

In quest for the thinking machine

Martin Forsberg Lie¹

¹Østfold University College

March 9, 2020

Being able to think, express, learn and communicate with other humans brings interconnections that define our culture and society. Technology has shaped history, brought forward by generations of craftsmen, engineers, mathematicians. It is hard to see how humans could evolve without cooperation, trust and a common cognitive capacity, enabled through the language of science.

Technology is often part of the equation of understanding complex questions. Injecting ideas into a *thinking machine* let us automatically interpret patterns in sensory data that otherwise is invisible for the human brain, or solve problems that otherwise would take immense labor and time. We often call these concepts *learning* and *problem-solving*. As technology has evolved, we have emerged from war-time mechanical machines to supercomputers enabled by developments in silicon material. The field of artificial intelligence investigates the possibility for the computer to learn, reason and think.

The question of whether a machine can *think* is not new. Alan Turing, a mathematician from Cambridge University, made a philosophical standpoint by presenting the popular theoretical test, the “Imitation Game” in his 1950 paper “Computing machinery and intelligence” (TURING, 1950). Whether the opponent is a computer or not, is decided by a human interrogator who makes a decision when the game ends. As Stevan Harnad points out(Harnad, 1992), a thinking machine that is indistinguishable to any judge has capacities of infinity possible interactions with the real world, and therefore cannot *win* the game. Although some claim to have successfully passed a limited version of the test(hum), Harnad interprets the test about how machines can generate cognitive capacity similar to humans.

For our concerns over technology gone wrong, we would not expect machine intelligence to conquer humans physically, but *thinking machines* might indeed influence and shape our decisions about economy, politics and personal relations through the way we communicate

in a modern world.

Algorithms edit the world we perceive, leading to allegations of mistrust, lost opportunities, skewed elections, and echo chambers of thoughts, best demonstrated by the 2018 Cambridge Analytica scandal([wid](#)). Our daily stream of information input may well consist of elements where the Turing test has been passed without our awareness.

References

Computer convinces panel it is human. <https://www.bbc.com/news/technology-27762088>. URL <https://www.bbc.com/news/technology-27762088>. Accessed on Fri, February 07, 2020.

Facebook and Cambridge Analytica: What You Need to Know as Fallout Widens. <https://www.nytimes.com/2018/03/19/technology/facebook-cambridge-analytica-explained.html>. URL <https://www.nytimes.com/2018/03/19/technology/facebook-cambridge-analytica-explained.html>. Accessed on Fri, February 07, 2020.

Stevan Harnad. The Turing Test Is Not A Trick: Turing Indistinguishability Is A Scientific Criterion, 1992. URL <http://cogprints.org/1584/>.

A. M. TURING. I.—COMPUTING MACHINERY AND INTELLIGENCE. *Mind*, LIX (236):433–460, oct 1950. doi: 10.1093/mind/lix.236.433. URL <https://doi.org/10.1093%2Fmind%2Flix.236.433>.