Chapter 10
Afterword:
Learning in the Age of Algorithms

ABSTRACT

This chapter looks across the landscape of learning in the current age of algorithms and so-called 'artificial intelligence' with a focus on issues raised in the concept of "the master algorithm" around learning models and the future of learning. Pedro Domingos identifies five "scientific" theories of learning algorithms and presents them sequentially and so capable of improvement by the theorist (and he alone). By contrast, in her conversational framework, Diana Laurillard presents four approaches to framing learning models. The authors prefer Laurillard's modelling but believe the fifth dimension of rhizomatic learning needs to be added to her framework in order to enable the learner to take the final decisions on what has been learned and what they will do subsequently, and so produce a learner-centric framework for learning and architectures of participation. They examine several histories of thinking about intelligence as well as long-term views of technology before outlining, briefly, a phenomenonology of learning as the potential countervailing ideas to AI in education.

INTRODUCTION

When Fred was working in Manchester on the Ambient Learning City project in 2011, he was asked to give a talk at an event about the future of libraries to celebrate the £200m refurbishment of Manchester Central Library. He

was told "You're the digital guy you want to get rid of books, give us a talk about digital futures". Fred was to be the sacrificial lamb before an audience of bibliophiles and city elders, planners and managers. So, he sat down and pondered why future-facing digital visions were expected to be about destroying/replacing the old. He had already read Siva Vaidhyanathan on the digital futures of libraries and as an advisor to the Museums, Libraries and Archives Council (MLA) had helped write the Framework for the Future (of Libraries) for DCMS (Department of Culture Media and Sport) which had recommended them becoming "digital content creation centres (what might now be called a maker-based "Future Shop"). So instead of being digitally destructive, he wrote "Putting Context into Knowledge" giving a 65,000-year overview of human knowledge, information, writing things down, printing and record-keeping, partly inspired by the neuroscience of "This is Your Brain on Music". It was probably a first attempt to present a Before and After presentation; in this case concerning libraries. He called for a future of "learner-generated digital libraries" (shared open resource creation somewhat like GitHub), which had more or less, been achieved in Manchester with the Digital Cabinets of Curiosities and Aggregate then Curate elements of The Ambient Learning City.

One slide highlighted Jacques Vaucanson who in 1735 created the Mechanical Duck (like the Mechanical Turk which had inspired Amazon), which was actually a mechanical "automata" which Simon Schaffer talks so eloquently about. Fred annotated the slide with the phrase "Since 1735 AI has been promised to be delivered in 5 years time". Ray Kurzweil the guru of his own self-identified singularity, currently predicts it will happen in 2030. Since 1984 Fred's been teaching a history of computing, which is presented as a history of all technology where he argues that "technology is order imposed on nature" Or put another way the technology we build as people living in "Western Civilization" draws on our rational thinking and it is built in opposition to nature, treating nature merely as an infinite resource without constraints, over which our thought processes will inevitably triumph. We have been looking at the History of Technology since 1984 and have read much of the key works on AI, such as Marvin Minsky Society of Mind, Joseph Weizenbaum, Computer Power and Human Reason, Margaret Boden, AI and Education and a lot of the new work about Alan Turing which has become available since the work of the crypto-analysts at Bletchley Park during WW2 has become declassified e.g. Bolter's (1984) "Turing's Man and Andrew Hodges The Enigma of Intelligence. Bolter sees the relation between human intelligence and digital technologies (he uses the term 'computers', as

18 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/afterword/256803

Related Content

Creativity and Mobile Language Learning Using LingoBee
Sobah Abbas Petersen, Emma Procter-Leggand Annamaria Cacchione (2013).
International Journal of Mobile and Blended Learning (pp. 34-51).
www.irma-international.org/article/creativity-and-mobile-language-learning-using-lingobee/93174

Exploring the Pedagogical Affordances of Mobile Web 2.0
Thomas Cochrane (2011). *Open Source Mobile Learning: Mobile Linux Applications (pp. 196-215).*
www.irma-international.org/chapter/exploring-pedagogical-affordances-mobile-web/53977

Augmented Reality and Mobile Technologies
Grant Potter (2011). *Models for Interdisciplinary Mobile Learning: Delivering Information to Students (pp. 212-230).*
www.irma-international.org/chapter/augmented-reality-mobile-technologies/52837

Using E-Simulations in Retail Sales Training Benefits of Blended Learning Design
Virpi Slotteand Anne Herbert (2012). *Professional Education Using E-Simulations: Benefits of Blended Learning Design (pp. 215-232).*
www.irma-international.org/chapter/using-simulations-retail-sales-training/59811

JAMIOLAS 3.0: Supporting Japanese Mimicry and Onomatopoeia Learning Using Sensor Data
Bin Hou, Hiroaki Ogata, Masayuki Miyata, Mengmeng Liand Yuqin Liu (2010).
International Journal of Mobile and Blended Learning (pp. 40-54).
www.irma-international.org/article/jamiolas-supporting-japanese-mimicry-onomatopoeia/40976