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Book Review: The Technology Trap: Capital, Labor, and Power in the Age of Automation by Carl Benedikt Frey

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Carl Benedikt Frey. *The Technology Trap: Capital, Labor, and Power in the Age of Automation*. Princeton & Oxford: Princeton University Press, 2019. ix + 471 pages. Hardcover, $29.95.

The Technology Trap by the economic historian, Carl Benedikt Frey, is a fascinating account of the history of automation and the attitudes and responses that technological change has engendered. The present volume is an extension of his widely cited study on automation—a 2013 paper co-authored with the technologist, Michael Osborne—that explored the impact of automation and artificial intelligence on American jobs.

In an encapsulation that spans pre-industrial technological creation, the Middle Ages, Renaissance, the age of geographical discoveries, the industrial and computer revolutions, down to the present age of artificial intelligence (AI), Frey examines social and political receptiveness to technological change, determined in large part by how these developments have impacted individual incomes and economic growth.

Through riveting examples across these time frames, Frey argues that whenever technological progress has been "labor-enabling" rather than "labor-replacing," technology has been adopted with little resistance; not so when technological change has meant major workforce disruptions. The resistance to technological change however, has not been limited to workers alone; rulers and political authorities, particularly in the pre-industrial period, often scuttled worker-replacing technologies for fear of social unrest and rebellion (p.55, 57).

The book is divided into five parts, which offers a historical periodization of technological progress and its role in shaping trajectories of economic growth and individual incomes. Part 1 of the book, titled *The Great Stagnation*, explores the preindustrial world which was marked by some of the most significant technological innovations, including writing, the discovery and use of metals, and civil and hydraulic engineering and architecture, and yet, was

an age of economic stagnation, when labor-saving technologies did not necessarily lead to the kind of prosperity that emerged in the eighteenth century. The second part, *The Great Divergence*, examines when the West grew much wealthier than the rest of the world following the industrial revolution. It contrasts the pre-industrial world with the Industrial Revolution, when not only were technologies largely labor-replacing, but had the firm backing of political power, leading to widespread worker resistance and rebellion. *The Great Leveling*, is a captivating account of the coming of the Second Industrial Revolution, accelerated mechanization, the constant mediation by states of conflicting interests of labor and capital, and the rise of the welfare state following the Great Depression and World War II. During this phase, workers rarely if ever targeted accelerating mechanization, which Frey attributes to the fact that the period saw an enormous boost in job opportunities—even where labor was replaced, countless other work opportunities opened up—massive new industries including, automobiles, telephones, household appliances meant an overall decrease in unemployment rates and the rise of a diverse and prosperous middle class "of engineers, machinists, repairmen, conductors, back-office workers, and managers" (p.144). It is this same middle class that is now witnessing a dramatic decline in its fortunes with the coming of the computer revolution, which Part 4 of the book, *The Great Reversal*, seeks to explore. The great reversal began in the 1980s, when the wages of primarily unskilled men, who had earlier been employed in factories, began a downward spiral: Automation led to the elimination of routine jobs in large numbers and the creation of other jobs of much higher skill. Based on this captivating overview of the history of technology and labor, section 5 of the book, *The Future* explores what the coming times will bring for workers—in the present age of AI and machine learning, are we "on the cusp of a series of enabling technological breakthroughs" (p.298) that will lead to a massive creation of jobs or

will current trends continue into the foreseeable future? Frey considers the potential impacts of AI and the possibility of the steady erosion of even skilled jobs, and the concentration of wages in the hands of only a miniscule number of highly skilled technical/managerial workers even as a large proportion of workers find themselves strung at the bottom at far lower wages.

Frey's book makes for a compelling read and is arguably among the most comprehensive accounts of automation from preindustrial times to the present, particularly in the context of the UK and the US. The book argues that while technological change has been among the most important factors in enhancing material living standards over the long run, these changes have engendered major and often debilitating disruptions in the short term—in terms of the sharp losses in wages and living conditions that workers have endured during various periods through the history of automation, which have been diminished in the narratives of the 'overall economic gain and progress' that technology has engendered. In the contemporary age of AI and machine learning, technological change has fueled labor-replacement and massive economic and political disruptions. These present-day disruptions, in turn, have become fodder for America's right-wing, which has been channelizing the anxiety of America's middle class unskilled white male worker—of the loss of factory jobs and material living standards—to bolster its own conservative agendas.

While Frey's book provides among the most nuanced discussions on the historical relationship between technology and labor and the role that this relationship has played in shaping economic history, it is simplistic and determinist in so far as it suggests that new technologies are created in a political vacuum and that the role of governments and workers is merely to respond to or struggle with its impacts. Moreover, while the book attempts to foreground the role that technological change has played in heightening wealth and income

disparities, there is need for a fuller appreciation of the larger political economy that has led to a diminished existence for workers both, skilled and unskilled including the dilution of labor and environmental laws, weakening of unionizing and negotiating power/capacities of workers, declining rates of corporate taxation, among others. However, despite these and other gaps, Frey's book is meticulous in its research and provides an important account of how technology has shaped the world economically, the disruptions it has precipitated, and the material progress it has engendered through the centuries.

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