

AVOIDING THE EXISTENTIAL INJUSTICE OF UNEMPLOYMENT CAUSED BY TECHNOLOGY

by

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A thesis submitted to Johns Hopkins University in conformity with the requirements for the degree of Master of
Bioethics

Baltimore, Maryland

April 2018

ABSTRACT

Many experts predict that artificial intelligence and advanced robotics may replace a substantial number of human workers within the next couple of decades. I contend that the people who lose their jobs to technology may suffer an existential injustice. An existential injustice is defined as one that occurs when a person cannot participate in or is excluded from a fundamental aspect of society – in this case work – through no fault of their own. Current responses to the possibility of widespread unemployment include the argument that technology will enable people to take on better jobs, proposals for improved education and training to prepare workers for the modern job market, and the implementation of a universal basic income to provide for everyone’s basic needs. I argue that these responses fail to recognize the transformative potential of modern technology, perpetuate paid work as a cultural value, or both. Therefore, they will not be sufficient to prevent the existential injustice. A universal basic income is part of an appropriate solution for avoiding the existential injustice, but only if it comes with a change in the cultural importance of paid work. Culture must value nonpaid contributions so that people do not suffer the existential injustice of living in a society that values paid work but does not provide enough jobs.

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INTRODUCTION

This paper will examine the potential of widespread job loss due to artificial intelligence and automation. Researchers have predicted that unlike past technology, modern automation will replace a significant percentage of human workers. Counterarguments and solutions tend to rely on the fact that historical worries about the impact of technology on jobs were overwrought. They also each uphold the idea that work is a cultural value in the United States. Confidence in the historical example and in the value of work will make these solutions ineffectual. I will argue that an ineffective response to unemployment caused by automation will result in existential injustice. I define this as an injustice that occurs when a person cannot participate in or is excluded from a fundamental aspect of society through no fault of their own. Human workers whose jobs are replaced with automation will be unable to work but will live in a culture where work remains a value. In order to avoid the existential injustice, our notion of work, money, and fulfillment must change so that the variety of activities people do that contribute to society are respected in the same way as paid work is now.

I. The Transformational Potential of Artificial Intelligence

In recent years, researchers have projected that automation will likely replace a substantial percent of human workers. Carl Frey and Michael Osborne, economists at Oxford University, made perhaps the most well-known forecast. In 2013, they estimated that 47% of jobs in the U.S. are at risk of automation in the next two decades.¹ Truck drivers and administrative support workers will be among the first employees to be replaced with cashiers, telemarketers, and retail clerks at risk in the longer term.² The global consulting firm McKinsey&Company examined distinct workplace tasks that technology can replace.³ For example, a retail salesperson may stop managing inventory because machines can outperform her at that task. However, a machine cannot recognize that a

¹ Carl Benedikt Frey and Michael A. Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation," September 17, 2013, 38-39, http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf.

² Frey and Osborne, 38-39

³ James Manyika, Michael Chiu et al, "A Future that Works: Automation, Employment, and Productivity," *McKinsey Global Institute*, January 2017, 27, https://www.mckinsey.com/~media/McKinsey/Global%20Themes/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works_Full-report.ashx.

customer is distressed or in need of a glass of water, so the salesperson will still handle face-to-face customer interactions.⁴ A task-centered analysis supports the argument that some work will remain for humans, but just how much is the question. In aggregate the analysis shows that work done by the equivalent of 61 million full time employees can be automated with the accommodation and food services, manufacturing, and transportation and warehousing industries at the highest risk.⁵ Employers may be able to trim their workforce by a sizeable percentage if they can automate so much work.

