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Rule of the Robots: How Artificial Intelligence will Transform Everything - A Critical Book Review

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ABSTRACT

This is a book review of Martin Ford's Rule of the Robots: How Artificial Intelligence Will Transform Everything, published by Basic Books, 2021. ISBN-10: 1541674731; ISBN-13: 978-1541674738.The review provides a critical assessment of this work which focuses on the increasing impact of artificial intelligence, in general, and robots, in specific, regarding human interactions.

Keywords: *Artificial intelligence, deep learning, futurology, job displacement, robots, technology*

INTRODUCTION

This book represents a continuation in the body of literature created by software designer turned futurist, Martin Ford. In 2015, Ford wrote *The Rise of Robots: Technology and the Threat of Mass Unemployment* (Basic Books) which went on to win the prestigious Financial Times and McKinsey Business Book of the Year Award that same year. In that work, the author made an important and persuasive argument of the need to focus attention on the inevitability of massive job displacement of humans that would inevitably come to pass with the advent of an exponential application of artificial intelligence (AI), particularly by way of robotics, humanoid and not. In 2018, he wrote *Architects of Intelligence: The Truth about AI from the People Building It* (Packt Publishing) in which he conducted extensive interviews with twenty-three of the top minds in the field of AI. Some of that research was incorporated into *Rule of the Robots*, where the author further explored the future implications of AI as a potentially disruptive technology that will potentially rival the impact that electricity has had as an omnipresent utility, touching every sphere of human endeavor.

In presenting his thesis, Ford devotes chapters one and two to provide a general history of technology and how technological advances are capable of disrupting, if not altering, the status quo, particularly in the realm of business. In this sweep, he provided a balance by discussing where some promises of technological innovations, leading to societal change, have been overstated. Chapters three, four, and five are then used to present the contemporary state of affairs regarding AI and robotics as well as the need to increase the current AI hardware and software infrastructure. Ford provides a balanced account, focusing on specifics which include the many current limitations within virtual human technology and highlighted this with a robust discussion on the frustration of developing driverless vehicles. The last three chapters become very serious as they address a possible dystopic environment that could develop with a nexus of government and elite corporations imposing a scientific-technological police state grid on its citizenry with the utilization of AI. The author paid particular focus on what he perceived as an escalating threat of this nature developing within Communist China. He also addressed the dangers of AI-generated deep fake audios and videos as well the use of autonomous military robots.

From a business perspective, the most provocative section of the book is actually a continuation and update of Ford's 2015work where he argued that a large portion of the human workforce will eventually be displaced by automation through AI and robotics, particularly those jobs consisting of a fundamentally routine and predictable nature. While virtually all jobs may be threatened in the very long term, the author argues that professions less susceptible in the short run include those that involve high levels of

Physical dexterity (e.g., electricians, plumbers, and construction contractors), and those that require complex interactions or relationships involving compassion, empathy, and the quick recognition of nuances in human behavior. These include, for example, teaching, psychiatric treatment, and long-term nursing care. The author also cites work that requires creativity. Ford, however, appears to contradict himself since the book points out that creativity in competitive play, generated, for example, by DeepMind's AlphaGo software, beat the best professional human players of Go and that AlphaZero achieved the same against the best human competitors in chess. In addition, though it is not in the book, readers should take note that in the past few years, AI was able to create a painting that won first prize over human artists and that Beethoven's unfinished 10th Symphony was completed by AI using the composer's notes and prior works.

Dueling studies, from the business world as well as academia, have argued about the benefits and detriments of AI regarding its economic impact. Ford rightly argues that it is a two-edged sword. Productivity and production (two different animals) are very likely to rise but at the expense of human employment. A common argument (both in the media and academia) in favor of dismissing alarms about job displacement rests on a historical analysis which points out that the percentage of the worldwide population consisting of farmers dramatically decreased as labor-saving innovations in agricultural technology transformed the farming industry and moved farm labor toward urban manufacturing. The manufacturing world then experienced its own technological innovations that reduced the workforce in that sector of the economy and, in the United States, moved manufacturing labor into the service economy. Those providing this historical perspective then argue that an AI-dominated economy will simply shift the labor force to accommodate a world of automation, digital technology, and data science with AI's tentacles imbedded throughout. A particularly egregious example of this came from The Information Technology & Innovation Foundation that, unfortunately, resorted to an *ad hominem* tactic by labeling those concerned with job displacement as Neo-Luddites. However, this is argument is fallacious as a result of context-dropping by simply superimposing the past into the future. As Ford rightfully points out, technological disruptions in the past caused a long-term historical evolution that witnessed resolution on a sector-by-sector basis. In contrast, in the future, AI will impact on *all sectors* of the economy *at the same time* without shifting labor from one sector to another or by creating a new labor-intensive demand for humans, especially with the future widespread use of humanoid robots that will provide interpersonal services.

