Artificial intelligence and advertising: Ethics?

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Abstract:
The history of artificial intelligence (AI) started in 1956 during the Dartmouth summer camp in New Hampshire, where scientists met in the hope of making progress fast. In 2018, we still have a long way to go even though the label "artificial intelligence" is now widely touted and misused. Its uses in marketing and advertising raise problems for the public (since it creates a rift between expectations and reality) and professionals (some of whom use it unduly, to the detriment of other players who are shaping the real market for AI). Concrete applications in marketing and advertising exist, mainly related to the capture of traffic on websites in order to turn visitors into loyal customers. Professionals must now set standards of practices at the planetary level that focus on three aspects: clean, exact, unbiased data; the "transparency" of algorithms; and the respect of the choices made by duly informed consumers. What is the place for ethics whenever AI inventiveness replaces human creativity? In no case should human beings shirk their responsibilities by hiding behind their delegation of creativity to AI.

The history of artificial intelligence (AI) started in 1956 during a summer camp in Dartmouth, New Hampshire. John McCarthy, an AI pioneer, along with Marvin Lee Minsky, a cognitive scientist, invited a dozen scientists working on various topics of advanced research (*e.g.*, complexity theory, neuronal networks, machine learning) to discuss a subject recently named "artificial intelligence". This term referred, fortunately or not depending on the viewpoint, to the sciences and technology for simulating human intelligence via machines. Participants at the summer camp worked for two months on several theoretical questions in the hope of reaching convincing conclusions in the near future.[1]

In 1957, there was the hope of seeing concrete applications within the decade. In 2018, we are still far from this goal… even though artificial intelligence is now a widely, often inappropriately, used phrase.

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[1] This article, including quotations from French sources, has been translated from French by Noal Mellott (Omaha Beach, France). The translation into English has, with the editor's approval, completed a few bibliographical references.

A phantasmal reality: From Asimov's three laws of robotics to disobedient conversational assistants

Artificial intelligence fascinates as much as it frightens. Against a backdrop of phantasms, some people are predicting the end of humanity, like Elon Musk in his now famous tweet (Figure 1), which Mark Zuckerberg declared "irresponsible". Meanwhile, in July 2017, *Forbes* reported that researchers at Facebook AI Research (FAIR) had to deactivate an AI engine after the conversational assistants invented their own, unique language that humans were unable to understand.[2] Public awareness of AI has been oriented, from the start, by Isaac Asimov's short stories (and three laws of robotics) and then by the apocalyptic world presented by James Cameron in *Terminator*.

Figure 1: Elon Musk's tweet of 4 September 2017.

AI has so much potential in marketing that its meaning is regularly abused. Improperly referring to a mere feature in a computer program as AI deliberately maintains the confusion between the intelligence of the human inventors of AI and the intelligence supposedly inherent in the tools themselves. We should endeavor to use clear language to avoid adding new layers to the "universal lie" (a reference to Albert Camus in *L'Homme révolté* [*The Rebel*]).

The ARPP's first role (Autorité de Régulation Professionnelle de la Publicité, a trade association of advertisers) is to strive toward loyal, honest communication in advertising. The abusive usage of the phrase "artificial intelligence" in marketing and advertising raises problems of loyalty at two levels: for the public, since it creates a rift between expectations and reality; and for professionals, some of whom use the phrase unduly to the detriment of other players in the market.

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[2] "Facebook AI creates its own language in creepy preview of our potential future", *Forbes*, 31 July 2017. Available at: https://www.forbes.com/sites/tonybradley/2017/07/31/facebook-ai-creates-its-own-language-in-creepy-preview-of-our-potential-future/#6f93d2fa292c.

Abusive uses of the phrase: Problems of loyalty toward the public and among professionals

We all recall, about ten years ago, "greenwashing" whereby some firms presented an image (more or less warranted) of themselves as being "environmentally friendly". Nowadays, a similar wave is unfurling in the digital realm, and we can rightly decry "AI-washing". In the past few years, the media are occupied, sometimes saturated, with AI. Terms like machine learning, deep learning or neural networks are widely used to describe classical software operations, whereas they refer to other, precise, realities. Two researchers from MIT have criticized this improper usage of the phrase, "*AI has generated lots of unrealistic expectations. We see business plans liberally sprinkled with references to machine learning, neural nets, and other forms of the technology, with little connection to its real capabilities. Simply calling a dating site 'AI-powered', for example, doesn't make it any more effective, but it might help with fundraising.*"[3]

It is time to call for self-regulation in using this phrase. These abuses of language cause problems of loyalty:

● loyalty toward the professionals busy devising genuine AI-based solutions, only to see them depreciated owing to the intense, deviant usage of the phrase.

