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A Review of International Policymaking in the Field of Artificial Intelligence

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Abstract:
Based on the Doha Agreement signed on February 29, 2020 between the Taliban and the United States of America, the two parties committed to stopping attacks on each other. The United States committed to withdrawing all its military and civilian forces and those of its allies from Afghanistan within 14 months. The Taliban also pledged to cut off cooperation with terrorist groups, including al-Qaeda, and pledged to reduce the intensity of its attacks and to advance peace talks with the Afghan government.
While this agreement was expected to end nearly two decades of military conflict in Afghanistan. However, the Taliban's increased attacks on military and civilian targets have continued to the point where Afghan cities have fallen one after another; The then Afghan president fled to Abu Dhabi, and Kabul fell to the Taliban within hours. Meanwhile, despite assurances issued by the Taliban, many Afghans were trying to leave the country.
This has caused the world to once again face an international refugee crisis, raising the question of how international law can manage such a situation; what are the commitments of member states of the international community, and what are the potential gaps and challenges.
Key words: Afghanistan, refugees, Taliban, America, International Law

1 Introduction

The world we live in today is in many ways like a wonderland, similar to the world described by the English mathematician Charles Lutwidge Dodgson in his famous novels. Image processing, Lewis Carroll's smart speakers, Charles Lutwidge Dodgson's The Little Mermaid, and self-driving cars have all been made possible by advances in artificial intelligence (AI)—the ability of a system to correctly interpret external data, learn from that data, and use that learning. AI emerged as an academic discipline in the 1950s and remained in relative obscurity and limited practical interest for more than half a century.

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Today, AI has entered the business and public discourse space due to the emergence of big data and advances in computing power. AI can be classified into micro, general, and super AI according to cognitive, emotional, and social types. All of these types have common features, and the differences between them often lie in the different uses of AI. (Kaplan and Hanalin, 2019).

But when AI becomes commonplace, sensitivities about it often diminish and it becomes a tool. This phenomenon is described as the "AI effect," which occurs when viewers discount the behavior of an AI program by arguing that it is not real intelligence. As science fiction writer Arthur Clarke put it, "Any sufficiently advanced technology is indistinguishable from but when we understand the technology, the magic disappears" (Carleton et al., 2020).

At regular intervals since the 1950s, experts have predicted that it would be only a few years before we reached artificial general intelligence, that is, systems that exhibit behavior that is indistinguishable from humans in all respects and possess cognitive, emotional, and social intelligence (McCarthy and Hayes, 1981).

But to better understand what is possible, we can look at AI from two angles: the path that has already been taken and what is still ahead of us. We will continue to examine the history of the ups and downs of AI technology, and then we will examine the present and outline the challenges ahead.

2 History of Artificial Intelligence

2.1 The Birth of Artificial Intelligence

Although it is difficult to pinpoint exactly, the origins of artificial intelligence can be traced back to the 1940s, especially 1942, when American science fiction writer. Isaac Asimov (1941) published the short story "The Predicament", "The Predicament" is a story about a robot created by engineers Gregory Powell and Mike Donovan that was developed around the Three Laws of Robotics:

1) A robot may not injure a human being or allow a human being to come to harm.

2) A robot must obey the orders given to it by a human being except where such orders would conflict with the First Law.

3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws. Asimov's work has inspired generations of scientists in the fields of robotics, artificial intelligence, and computer science. Among the cognitive scientists was Marvin Minsk who later became the founder of the MIT Artificial Intelligence Laboratory (Minsky, 1970).

At about the same time, the English mathematician Alan Turing was working on the problems of the Earth and developed an electromechanical computer called the "Bomb" to decipher the codes used in German bombs. This powerful machine was able to break the Enigma code used in German bombs, a task that was impossible even for the best mathematicians of the time. In 1950, Turing published his seminal paper "Computing Machinery and Intelligence" in which he described how to create intelligent machines and, in particular, how to test their intelligence. The Turing test is still used today as a criterion for identifying the intelligence of an artificial system. If a human

being interacts with another human and a machine and is unable to distinguish the machine from the human, the machine is said to be intelligent (Turing and Haglund,1950).