Yet people have claimed that technology will take jobs from human workers throughout history. For example, in 1589, Queen Elizabeth I of England rejected William Lee's application for a patent of the stocking frame knitting machine. Her supposed reasoning was to protect her subjects' employment prospects, as she said, "Thou aimest high Master Lee. Consider thou what the invention could do to my poor subjects. It would assuredly bring to them ruin by depriving them of employment, thus making them beggars."⁶ Several centuries later, the infamous Luddites smashed machines owned by producers who broke custom by paying low wages or employing workers who had not undergone apprenticeships.⁷ In the 20th century, the Nobel Prize winning economist Wassily Leontief suggested that computers would reduce the labor utility of humans in the same way that tractors had reduced the utility of horses.⁸ In May of 1961, President John F. Kennedy established a new workforce training and retraining program to support workers whose skills had "been made obsolete by automation."⁹ These sorts of historical precedents raise the question, are Frey and Osborne, McKinsey and others just the modern voices of a centuries-old concern?

Technology has consistently improved since the Elizabethan era, but humans still have plenty of jobs to do. This may be reason to dismiss the current predictions about job loss as simply modern iterations of a continual, unfounded worry. From 1919 to 2015 nonfarm employment grew from 27.1 million people to 143.1 million people.

⁴ Manyika and Chiu, 27.

⁵ *Id.*, 44-48.

⁶ Frey and Osborne, 6.

⁷ Richard Coniff, "What the Luddites Really Fought Against," *Smithsonian Magazine*, March 2011, <https://www.smithsonianmag.com/history/what-the-luddites-really-fought-against-264412/?page=2>.

⁸ Holcomb B. Noble, "Wassily Leontief, Economist Who Won a Nobel, Dies at 93," *The New York Times*, Feb 7, 1999, <https://www.nytimes.com/1999/02/07/nyregion/wassily-leontief-economist-who-won-a-nobel-dies-at-93.html>.

⁹ President John F. Kennedy, "Speech delivered in person before a joint session of Congress, May 25, 1961," https://www.jfklibrary.org/Research/Research-Aids/JFK-Speeches/United-States-Congress-Special-Message_19610525.aspx

A century of new technology has not reduced the number of jobs available; instead, average job growth has been two-percent annually for the last 75 years. Second, a more granular look at the data shows that the popularity of industries has fluctuated. Goods-producing industries used to employ more people, but service industries have since surpassed them.¹⁰ Automation in recent years has similarly rearranged the types of jobs people hold. Routine jobs with their explicit and “codifiable” tasks have been automated, leading people to move into service jobs that require in-person interactions and are thus harder to automate.¹¹ This trend may continue over the next century and people may move into new industries rather than be put out of work.

Alternatively, artificial intelligence (AI) may cause a divergence from the historical example. Over 300 artificial intelligence researchers and experts responding to a survey in 2016 predicted that AI will be able to outperform humans in the following activities by the following dates:

- Translating languages by 2024
- Writing a high school essay by 2026
- Driving a truck by 2027
- Writing a bestselling book by 2049
- Performing surgery by 2053¹²

Statistical analysis of the responses showed that researchers gave even odds that ‘high-level machine intelligence’ – “unaided machines that can accomplish every task better and more cheaply than human workers” – will be achieved in 45 years.¹³ That a relatively large group of experts estimate that it is as likely as not that AI will soon outperform humans at every task is telling; the future is uncertain, but the likelihood of powerful AI has the same odds as a coin flip. Whereas automation has thus far replaced routine jobs, machines may eventually outpace humans at abstract jobs that require creativity, communication, and problem-solving ability and manual jobs that necessitate in-person

¹⁰ Lyda Ghanbari and Michael D. McCall, "Current Employment Statistics survey: 100 years of employment, hours, and earnings," *Monthly Labor Review*, U.S. Bureau of Labor Statistics, August 2016, <https://doi.org/10.21916/mlr.2016.38>.

¹¹ David H. Autor and David Dorn, “The Growth of Low-Skill Service Jobs and Polarization of the US Labor Market,” *The American Economic Review* 103, no. 5, (August 2013): 1559, <http://dx.doi.org/10.1257/aer.103.5.1553>.

