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RESEARCH OF NOTE: BOOK REVIEW Rise of the Robots: Technology and the Threat of a Jobless Future, by Martin Ford

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RESEARCH OF NOTE: BOOK REVIEWS

Rise of the Robots: Technology and the Threat of a Jobless Future, by Martin Ford, Basic Books, New York, 2015, 352 pp., \$28.99 (hardback), ISBN: 978-0-465-04067-4

Martin Ford has spent much of his writing career chronicling the rise of technology and its potential threat to the workforce. With over 25 years of experience in computer design and software development, he has published in *The New York Times*, *Fortune*, *Forbes*, *The Atlantic*, and *The Washington Post*. His first book, *The Lights in the Tunnel: Automation, Accelerating Technology and the Economy of the Future* (2009), is now followed by his current best seller, *Rise of the Robots: Technology and the Threat of a Jobless Future*.

Rise of the Robots hit all of the bestseller lists last year and was named to many of the popular best business books of 2015 lists, including those for *The New York Times*, *Forbes*, and *NBC News*. *The Financial Times* named the book winner of the 2015 FT & McKinsey Business Book of the Year Award. This well-documented book contributes to the discussion about where our economy is going and provides perspective on our nation's recovery from the Great Recession (December 2007–June 2009).

In between Ford's first and second books much has been written on the rise of technology and some of the possible intended and unintended consequences. The theme of the rise of technology, robotics, and machines usurping workers has been a common focus and a growing concern since Frederick Taylor first published his work *Principles of Scientific Management* in 1911. Discussion about this topic appears to be growing, perhaps partially sparked by the February 2016 *Economic Report to The President* issued by the White House's Council of Economic Advisors (CEA, 2016) that highlighted technology's potential threat to today's workforce.

Ford calls attention to the ever-increasing speed of technological change as the reason for his second book. As reported in *The New York Times*, while unemployment numbers remain low, hovering around 5%, according to the U.S. Department of Labor's report for March 2016, workforce participation has been dropping steadily to its current level of 62.4%. Since jobs are the primary driver of consumer purchasing power, this is an important conversation to have with colleagues and students. Essentially, Ford is asking: What is the end result when technology increases to a point where it makes more and more jobs obsolete? As Ford points out, the jobs in jeopardy are no longer limited to the

blue collar workforce; now even seemingly nonroutine jobs including x-ray technologists, fast food cooks, and health care aides are becoming potential targets. This point is further emphasized in an article in the March 21, 2016, issue of *Business Week* highlighting the rise of robot prototypes in Europe designed to help care for aging seniors (Leiberer, 2016). As increasingly complex, non-routine-decision algorithms are created and tested, exciting new applications for technology are created—ones that often do not require humans to carry them out.

“As jobs and incomes are relentlessly automated away, the bulk of consumers may eventually come to lack the income and purchasing power necessary to drive demand that is critical to sustained economic growth” (p. 196). Ford notes that Henry Ford (no relation) understood this basic concept when he insisted on paying a fair wage for his assembly line workers. Enabling workers to buy the products they created made good business sense and, in principle, helps the economy to run smoothly.

In the United States and other industrialized nations, technology has consistently led us all to a more prosperous future. Martin Ford argues that our future may no longer follow that path. Chronicling the mechanization of agriculture that drove workers from farms to factories, as well as the factory automation that helped to spur globalization and drove workers from factories to service jobs, Ford questions what comes next. Traditionally, “new jobs were created and dispossessed workers found new opportunities. What's more, those new jobs were often better than earlier counterparts, requiring upgraded skills and offering better wages” (p. x). According to Ford, that tradition may be in jeopardy.

Ford argues that special-interest politics, the decline of unions, and the rush toward globalization have all contributed to a well-documented rise in economic inequality. Increasingly sophisticated automation exacerbates the destructive effect of all these other factors. The middle class is shrinking and the ranks of the lower and upper classes are swelling. “As of 2013, a typical production or nonsupervisory worker earned about 13% less than in 1973 (after adjusting for inflation), even as productivity rose by 107 percent and the costs of big-ticket items like housing, education and health care have soared” (p. xi).