The word artificial intelligence was coined about six years later, in 1956, when Marvin Minsky and John McCarthy (a computer scientist at Stanford) participated in the Dartmouth Research Project on Artificial Intelligence which was funded by the Rockefeller Foundation. (11). They were later called the fathers of artificial intelligence. The project also included scientists such as Nathaniel Rochester who later designed the IBM 70 the first commercial scientific computer, and mathematician Claude Shannon the founder of information theory. The goal of Dartmouth was to reunite researchers from different fields to create a new field of research with the goal of creating machines that could simulate human intelligence (Rajerman, 2014).

2 The Rise and Fall of Artificial Intelligence

The Dartmouth Conference followed a nearly two-decade period of remarkable success in the field of artificial intelligence, exemplified by the famous computer program "Elise," created between 1964 and 1966 by Joseph Weizenbaum (2) at MIT. ELIZA was created as a natural language processing tool that could simulate a conversation with a human and was one of the first programs to pass the Turing test (Natali and Simpson2019).

Another early success story in AI was the General Problem Solving Artificial Intelligence (GPS) program developed by Nobel laureate Herbert Simon (19) and RAND Corporation scientists Cliff Shawand Alan Newell which was able to automatically solve certain types of problems, such as the Towers of Hanoi game (Benko and Lányi. 2009).

As a result of these inspiring successes, significant funding was allocated to AI research, leading to the implementation of more projects. In 1970, Marvin Minsky gave an interview to Life magazine in which he stated that a machine with the general intelligence of an average human could be built within three to eight years. Just three years later, in 1973, the United States Congress expressed strong criticism of the high costs of AI research (Minsky and Papert 1972).

That same year, the English mathematician James Elthill published a report by the UK Scientific Research Council in which he questioned the optimistic outlook of AI researchers. Elitehill argued that machines only reach the level of an experienced amateur at games such as chess, and that commonsense reasoning is always beyond their capabilities (Elitehill, 1973). As a result, the British government ended support for AI research at all research centers except the three universities of Edinburgh, Sussex, and Essex, and the United States government quickly followed suit. This period was the beginning of the AI winter. Although the Japanese government began to spend a lot of money on AI research in the 1980s, which DARPA in the United States responded with increased funding, no further progress was made in the years that followed (Ronald et al., 1993).

3. The Fall of Artificial Intelligence

One of the reasons for the initial lack of progress in the field of AI and the failure to meet expectations is related to the way early systems, such as ELIZA and the General Problem-Solving Program, that attempted to emulate human intelligence performed. Specifically, they were all

expert systems, i.e., sets of rules that simulate human intelligence in a top-down approach as a series of "if-then" statements (Kaplan and Hanalin, 2019).

Expert systems can perform remarkably well, for example, the chess program "Dark Blue", created by IBM in 1997, defeated world champion Garry Kasparov in the process proving one of James Elliott Hill's predictions of 25 years earlier to be wrong. It is said that "Dark Blue" was able to process 200 million possible moves per second and determine the next optimal move using a method called tree search (Campbell et al., 2002).

However, expert systems have also had poor performance in some cases. For example, an expert system cannot be easily trained to recognize faces accurately (Hutson, 2018). 3. Such tasks require a system to be able to correctly interpret external data, learn from this data, and use this learning to achieve specific goals and tasks through flexible adaptation, the characteristics that define artificial intelligence.

Statistical methods for achieving true artificial intelligence have been proposed since the early 1940s, when Canadian psychologist Donald Hebbe proposed a learning theory known as Hebbian learning [1] that mimics the functioning of neurons in the human brain (Hebbe, 1949).

This theory led to the development of research on artificial neural networks. However, when Marvin Minsky and Simon showed that computers did not have the computational processing power required for such artificial neural networks, 47 papers of research on this theory stagnated in 1969.

The topic of artificial neural networks, in the form of deep learning[2], was reintroduced in 2015 with the production of a program called AlphaGo by Google. AlphaGo was able to defeat the world champion in the game of Go. The game of Go is much more complex than chess. For example, at the beginning, there were 20 different possible moves in chess, but this number is 361 in Go.