¹² Katja Grace et al, “When Will AI Exceed Human Performance? Evidence from AI Experts,” eprint arXiv:1705.08807, May 2017, 3.

¹³ Grace et al., 1.

interaction and situational adaptability.¹⁴ AI is the key difference between historical and modern predictions about unemployment caused by technology.

Though AI is a transformative technology, the impact of automation is often framed the same way today as it was in the past. One typical argument is that automation will benefit workers by freeing them from jobs that are dull, dangerous or dirty. In 1966, the National Commission on Technology, Automation, and Economic Progress reported that technology helped workers by increasing productivity and eliminating “many, perhaps all” of the worst types of jobs.¹⁵ The underlying assumption in this argument is that automation brings progress, and that people who no longer have to do the unsafe or dirty jobs will move on to better jobs. Modern automation does not support this line of thinking. Some examples show how industries are perhaps incorrectly promoting the idea that automation will free people from bad jobs.

Walmart is an employer using automation to free employees from dull work. In the description of a short video posted to its corporate YouTube channel, Walmart claims that automation can “handle tasks that are repeatable, predictable, and manual” so workers can “focus on the most important and exciting parts of working at Walmart.”¹⁶ The LoweBot, an autonomous, question-answering, customer service robot created by Lowe’s, is another example. The Bot can help customers with “simple questions” so that employees “can spend more time offering their expertise.”¹⁷ On the one hand, these innovations may benefit employees by permitting them to focus on more interesting aspects of their work. Workers may develop skills, bring more value to the company, and get a raise. On the other hand, suppose that these robots assume ten percent of the work that associates at Walmart or Lowes used to do. Will each associate be able to fill that empty ten percent of their day with valuable work, or will the companies be able to operate with a smaller workforce? Finally, Walmart and Lowes are seemingly automating parts of manual jobs that require in-person interaction and customer service. This may indicate a break in the historical narrative.

¹⁴ David H. Autor, “Why Are There Still So Many Jobs? The History and Future of Workplace Automation,” *Journal of Economic Perspectives*, 29, no. 3, (Summer 2015): 12. <https://pubs.aeaweb.org/doi/pdf/10.1257%2Fjep.29.3.3>.

¹⁵ President Lyndon B. Johnson, “Remarks upon signing bill creating the National Commission on Technology, Automation, and Economic Progress, August 19, 1964,” *The American Presidency Project*, <http://www.presidency.ucsb.edu/ws/?pid=26449>.

¹⁶ “Walmart Tests Automation to Scan Shelves, Free up Time,” October 26, 2017, https://www.youtube.com/watch?v=_j2oh432RFY&lipi=urn%3Ali%3Apage%3Ad_flagship3_pulse_read%3BjAfzIKecQ52K88IWCyn2Ug%3D%3D.

¹⁷ LoweBot, *Lowe’s Innovation Labs*, <http://www.lowesinnovationlabs.com/lowebot>.

Truck driving is another profession that is likely to be automated. In early 2018, a self-driving truck completed the 2,400-mile trip from Los Angeles to Jacksonville, Florida with a human at the wheel to react to any unsafe events.¹⁸ Workers in the “driver/sales workers and truck drivers” occupation class as designated by BLS suffered 918 deaths in 2016, the highest total of any industry.¹⁹ Companies want to make trucking and other driving occupations safer because doing so would save hundreds of lives. Embark, the company behind the coast-to-coast trip in 2018, promotes safety as its “first priority.”²⁰ Uber ATG describes its technology as making trucking safer through the avoidance of hundreds of thousands of preventable accidents that happen each year.²¹ It is worth noting that trucking is a unique industry in that civilians are also impacted when accidents occur. In 2016, 4,300 people died in accidents involving trucks, and the majority of those killed were occupants of other vehicles.²² However, the majority of truckers are not involved in fatal crashes, and drivers with a safe record will lose their jobs when driverless trucks proliferate. Truckers are unlikely to find better jobs when their industry is automated. Their best opportunity for finding work may be in a service job – potentially like those at Walmart or Lowes that are also being automated – with lower pay than they are accustomed to.²³ A service job is safer than a trucking job, but truckers may prefer to keep their jobs than gain incremental safety. Further, self-driving trucks themselves underline the trend-breaking potential of AI. As recently as 2003, driving was not classified as a routine task and therefore was not considered as an activity that could potentially be automated.²⁴ That view has quickly changed.