Ford argues that most economic indicators point toward the trend that money from profits is being poured back into management and not being funneled into additional labor or increased wages.

In the past it was commonly assumed that automation was specialized and disruption was concentrated in one employment sector at a time: As one sector closed, a new emerging industry was discovered and employment opportunities shifted to that industry. Ford sees quite a different future, in which “virtually every industry in existence is likely to become less labor-intensive as new technology is assimilated into business models” (p. 150). At the same time, the “new industries that emerge will nearly always incorporate powerful labor-saving technology right from their inception” (p. xvi). Ford provides examples of how factory automation has taken cues from the home entertainment industry, such as the advances of Nintendo’s Wii and Xbox’s Kinect with factory automation. In this manner, Ford leads the reader to a conclusion that the robots truly are rising.

Ford’s experience in Silicon Valley enables him to point out that all jobs contain a myriad of decisions that can be transformed into algorithms. Charting the rise of automation and technology, Ford covers familiar territory with the story of U.S. manufacturing moving overseas in order to seek out lower wages. This trend continues as illustrated in an announcement by Nike in June 2013 that “rising wages in Indonesia had negatively impacted its quarterly financial numbers” and that the “long-term solution to that problem is going to be engineering the labor out of the product” (p. 12). Ford argues that this shift is going to continue.

Ford shows that automation can be a threat to higher end jobs. While McDonald’s and Burger King have found ways to use increasing levels of automation, where “fast food workers are integrated into a mechanized assembly-line process with little training required” (p. 209), San Francisco’s Momentum Machines has brought automation to a higher level of hamburger production. Momentum Machines’ fully automated gourmet hamburger production process includes shaping freshly ground beef into patties and then charbroiling them at a rate of 360 burgers per hour—including toasting the bun and slicing all of the fresh condiments to order. As documented by Ford, the purpose of Momentum Machines’ process “isn’t meant to make employees more efficient, it’s meant to completely obviate them” (p. 12).

ATMs, ticket kiosks, Redbox video rental boxes, tableside ordering via video boxes at Red Robin and Chilli’s, and Apple/Google/Samsung pay systems all are accepted as timesaving devices; however, they also have the power to eliminate jobs. The costs associated with these innovations may translate into savings, but these

savings are not automatically translated into lower prices or higher employee wages. More frequently today, cost savings, including those from wages and benefits, go directly to the corporation’s profits.

Citing a myriad of studies and reports detailing the diminishing job creation rate and dwindling full-time labor participation rate that has marked this recession’s recovery, Ford sees the hand of the robot. Particularly surprising was Ford’s finding that “income inequality in America is roughly on a par with that of the Philippines and significantly exceeds that of Egypt, Yemen and Tunisia” (p. 46). According to Ford, the rise of automation reinforces the sentiment that workers are increasingly expendable. As discussed by Schwartz and Irwin (2016) in their article in the *New York Times* detailing the White House’s Council of Economic Advisors’ 2016 Report for the President, such levels of automation can translate into stagnant or even shrinking wages.

It is easy to assume that this income inequality is centered predominately at lower level, blue-collar jobs. However, Ford devotes significant attention to examining white-collar jobs. Focusing on health care and higher education, Ford looks to the future of automation, which he sees moving toward mimicking neural networks in order to simulate more and more complex and higher level decisions. Ford notes, “Powerful artificial-intelligence-based tools make it easier for [less educated] offshore workers to compete with their higher-paid counterparts in developed countries” (p. 119). According to Ford, these developments underline the vulnerability of many of the jobs available today.

Ford points to health care and higher education as the next two automation frontiers. Given the sheer volume of data generated, patient records created and updated, and advancements made, Ford makes a case for the need for artificial intelligence to help drive down costs for health care while potentially increasing the availability of diagnostic information. In 2011, Watson, IBM’s artificial intelligence computer—made famous for its winning run on *Jeopardy!*—was teamed with MD Anderson Cancer Center at the University of Texas to work on mastering medical knowledge in order to create a massive repository of knowledge and decision making. This and similar systems “can act as an interactive adviser to doctors and nurses, offering instantaneous verification of both safety and effectiveness before medication is administered” (p. 150). The power of having medical advances available to all clinicians is undeniable.