It was long believed that computers could never beat humans at this game. AlphaGo achieved its excellent performance using a special type of artificial neural network called deep learning (Silver et al., 2016). Today, artificial neural networks and deep learning are the basis of most programs known as artificial intelligence. They are the basis of image recognition algorithms in Facebook, speech recognition algorithms in smart speakers, and navigation algorithms in self-driving cars (Mishra and Srivastava, 2014). These capabilities are the result of past statistical advances in artificial intelligence that we find ourselves in today.

4 Present tense: Review of current topics in the field of artificial intelligence

As mentioned, artificial intelligence is entering human daily life at an increasing pace, like the Internet and social media. Therefore, artificial intelligence not only affects our personal lives but also fundamentally changes the way companies make decisions and interact with their stakeholders, such as employees and customers.

[1] Hebbian
[2] Seymour Papert

The question is what is the role of artificial intelligence in these developments and, more importantly, how can artificial intelligence and human systems work together peacefully. Which decisions should be made by artificial intelligence, which decisions by humans, and Which decisions should be made in cooperation with each other. Issues that all companies must face in today's world.

The most important topics of the day in the field of AI include the relationship between companies and employees or the impact of AI in general on the labor market (Tambe, Copley, & Yakubovich,[1] 2019) economics and management in the next generation of AI (Huang, Rust, & Maksimovich[2], 2019)(4), organizational decision-making structures in the age of AI (Shersta, Ben-Manham, & von Krug, 2019), knowledge gathering through AI to improve business decision-making (Metcalfe, Askay, & Rosenberg, 2019), the extent to which firms use AI in business (Brook & Wangenheim,[3] 2019), the role of AI in marketing (Kumar, Rajan, Venkatsan, & Lechinsky,[4] 2019), and the use of AI to solve marketing problems (Urgur, Chika, & Rando-Vishampel[5], 2019).

3 The Future: The Need for Policymaking

3.1 Policymaking on Algorithms and Organizations

The fact that in the near future, AI systems will increasingly become part of our daily lives raises the question of what regulation is needed and how. Although AI is inherently objective and free from bias, this does not mean that AI-based systems cannot act biasedly.

In fact, due to the nature of AI, any bias present in the input data plays a role in training the AI system and may even be reinforced. For example, research has shown that sensors used in self-driving cars (Wilson, Hoffman, & Morgenstern, 2019) or decision support systems used by judges are better at recognizing light skin tones than dark ones, due to the type of images used to train these algorithms, and this feature may be racially biased (Angwin et al., 2016) Rather than trying to control AI, the best way to prevent such errors is probably to create accepted requirements for training and testing AI algorithms. There is also likely to be a need for some kind of warranty, similar to physical equipment, that provides consistent control.

Even as the technical aspects of AI systems improve over time, another issue is whether companies should be held accountable for errors in the algorithms they produce, or even whether AI engineers should be required to be ethically certified, as lawyers or doctors are. However, such rules cannot prevent the deliberate hacking of AI systems, the unintended use of these systems based on personality traits (Kesinski, Stillwell, & Greipel, 2013), or the production of fake news (Suwajanakorn et al., 2017).

Adding further complexity, deep learning, as a key technique in most AI systems, is inherently a black box. While it is straightforward to assess the quality of the output of such systems. For

[1] Tambe, Cappelli, & Yakubovich
[2] Huang, Rust, & Maksimovic
[3] Brock & Wangenheim
[4] Kumar, Rajan, Venkatesan, & Lecinski
[5] spirit, Overgoor, Chica, Rand, & Weishampel

example, knowing the proportion of correctly classified images makes the deep learning process largely transparent.

The lack of transparency in AI processes can also be intentional, such as when a company wants to keep an algorithm secret or makes it impossible to publish due to technical complexity (Barrell, 2016) In any case, few people may care how Facebook's facial recognition algorithm works, but when AI systems are used to make diagnostic recommendations for skin cancer based on image analysis (Haenssle et al., 2018). understanding how such recommendations are derived becomes crucial.

2 Medium-term outlook: employment regulation

Just as the automation of manufacturing processes has led to the elimination of some tedious jobs, the increasing use of AI will also lead to a reduced need for clerical workers and even high-quality professional jobs. Image processing tools are already better than doctors at diagnosing skin cancer.

