memory is related to different types of consciousness so that the process memory relates to minimal consciousness, the semantic memory relates to perceptual consciousness and the procedural memory relates to self-consciousness.

Damaged Minds

The most significant and interesting defect regarding to thinking about consciousness is posterior amnesia. Posterior amnesia occurs when hippocampus (a part of marginal system of brain) is damaged either by Korsakoff's syndrome which is caused by spurious poisoning or by surgery, an illness or some incidents that deprive the brain from oxygen. The result is that the person maintains both short-term and long- term memory but loses the capacity of storage of new long-term memories. So the rest of his life is passed in the present times which last just a few seconds and these few seconds are also forgotten. (Blackmore, 2008, 30-33).

Drugs and Consciousness

The effect of drugs on the consciousness is the most convincing evidence that awareness is dependent on the brain. As soon as studying the effects of psychotropic drugs we find out that. The psychotropic drugs are those that affect the mind function and have several influences including anti psychosis, antidepressants and sedatives.

Conscious Will (Authority)

Some people believe that talent is self-conscious thought that separates us from animals and machine. According to these people since we can measure different kinds and consider their consequences so we have authority and thus we are responsible for our selections. Our intuition necessitates that we have the possibility for selection and choosing in a lot of daily affairs. And lots of admiration, punishment, penalties and blame will be undue without this authority and freedom. (Karbasizadeh and Sheikh Rezaei, 2012, 168).

CONCLUSION

1. Although computer can have process and output in some way through simulative programs and feeding inputs, it has no understanding and perception. Those who think human being's mind is exactly the same as computer just pay attention to the similarity between computer's input and output or to the verbal commonness about computer and human's mind without any information about the deepness and content of this superficial similarity. Computers don't have intuition and perform just according to the general program fed to them before. So these machines are distinct from the human's mind.
2. Computers use a series of fixed and algebraic rules for running their programs which their results are predictable. But people make decision based on their determination and selection which its result is different in general and ordinary conditions.
3. The matter of consciousness is special for human and activities of conscious minds. This matter is the distinction of human kind from machine and other creatures.
4. One of the characteristics of self- conscious ego is that ego has creativity and can conceptualize and pose common aspects of all creatures in a general perception frame. Categories in philosophy play the role of classifying objects which is itself one of the characteristics of the self- conscious ego.

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