At the same time, Ford argues that less glamorous applications for machines are being adopted. Health

care is experiencing a rapid development of machines that check and verify prescriptions and fill and dispense them, and in some cases these prescriptions are sent directly to the correct patient's room in order for the clinician to administer them. As noted earlier, recent developments have turned the focus to using robotics as "affordable machines that can assist in caring for the elderly" (p. 155).

Standardized tests have long been the gateway into higher education, but now, computer-generated and -scored tests and essays based on artificial intelligence techniques and algorithms are being accepted into the academy. Predicting that rising college tuitions will give way to greater acceptance of automation in higher education, Ford points out there are already signs of mechanization in higher education. Automation is already the norm for standardized plagiarism services such as Turnitin.com. And the rise of Massive Open Online Courses (MOOCs) is speeding the acceptance. Citing Clayton Christensen's 2013 work on disruptive technology, Ford points out that "Higher education is one of two major US industries that has, so far, been relatively immune to the impact of accelerating digital technology. Nonetheless, innovations such as MOOCs, automated grading algorithms, and adaptive learning systems offer a relatively promising path toward eventual disruption" (p. 144). A technology that often enrolls tens of thousands of students in a single MOOC class can only be run with additional specialized technology.

Toward the end of the book, Ford puts his warnings in perspective by highlighting the results of several government reports. A May 2014 Bureau of Labor Statistics (BLS) report documented that the total number of jobs lost during this recession (2007–2009) had finally been regained. According to the report, in 1998 U.S. labor contributed 194 billion hours of work. In 2013 the value of goods and services had increased by \$3.2 trillion, an inflation-adjusted increase of 42%, but requiring the same amount of labor—194 billion hours. In citing the report, Ford quotes Shawn Sprague, BLS economist, that "ultimately there was no growth at all in the number of hours worked ... despite the fact that the US population gained over 40 million people" during that same time period, and even though thousands of new businesses were started during the same period (p. 281).

So what is Ford's proposed solution? Traditionally, when jobs have dried up due to technological advances, the recommendation has directed workers to retrain into new jobs or to go back to school. While supporting the ultimate importance of education, Ford also points out

that educating additional people only helps higher education when there are jobs available after graduation.

Ford refers to a 1964 report issued by the Ad Hoc Committee for the Triple Revolution of nuclear weapons, civil rights and runaway automation as a blue print for the future. That group of community leaders had called for "a guaranteed minimum income ... which would 'take the place of patchwork welfare measures'" (p. 31). Ford is calling for this again as a way to ensure that the economy keeps growing despite the lack of job growth. Here is where Ford links education to monetary support. His prescription is to guarantee a base income to current and future workers. College students would receive a prorated income based on how much school they completed. Ford suggests a scaled incentive based on degree level so that students are encouraged to continue learning, rather than drop out of school and accept the basic level of income. While this controversial suggestion has gained some additional attention, there is still a great debate to be had on the merits of expanding established systems to support Ford's proposed solution.

Ford's chronicle of the progression of mechanization and automation is compelling and it provides a welcome perspective concerning the country's ongoing economic rebound. His solution may be a little too revolutionary for some, but it is worthy of some heated classroom and dinner table discussion. The challenge of technology and the role of work is not going to fade away, and those of us who are educators have the opportunity to share Ford's well documented research with our students.

References

- Council of Economic Advisors. (2016, February). *Economic report of the President*. https://www.whitehouse.gov/sites/default/files/docs/ERP_2016_Book_Complete%20JA.pdf
- Ford, M. (2009). *The lights in the tunnel: Automation, accelerating technology and the economy of the future*. New York, NY: CreateSpace Independent Publishing Platform.
- Leiberes, N. (2016, March 21). Europe bets on robots to help care for seniors, *Business Week*, pp. 36–38.
- Schwartz, N., & Irwin, N. (2016, April 2). Jobs and wages notch gains as economy tries to heal. *The New York Times*. <http://www.nytimes.com/2016/04/02/business/economy/jobs-report-unemployment-wages.html>
- Taylor, F. (1911). *Principles of scientific management*. New York, NY: Harper & Brothers.

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