In the legal profession, this technology has also eliminated the need for large teams of lawyers to review millions of documents (Markoff, 2016). There have certainly been significant changes in job markets in the past. Such changes as those that have occurred during the Fourth Industrial Revolution, however, are not clear whether new jobs will necessarily be created in other areas to supply workers.

This is related, on the one hand, to the number of potential new jobs, which may be much smaller than the number of jobs lost; and, on the other hand, to the level of skill required for the new jobs. Just as a short story like The Crossroads can be seen as a starting point for artificial intelligence, another story can be more influential in shaping the global picture of unemployment. The fictional novel Snow Crash fall, published by the American author Neal Stephenson, describes a world in which people live their physical lives in storage units, surrounded by technological devices. While their real lives take place in a three-dimensional world called the metaverse where they appear as three-dimensional symbols. As fantastical as this story may seem, recent advances in virtual reality processing, along with past successes in virtual reality (Kaplan and Hanalin, 2009), have made this hobby more widely accepted around the world, making Stephenson's story seem far from utopian. Regulations may be a way to prevent job losses.

For example, firms could spend a certain percentage of the cost savings from implementing automation on training employees to perform new jobs that cannot be automated. Governments may decide to limit the use of automation. In France, self-service systems used by public administration bodies are only accessible during regular business hours. Or, companies may limit the number of working hours per day to distribute the remaining work evenly among the workforce.

3. Macro-Vision: Regulations for Democracy and Peace

AI can be used not only by private institutions or individuals, but also by governments. China is working on a social credit system[1] that combines surveillance, big data, and AI to create a digital

[1] Social Credit System

totalitarian state, allowing trusted individuals to operate freely anywhere in the country[1] while making it difficult for untrustworthy individuals to take a step[2] (Toyama, 2016). In contrast, San Francisco recently banned the use of facial recognition technology (Conger, Faus, & Kowalski, 2019), and researchers are working on solutions that act like a virtual invisibility cloak, making people undetectable to automated surveillance cameras (Thys, Van Ranst, & Godimi, 2019).

While China and, to some extent, the United States are trying to remove barriers to corporate use and research in AI, the European Union has taken the opposite direction by introducing a significantly restrictive General Data Protection Regulation (Voigt & Von dem Bussche,[3] 2017).

This is likely to result in AI development in the EU slowing down compared to other regions, which in turn raises the question of how to balance economic growth with privacy concerns. As a result, international coordination of AI policymaking, similar to that which has been done in the case of money laundering or the arms trade, will be needed. The nature of AI is such that a local solution that affects only a few countries is unlikely to be effective in the long term.

4. Conclusion

No one knows whether AI will allow us to increase our intelligence, as Google's Raymond Kurzweil claims, or whether it will ultimately lead to World War III, a concern raised by Elon Musk However, everyone agrees that it will lead to unique ethical, legal, and philosophical challenges that need to be addressed (Kaplan & Hanalin, 2019).

For decades, ethics has grappled with the trolley problem, a thought experiment in which an imaginary person must choose between inaction that kills many and activity that kills a few (Thomson, 1976). In a world of self-driving cars, these issues will become real choices for machines and their programmers (Awad, D'Souza, Kim, Schulz, Henrich, Sharif, Benfen, & Rahovan, 2018) In response, key players such as Mark Zuckerberg [4] have called for a range of regulations (Zuckerberg, 2019).

But how can we policy-make for a technology that is constantly evolving and that few experts, let alone politicians, fully understand? How can we overcome the vast challenges posed by developments in the developing world to prevent AI from invading all aspects of human life? One solution could be to follow the approach of US Supreme Court Justice Potter Stewart[5] , who in 1964 defined obscenity as "I accept it when I see it" (Barnett v. Volvinoff, 1965).

This approach brings us back to the effect of AI, which we are now quick to take for granted when it was not. Today, there are dozens of different apps that allow users to play chess on their phones. Playing chess against a machine and losing it has become almost unmentionable. Garry Kasparov would probably have had a completely different view of the matter in 1997, a little over 20 years ago. Angwin, J., Larson, J., Mattu, S., & Kirchner, L. (2016). Machine bias: there's software used

[1] Digital Totalitarian State
[2] Digital Totalitarian State
[3] Voigt & Von dem Bussche
[4] Mark Zuckerberg
[5] Potter Stewart

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