To deal with this problem, the author has a solution: universal basis income (UBI) which he first espoused in his 2009 book, *The Lights in the Tunnel: Automation, Accelerating Technology and the Economy of the Future* (Acculant Publishing).Unfortunately, despite his long-term advocacy of UBI, little was done in this work to elaborate on what he believes to be a politically palatable solution. For example, he correctly speculates that UBI given to everyone as a guaranteed minimal payment would cost trillions of dollars. However, he did not generate specific, educated estimates and did not consult economists for data for this book to back this plan. The creation of enough fiat money by central banks to finance such a scheme would generate significant hyperinflation as well as possible disincentives to seek employment by the young, at least in the United States and in other cultures where the philosophical zeitgeist has shed the secularized Protestant Work Ethic that would generate a loss of self-esteem through idleness. With UBI, many young adults would simply continue to live under their parents' roof while idling with video games, streaming media, and pseudo social interactions that cater to whim worshipping and self-gratification. While Ford argues that everyone should receive a UBI in this work, he also concedes the gravity of the cost problem and then suggested that those with high incomes or guaranteed income (e.g., pensions, social security, or income from substantial investments) would be exempted from this redistribution program. Given the aging of the United States, it is difficult to believe that senior citizens (who vote in a higher percentage than all other age segments in both primaries and general elections) will find this to be politically palatable. Good books that address public policy should provide good solutions. In applying this standard, Ford failed.

CONCLUSION

The strengths of this book are many. Ford is a very skilled writer who knows how to inform even when dealing with technical discussions as, for example, in chapter five's discussion of deep learning, where the author weaves an insightful comparison of biological versus technical neural networks. The book is fair in its presentation, well-research, and thoughtful in most discussions. Despite the title, the work also avoided a sensationalistic or hyperbolic tone as is sometimes found in some futuristic-oriented discussions presented by brilliant minds as, for example, Stephen Hawking and Elon Musk.

The title of the book is a bit of a misnomer. Actual discussion of robots makes up a small portion of the book, dominating only chapter six, which addresses job displacement. The book is more about the acceleration of AI, in general and, in particular, its application regarding industry automation, the Internet, mobile technology, and the rise of cloud computing. Unfortunately, too much of the book focuses on technological developments within the exclusive domain of the United States. For example, in his discussion of electric vehicles, the author focuses almost exclusively on Tesla while ignoring that company's many rivals in China, including BY, Leapmotor, Li Auto, NIO, and XPeng, with many of these providing competitive technological innovation and not just business competition.

Despite the flaws, the great strength of this work is in generating the need to promote a crucially needed public dialogue regarding the role of AI in the future and how it needs to be monitored and controlled by the public and not by financial elites with their corporatist nexus with the monopoly of coercion that is government. Ford argues that with much contemplation, humanity can move to the relatively utopian society displayed in *Star Trek*. However, to ignore the future and to leave it to a nexus of financial elites and government can lead to the dystopia of *The Matrix* or *The Terminator*.

The exponential in the narrative of Moore's Law indicates that the power of computing doubles approximately every two years. Futurist Ray Kurzweil introduced his own law - the Law of Accelerating Returns - where he predicted that the next one hundred years will generate something equivalent to 20,000 years of progress. His optimism is partly based on his belief that human-level AI can be achieved by 2029. In *Architects of Intelligence,* Ford surveyed over two dozen top minds in AI and found the average guess to be the year 2099, with a range of Kurzweil at 2029 to the year 2200, predicted by Rodney Brooks (iRobot Corporation), who is a foremost roboticist. Whatever the rate of advance, the time is now for awareness, contemplation, and public discourse. The impact of AI is not limited to business considerations. The incorporation of anatomically-correct humanoid robots (andro-ids) will undoubtedly alter society with millions choosing to engage in intimate/ romantic relationships with androids over genetic alternatives for phases of their lives. This will trigger, among other things, the lowering of birth rates, lower tax sources for retirees, and a brain drain from professionals and the affluent who can afford to purchase androids and who will then produce fewer children to succeed them at their occupational level, causing the void in the future to be filled by humanoid robots with near or equivalent human intelligence. The academic literature focusing on this dimension began with David Levy's *Love and Sex with Robots: The Evolution of Human-Robot Relationships* (Harper Collins) in 2009, to Rob Brooks' *Artificial Intimacy: Virtual Friends, Digital Lovers, and Algorithmic Matchmakers* (Columbia University Press) in 2021, and most recently, Elyakim Kislev's *Relationship 5.0: How AI, VR and Robots will Reshape our Emotional Lives* (Oxford Press), published in 2022. Unfortunately, in his second book on robots, the author completely avoided this aspect of future robotics (i.e., the displacement of humans in relationships) that will be as impactful as the displacement of humans in the business world.

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