Perhaps training and education may qualify workers for better jobs. Indeed, skill training programs and post-secondary education are popular solutions. For example, former President Obama’s Executive Office advocated for enhanced computer science courses for primary and secondary schoolers and a clear path to college for all, as

¹⁸ Seth Clevenger, “Embark Self-Driving Truck Completes Coast-to-Coast Test Run,” *Transport Topics*, February 6, 2018, <http://www.ttnews.com/articles/embark-self-driving-truck-completes-coast-coast-test-run>.

¹⁹ Census of Fatal Occupational Injuries Charts, 1992-2016, “Civilian Occupations with high fatal work injury rates, 2016,” 18, *Bureau of Labor Statistics*, Available at: <https://www.bls.gov/iif/oshwc/cfoi/cfch0015.pdf>.

²⁰ “Safety,” *Embark*, <http://embarktrucks.com/safety.html>.

²¹ “The Future of Trucking,” *Uber*, <https://www.uber.com/info/atg/truck/>.

²² “Traffic Safety Facts,” *NHSTA’s National Center for Statistics and Analysis*, February 2018, 1, <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812497>

²³ Autor and Dorn, 23.

²⁴ Frey and Osborne, 15.

well as a six-fold increase in funding for job training programs.²⁵ The Obama plan is a repeat of the workforce training and retraining program for people in “areas where we have seen chronic unemployment as a result of technological factors” established by President Kennedy in 1961.²⁶ It is also a safe and intuitive idea. Sixty-percent of Americans believe that the K-12 public education system “should have a lot of responsibility in making sure that the American workforce has the right skills and education to be successful in today’s economy.”²⁷

Improving K-12 education, access to college, and providing job training seem to be logical ways for future workers to gain the skills they need to advance rather than regress in the face of automation. However, the idea that STEM education and training will work may be outmoded. First, nearly half of college graduates with engineering and technology degrees and one-third with computer and information science degrees do not find work in the field of their major.²⁸ Adding more college graduates to an oversaturated job market would be effective only if a significant number of new STEM jobs are created in the future. Next, education and training imply that everyone will have the interest and capability to acquire advanced skills, which seems unlikely. Finally, many jobs that require education and high levels of skill are at risk of being automated as well. For example, financial software can now instantaneously produce a report that what would take highly-paid Goldman Sachs analysts approximately 40-hours to finish.²⁹ AI recently outperformed experienced attorneys at contract review when measured in both speed and accuracy.³⁰ Even computer science workers are at risk. Google’s AutoML technology is able to write machine-learning code that is more efficient than the code written by human researchers.³¹ AI can even subsume white collar jobs.

²⁵ Executive Office of the President, “Artificial Intelligence, Automation, and the Economy,” December 2016, 30-39, <https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/Artificial-Intelligence-Automation-Economy.PDF>.

²⁶ President John F. Kennedy, “President Kennedy’s Special Message to the Congress on Urgent National Needs,” May 25, 1961, https://www.jfklibrary.org/Research/Research-Aids/JFK-Speeches/United-States-Congress-Special-Message_19610525.aspx

²⁷ Kristen Bialik, “Most Americans say K-12 schools have a lot of responsibility in workforce preparation,” *Pew Research Center*, August 25, 2017, <http://www.pewresearch.org/fact-tank/2017/08/25/most-americans-say-k-12-schools-have-a-lot-of-responsibility-in-workforce-preparation/>

²⁸ Hal Salzman et al., “Guestworkers in the high-skill U.S. labor market: An analysis of supply, employment, and wage trends,” *Report April 24, 2013*, 7, <http://dx.doi.org/doi:10.7282/T379469D>.

