Assessing the Turing Test

by Stephen Chapman

In 1950, Alan Turing suggested the question: “Can machines think?”. Along with this question, he proposed an idea which has become an essential concept in the philosophy of artificial intelligence. The idea in question was, of course, the Turing Test. The test itself is a simple idea, while the conclusion is still a subject of furious debate. Therefore, this paper will explain the Turing Test, and then attempt to answer a difficult question: Is it satisfactory?

To begin with, an explanation of how this test was created. Alan Turing suggested that the test be based on what is known as the “imitation game”. The imitation game uses two human beings - one male, one female - known as Player A and Player B, who are isolated from a third player, known as Player C. By questioning both Player A and Player B, Player C attempts to choose which is male and which is female. Player A, meanwhile, attempts to trick Player C into making the wrong decision, while Player B tries to assist the interrogator. Player C may ask any question, as penetrating as he or she wishes, in the attempt to make the correct decision. From here, Alan Turing asked “What will happen when a machine takes the part of A in this game?” (Turing, 1950). From this, the goal of the Turing Test is clearly visible – can a computer fool an interrogator, so that the interrogator believes that it is human even when the interrogator is simultaneously talking to a real human being? To put it simply, Turing suggests a question: Can a computer imitate a human mind, and by doing so, do what we (as thinking entities) do? To explain, by imitating a human mind precisely enough that a real human cannot tell the difference, Turing argues that this computer is capable of human thought – even if the process of this thought is fundamentally different to real human thought.

The question that remains, however, is that if a machine can imitate a human conversation, does it mean that it is thinking? For one, it is unlikely that a machine, regardless of how advanced it is, will be able to entirely mimic all posibilities of the human mind. The second issue is that of other entities. A dolphin, for example, would be completely incapable of passing the Turing Test, because it does not show human intelligence, even if it does show intelligence of its own. Does this mean that a dolphin cannot think? According to the Turing Test, a dolphin is not thinking. This shows that while the Turing Test may at first appear valid, it does not remain so (at least, not in current form). It presumes, firstly, that any thought that is significantly advanced is very human in nature, and secondly, presumes that there is no other possible type of thought, because it relies on intelligence being shown by exhibiting identifiably human behavior. In this way, it is clearly biased towards human-style intelligence. To return to the case of the dolphin, while it may be said that a dolphin's thought processes differ from human ones, to say that they are not identical simply because the dolphin does not show human behaviours is simply short-sighted. The Turing Test, however, as pointed out by J. Copeland, does not say anything about an entity that fails the test. The conclusion that is given when a computer or anything else fails the test is not that it cannot think, merely that it cannot pass the Turing Test (Copeland, 1993, p. 44). By doing this, the question is reformed from “Can machines think” to “Can machines pass the Turing Test”.

Finally, however, this question may again be called into question. While a machine may or may not be able to pass the Turing Test, does it mean anything if the test itself is flawed? As said previously, the Turing Test is biased towards human-type thinking. It simply does not recognise any other type of thought. This was pointed out to be somewhat unusual by Russel and Norvig, who wrote “Aeronautical engineering texts do not define the goal of their field as 'making machines that fly so exactly like pigeons that they can fool other pigeons.'” (2003, p. 3). As such, then, the Turing Test ignores the fact that computer intelligence may be fundamentally different than human intelligence.

Indeed, the first computer that could pass the Turing test may appear to be unable to do so, because it may not for one be able to comprehend the test, or for two, as suggested by Copeland, find the test a demeaning waste of time (1993, p. 44). This is where the Turing Test crumbles, in that it fails to provide any meaning beyond the test itself. While it is all well and good to celebrate a computer passing the Turing test, it will not necessarily mean that it is truly thinking, merely that it was capable of passing the Turing test. The other possibilty is that the machine in question was clearly not thinking, and merely fooling the interrogator. Examples of this abound, but perhaps the most famous is ELIZA. While it has not passed the Turing test proper, it is viewed to have come very close. This is all the more curious when you realise that ELIZA clearly does not think – it merely follows a set of mechanical rules. However, even if ELIZA was to pass the Turing test, all it would show is that there is some other factor at play, one that will allow humans to believe something to be capable of human-like thought when it clearly isn't.

To conclude, then, while the Turing test at first appears satisfactory, it does not provide any real information when it is successfully completed, or totally failed. It is merely an idea that provides no true answers. The fact that computer thought may be completely different than human thought is not taken into account, and ELIZA has shown that while a computer may appear human, and indeed, may be capable of passing the Turing test, it has also shown that the Turing test is fundamentally flawed, as ELIZA shows no signs of any form of thought, merely mechanical manipulation. Because of these factors, the Turing test is little more than an interesting footnote, and is treated as such by many researchers.

Stephen Chapman 2009

Bibliography

Copeland, J (1993). *Artificial Intelligence: a philosophical introduction.* Oxford:Blackwell Publishers Ltd.

Russel, Stuart J & Norvig, Peter (2003). *Artificial Intelligence: A Modern Approach.* New Jersey:Prentice Hall

Turing, A.M. (1950). *Computing machinery and intelligence.* Mind, 59, 433-460.