● loyalty toward consumers, anxious about the coming of AI, to whom shiny solutions are proposed that are claimed to be AI but are not.

By making an engagement of loyalty, professionals must quickly set the conditions for using this concept; and this must be done at the world level. When consumers realize that an application sold as being based on machine learning learns nothing by itself, they will shy away from this technology; and serious players in this field will bear the brunt.

In 1967, Marvin Lee Minsky declared that the problems hampering the development of AI would be solved within a generation. Ten years earlier, in 1957, Herbert Simon foresaw that, within the decade, a machine would beat human players at chess. Both these outstanding intellectuals, giants in their fields, had it wrong: the first claim has never been realized, and the second came true forty years later. It is, therefore, natural to remain somewhat skeptical about the promises made for AI.

AI in marketing and advertising

Which applications?

While some are eagerly AI-washing their products, others are more quietly shaping the genuine market for AI. AI now covers two very broad categories: perception and cognition.

In the first category, the most solid recent advances are in voice recognition (now used by millions of people: Siri, Alexa or Google Assistant) and image recognition. As the puppy-or-muffin experiment proved (Figure 2), the error rate for recognizing images in a database passed from 30% in 2010 to 4% in 2016 — better than the average human performance.

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[3] BRYNJOLFSSON E. & McAFEE A. (2017) "The business of artificial intelligence: What it can — and cannot — do for your organization", *Harvard Business Review*, July. Available at: https://hbr.org/cover-story/2017/07/the-business-of-artificial-intelligence.

Karen Zack/@teenybiscuit

VISION ERROR RATE

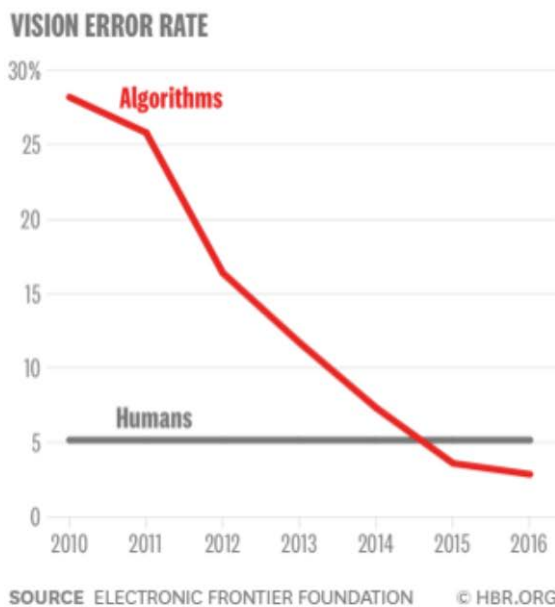SOURCE ELECTRONIC FRONTIER FOUNDATION   © HBR.ORG

Figure 2: Is it a muffin or a puppy?

As for the second category (cognition), the significant advances are in machine learning. "Intelligent agents" based on machine learning have demonstrated their abilities in several areas: the fight against fraud, money-laundering, the optimization of orders on the stock exchange, etc. In advertising, let us cite the example of the two systems based on machine learning developed by Infinite Analytics. The one predicts whether a user will click on a given ad and help optimize an investment, whereas the other improves searches and recommendations.[4]

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[4] The first has tripled the return on investment; and the second, increased annual sales by $125 million. See: MITCHELL J. (30 June 2017) "These founders turned an MIT class project into a leading analytics company". Accessible at; https://www.forbes.com/sites/julianmitchell/2017/06/30/these-founders-turned-an-mit-class-project-into-a-leading-e-commerce-company/#751777c45fda.

What actual solutions does AI now offer to marketing and advertising? The actual players in this market use three families of solutions:[5]

● attracting traffic (customer scoring and targeting, marketing, segmentation, audience analysis);

● targeting visitors or customers (personalization, recommendations, the creation of contents and their optimization, automated marketing campaigns, etc.); and

● customer loyalty (conversational assistants, automation of customer support, behavioral analysis).

For an environment of confidence

Combinations of these three families of solutions will make it possible to profit from a very granular knowledge of individuals so as to implement very persuasive marketing strategies, which are often predictive. However, for "*automated individual decision-making including profiling*" which "*produces legal effects*", Article 22 of the EU's General Data Protection Regulation (GDPR)[6] requires obtaining the "*data subject's explicit consent*". The GDPR also provides for a privacy impact assessment (PIA), an analysis of the robustness of the technique and of its compliance with the law.

