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How useful is human intelligence for evaluating artificial intelligence?

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One of the issues that has always characterized the debate on AI is whether artificial systems can match human intelligence. The famous Turing test (Turing 1950) is based precisely on this idea: a machine can be considered intelligent if its performance matches that of a human to the extent that a human interacting with the machine is deceived into believing that they are interacting with another human. Two closely related points are worth noting here. First, the intelligence referred to in the Turing test is functional (if a system responds as a human would, then since humans are intelligent, the system must be too). Second, the intelligence of an artificial system depends on an external interpreter's judgement, since it is the individual interacting with the machine who attributes intelligence to it. This instrumentalist perspective states that intelligence (and other mental characteristics, such as intentionality) is a property that does not depend on a machine's internal characteristics, but on whether it is considered intelligent by the individual interacting with it (Dennett 1987). Therefore, an artificial system is considered intelligent based on its functional characteristics, as the interpreter only evaluates the machine by how it behaves (i.e. how it responds appropriately), not how it is constructed or the arrangement of its parts or the type of material it is made of.

The first point to consider is that the instrumentalist strategy is highly effective. Proof of this is that humans use this strategy to attribute intelligence to one another. When interpreting the behavior of others, none of us has access to their internal states — let alone the physical structure of their brains. While no one is surprised to consider the behavior of another human intelligent when appropriate, when it comes to attributing intelligence to a non-human physical system, this strategy seems insufficient. Different strategies are required to assess whether an artificial system is intelligent. It seems that what makes the difference here is the material the machine is made of, and more generally the intrinsic characteristics of the system, such as the arrangement of organs. One initial question in this regard is how legitimate this change of strategy is when applied to machines compared to humans. When we ask more of machines than of humans, are we not already assuming a fundamental difference between ourselves and other physical systems? However, by assuming such a difference, are we not victims of a cognitive bias that inevitably limits our understanding of artificial intelligence?

The debate on AI focuses on whether machines can be considered intelligent and is based on a comparison with human intelligence. In this context, humans serve as the fixed point against which the intelligence of a machine's performance is assessed. When human intelligence is used as a benchmark, the question is whether machines can solve problems in the same way as humans. This raises issues similar to those highlighted by Franz de Waal (2016) in his criticism of studies of animal minds, in which he argued that attempts to assess the cognitive abilities of other animals by constantly comparing them with humans are flawed. Furthermore, the concept of intelligent behavior in machines is complicated by the fact that, in humans, intelligent behavior is often associated with possessing a mind. When we talk about intelligence, especially the ability to solve problems, the prevailing idea is that this ability in humans involves intentional, representational, and self-reflective capacities. According to some scholars, this is why the instrumentalist strategy is insufficient for comparing humans and machines: noting that the machine solves problems is not enough, it is also necessary to understand how it solves them. It is the issue of the mind, rather than intelligence, that is at stake. In this case, rather than focusing on external behavior, the focus is on what happens inside the machine. The implicit argument of many scholars is that, since machines do not have a mind, they do not solve problems in the same way as humans and are therefore not intelligent. They appear to behave intelligently, but they are not really intelligent because they do not act in the same way as humans.

In this regard, two considerations should be made. The first is that, in discussions about the relationship between humans and artificial systems, the implicit assumption is that human intelligence, which serves as a point of comparison, is a unique and well-defined characteristic on which there is substantial agreement among scholars. However, this is not the case. There are different ways of understanding intelligence, and the debate in AI depends greatly on how intelligence is defined. Indeed, it could be argued that the mentalistic, intentional and self-reflective view should not apply to humans at all. Therefore, it is not necessary to assume the possession of a mind in order to define intelligence. Daniel Dennett (1971), who draws on Ludwig Wittgenstein (1953)'s work, has inspired many deflationary models in the philosophy of mind by proposing a non-mentalistic interpretation of intentional human behavior. From this point of view, considering an artificial system to be intelligent seems a plausible option.

The second consideration is more general in nature. The possibility of comparing human and machine intelligence is not in question. What is in question is the idea that humans are the benchmark by which other forms of intelligence are measured. When a machine does not act like humans, we say that it is not intelligent. However, this underestimates the possibility that a machine can be intelligent even if it operates differently to humans. The most fruitful outcome of the debate on AI is the idea that forms of intelligence other than human intelligence may exist. This debate provides a useful opportunity to reflect on the definition of intelligence, which is too hastily attributed exclusively to humans.

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