Will big data make us smart?
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For many years, we have been fascinated by the "Turing Test", a test of a machine's ability to act like a person. Such Artificial Intelligence (AI) fascinates us because it promises a magical servant that will anticipate our needs while doing our will.

While the magical servant is an ancient fantasy, computer science – in the guise of AI – promises to make it achievable at last. However, many of the most attractive fantasies of magical servants may not be achievable if they are "AI-hard" – only possible in a machine that could also pass the Turing Test. In my field of Human-Computer Interaction (HCI), the comparatively mundane goal is to make machines more useful by better understanding human needs. As a result, there has long been a tension between AI and HCI, with the HCI researcher often pointing at the artificiality and triviality of the problems in which AI invests so much effort (playing chess, for example, rather than basic needs such as love or hunger). AI researchers respond with an appeal to the future, a time when the magical servant (if properly controlled) will genuinely solve human problems.

However, the ground of these debates has shifted rapidly in the "big data" era that is now emerging, created by a combination of network effects in communications infrastructure and the radical increases in calculation capacity predicted by Moore's Law. As the data collected by the Internet of Things piles up, the role of old-fashioned AI is being supplanted by machine learning (ML). The fantasies are often the same, but the mathematical constraints are changing. Whereas an algorithm that imitates a single person (for example, echoing what it hears) is not very intelligent, an ML algorithm that imitates the average behaviour of a million people appears more useful. The result seems pretty smart, so long as we lower our expectations to that average.

The question is whether this new commons of intellectual service can truly benefit all. At present, every person who enters search terms or clicks on a link is doing work for free, creating intelligent content for commercial aggregators. Google and Facebook sell this intelligence back to us, along with the user-generated content – whether cat videos, news reports or scientific papers. Might this result in even more concentrated rewards in the hands of the few, rather than the many from whom the data is extracted? Are these cognitive rents extracting value or creating prosperity, and if so for whom? And, if "big data" is creating a more unequal society, how are we to avoid social discontent?

One might even ask – is the most straightforward way to pass the Turing Test not by making machines that are more like humans, but rather by making humans more like machines?

References

Blackwell, A.F. 'Interacting with an inferred world: The challenge of machine learning for humane computer interaction.' In Proceedings of Critical Alternatives: The 5th Decennial Aarhus Conference, 2015.

Pasquinelli, M. 'Google's PageRank algorithm: a diagram of cognitive capitalism and the rentier of the common intellect'. In K. Becker & F. Stalder (eds), Deep Search. London: Transaction Publishers, 2009.