With the coming of big data, this granular knowledge of individual consumers is going to raise ethical questions. To take an extreme example: most professionals in marketing consider it to be perfectly acceptable to combine several of these AI solutions in order to target someone who has been identified as showing a keen interest in sports cars. Given the algorithmic power used to (lawfully) process big data, AI might also detect that the given individual carries a heavy debt load, or has committed misdemeanors, or is violent and impulsive, or has a background of alcohol use… What then? Should this person still be exposed to targeted ads for sports cars? Technology still has to make progress to reach this level of granularity for targeting, but the day is coming when automated decisions will be made based on a slue of criteria.

To avoid abuses (including regulatory, since they prove toxic for innovation and the economy), it is necessary to — now — support the adoption of guidelines for avoiding this unfortunate sort of targeting. Fair practices, shared by all professionals worldwide (under the code of the International Chamber of Commerce, ICC, on advertising practices and marketing commercial communication),[7] would guarantee a system of transparency and confidence, where the consumer would be seen as a partner rather than a (more or less conscious) target of the procession of his own data. Such a system would be articulated around three major aspects: data, algorithms and consumer choice.

Clean, exact, unbiased data

AI is fueled by data. If the data are inexact, biased or risky, the decisions made by AI will be weak. AI sometimes holds out a mirror to human beings. We need but recall the unfortunate experience, in March 2016, of Tay, Microsoft's conversational assistant. Within 24 hours after being launched, it started proffering hateful statements after having assimilated from Twitter the many insults addressed to it — a far cry from Microsoft's announcement: "*The more you chat with Tay, the smarter it gets, learning to engage people through casual and playful conversation.*"

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[5] CAVAZZA F. & ZISERMAN F., "Panorama des solutions d'intelligence artificielle pour le marketing" at:
https://fredcavazza.net/2017/10/02/panorama-des-solutions-dintelligence-artificielle-pour-le-marketing/.

[6] The GDPR (General Data Protection Regulation): "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data". Available via: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1478961410763&uri=CELEX:32016R0679.

[7] ICC (2011) "Advertising and marketing communication practice: Consolidated ICC code", 57p. (Paris: International Chamber of Commerce). Available:
http://www.codescentre.com/media/2083/660%20consolidated%20icc%20code_2011_final%20with%20covers.pdf

Algorithmic transparency

Since humans design and develop AI, we must start out from the principle that the instructions for it have to be explainable so that algorithms used are transparent. The actual intellectual property involved in AI is its algorithms. In a highly competitive environment, this transparency might, therefore, seem utopian. Besides, sophisticated systems of machine learning might turn out to be black boxes, so dark that even the inventors of the algorithms have difficulty correctly explaining why AI has made such and such a decision.

As Nozha Boujemaa, research director at INRIA in charge of the TransAlgo platform, said, "*Algorithms are everywhere in our everyday digital activities […] It is crucial to understand the mechanisms at work and make sure that they respect consumers' interests as well as citizens' rights.*"[8] to guarantee this algorithmic transparency, it must be possible to clearly explain why AI makes decisions. This is the prerequisite for building confidence.

Respect for consumers' choices

Consumers have to be considered to be partners of the brands that engage in a dialog with them. Information on the AI techniques used to promote brands and the possibility of opposing any form of automatic decision-making with regard to targeting will reinforce the confidence necessary for a smooth operation of the market.

In matters related to behavioral marketing, professionals have, we might point out, proven responsible. Evidence of this are the excellent international initiatives, such as youronlinechoices.com, a pan-European platform that offers consumers the possibility of refusing advertisement. This sort of initiative should be a source of inspiration for AI-related marketing or advertising proposals.

Will AI invent its own ethical standards?

Inter and *ligere* (the two Latin words at the origin of the word "intelligence") refer to the faculty of relating situations to each other. Intelligence also means "*reacting with discernment in new situations, profiting from fortuitous circumstances, discerning the meaning of ambiguous or contradictory messages, finding similarities between situations despite their differences, finding new ideas*".[9] In other words: creating something new.

AI might invent contents that offend the public, as did Microsoft's Tay. The rules adopted by ARPP's members rely on voluntary, human commitments. How to continue assuming a responsibility when the contents of advertising might have been fully generated by AI without human intervention (apart from someone who turned on the machine)?

Let us keep in mind that humans are still the agents who implement AI-based marketing campaigns. It is, therefore, their responsibility to:
- maintain control;
- see to the transparency of algorithms; and
- responsibly process the data fed into the AI system.

In no case should humans shirk their responsibilities by hiding behind a "delegation" of creativity to artificial intelligence.

[8] Statement made in December 2016 following the Digital Republic Act: http://www.lemonde.fr/campus/article/2017/05/02/o21-la-transparence-des-algorithmes-releve-des-droits-civiques_5121201_4401467.html
[9] Excerpt from a lecture by Olivier Boisard. http://www.planete-a-roulettes.net/.