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Is our brain a computer?

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The brain, just like a computer, accumulates and transforms information. So, may it be claimed that the brain is just a very complicated computer? The author would like to ensure the reader that this is not so- the answer is negative. The brain is not a computer.

It is said that due to the fact that someone died, it ended his suffering. What does this mean? Suffering can end only when the sufferer is aware of this. If the brain was a computer, a man never found out that he had died. Awareness would die with it. Unless that the brain is not a computer.

This issue is not as blank as it seems, and, in consequence, it is derived from mathematics and the theory of algorithms to philosophical questions. In 1900 David Hilbert, German mathematician, posed the following thesis: if mathematics is a set of strictly defined rules, is it at all possible to create a universal automatic machine (automata, algorithm, program) based on the rules to solve any mathematical problems, for instance, prove theorems. Surely, Hilbert did not believe that such machine could be easily constructed, he just proposed a theoretical possibility of using algorithms in mathematics. In 1930, an eminent Austrian mathematician, Kurt Gödel, presented a certain theorem, which – in its general sense- sounds as follows: for any self- consistent system of rules there are theorems that cannot be proved by means of this rules. This theorem, no wonder, was a blow to Hilbert's thesis, because, if it is impossible to prove all mathematical theorems, there is no general automata that could prove it.

Let us look, however, closer at this unusual issue. To do this, let us formulate a theorem- for practical purposes, let us call it "G" (Penrose – [2,3]). G states: there is no proof of G. This means, that G cannot prove what it states! Thus, what remains is to resolve is if the sentence: "G states that G cannot be proved" is true or false. Otherwise, if G is true or false.

Let us assume, just for the moment that G is false, and , accordingly- against what it wants to demonstrate us- there is a proof of G. This would mean that G states what is false and there is a proof of the non-existence of such proof! This is an explicit contradiction. Thus, it is possible to refute the assumption that G is false. Accordingly, there is no choice but to accept that G is true. This means that we are certain of the truth of something that we cannot prove!, although the question how we know it, even if we cannot prove it, remains open.

So, what is the connection between theorem G and the thesis posed by Hilbert? Certainly, theorem G refutes Hilbert's thesis, as it makes us aware that there are appropriate mathematical rules that cannot be proved by any mathematical rules (within the same system). In consequence, it is not possible to create a general automatic machine based on these rules to solve any mathematical problem. Hence, what does this have in common with the computer and the human brain? Well, the computer is a machine that accomplishes only and solely strictly defined algorithms. Thus, the computer (or, should it rather be said the algorithm completed by it) will never be capable of proving the validity of theorem G!, as it does not have anything else than a set of mathematical rules at its disposal- and, as mentioned before, they are not sufficient to prove if G is true. Hence, the computer will never find out if G is true. On the other hand, we, as humans, know this because we understand it. Because the knowledge of G being true cannot be reached by means of algorithms, the conclusion is that the human brain does not work and comprehend the surrounding world in an algorithmic manner! The brain is not a computer, even immeasurable. The computer does not understand anything, but the brain does. The computer does not have a consciousness but the brain does. At this point, we approach, in e certain sense, the issue of artificial intelligence. There is only one intelligence, involving the consciousness; however, its performance may be artificial or true (which has no relevance to memory and the ability to remember). The true intelligence should be understood as the intelligence contained in living organisms. The artificial intelligence should be understood as the intelligence contained in a machine, thus, in the algorithm that it completes.

As stated before, the computer is not capable of comprehending what a living organism knows without any need to use algorithms. Thus, it is impossible to accomplish intelligence in a machine! As stated above, each algorithm is limited, which is surely sustained by its absence of the consciousness of the validity of theorem G. On the other hand, the brain has this consciousness, so it has a higher position in the hierarchy of the possibility of cognition. But, is it limitless? According to Gödel's theorem, it seems not the case. It

knows that G is true, but in the surrounding cognition opportunities it is not capable of crossing another threshold of consciousness. Therefore, in accordance with G, it will never comprehend itself! Likewise, it will never be possible to prove the mathematical theorem of G, only by the means of a set of mathematical rules, and the brain will never be capable to understand its actions. In either case, there is no external support point, as in the famous Archimedes of Syracuse lever of moving the Earth. In proving theorem G this point is the superior set of rules reaching beyond the set of mathematical rules. The superior consciousness is essential to understand the activity of the human brain. A similar conclusion was reached by E. Alexander [1].

To have a more profound insight into the fact that the brain is incapable of comprehending its operation, let us recall a specific problem raised by Alan Turing, English mathematician, who formulated the theorem which states that there is no universal algorithm which can determine that any other algorithm could generate the final results, i.e. complete its work [2,3,4,5,6]. According to this theorem, there is no computer that can comprehend and control the operation of any other computer. If this was otherwise, we would always know if the tested computer finishes, or does not finish the performed calculations. Let us assume, for the time being, that the above theorem is false and that there is some universal algorithm Au, containing all possible mathematical procedures which would be completed (solely) after stating that the tested algorithm Aj would never complete the calculations. As Au is supposed to be a universal algorithm, let us demand that it tests itself. This means that Au would complete its work after stating that Au will never finish the calculations! Surely, this is impossible, which proves that Au is not able to understand itself! Likewise the brain, although it does not work in an algorithmic manner. Concurrently, a conclusion may be derived that Au will never complete the calculation. If it did, it would not, which is contradictory. This conclusion was reached not by means of an algorithmic manner, because even Au, containing all possible mathematical procedures, cannot state this fact.

For more on the above deliberations – see R. Penrose [2,3] and M. Berezowski [4,5,6].

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