²⁹ Nathaniel Popper, “The Robots Are Coming for Wall Street,” *The New York Times Magazine*, February 25, 2016, <https://www.nytimes.com/2016/02/28/magazine/the-robots-are-coming-for-wall-street.html>.

³⁰ Joe Patrice, “Study Confirms: AI Outperforms Experienced Attorneys at Reviewing Contracts,” *Above the Law*, February 26, 2018, <https://abovethelaw.com/2018/02/study-confirms-ai-outperforms-experienced-attorneys-at-reviewing-contracts/>.

³¹ Karla Lant, “Google’s Machine Learning Software Has Learned to Replicate Itself,” *Futurism*, October 16, 2017, <https://futurism.com/googles-machine-learning-software-has-learned-to-replicate-itself/>.

Finally, universal basic income (UBI) is a proposed solution to job loss. UBI is a regular cash payment that is paid universally without behavior or means testing, made to individuals, and of a monetary value sufficient to cover basic needs.³² A UBI has deep historical roots in the U.S. as well, with Thomas Paine introducing a version of the idea in *Agrarian Justice* in 1797.³³ However, it has never been adopted in large part due to the objection that it would act as a disincentive for work. This criticism remains common today. For example, in their opposition to UBI, Brynjolfsson and McAfee quote Voltaire: “Work saves a man from three great evils: boredom, vice, and need.”³⁴ That the authors quote an 18th century writer may be evidence of just how entrenched historical examples have become in peoples’ minds. The idea that people may be better off with a fulfilling, stable job is likely true, but jobs may not exist for many people in the future. UBI is a proposal for a future in which enough jobs do not exist, yet it is often rejected because it may incentivize people not to seek work. The rejection of UBI relies on a belief that technology’s impact on jobs in the future will be similar to its impact in the past. Whereas education and training programs are put forward as solutions because they have worked in the past, a radical solution like UBI is unlikely to be adopted because of well-established ideas that it would lead to laziness. UBI will be part of the solution that I will discuss in more detail in the following sections. However, by itself it is insufficient, mainly due to the fears that it will lead to idleness and purposelessness.

AI and modern automation is likely to replace human workers in a way that breaks from historical precedent. Companies will be able to grow and achieve their goals with fewer workers. Economists Daron Acemoglu from MIT and Pascual Restrepo from Boston University find that the introduction of one robot into a labor market reduces employment in that market by more than six people.³⁵ As an example, the Chanying Precision Technology Company in Dongguan City, China replaced nearly 600 workers with 60 robots and reduced its defects by 80% and increased production by 250%.³⁶ Being a top performer in a workplace like Chanying will not be

³² “About Basic Income,” *Basic Income Earth Network*, <http://basicincome.org/basic-income/>.

³³ “History of Basic Income,” *Basic Income Earth Network*, <http://basicincome.org/basic-income/history/>.

³⁴ Erik Brynjolfsson and Andrew McAfee, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, (New York: W.W. Norton & Company, 2014), 234.

³⁵ Daron Acemoglu and Pascual Restrepo, “Robots and Jobs: Evidence from U.S. Labor Markets,” March 2017, 4, <https://economics.mit.edu/files/12763>.

³⁶ Kristin Houser, “Production Soared After This Factory Replaced 90% of Its Employees With Robots,” *Futurism*, February 9, 2017, <https://futurism.com/2-production-soars-for-chinese-factory-who-replaced-90-of-employees-with-robots/>

enough for a worker to save her job if her company decides to automate. Human work cannot compare with the precision and efficiency of robots.

As the value that human workers provide to companies diminishes, the balance of power in the employee-employer relationship will shift farther towards the employer. Most American workers enter employment relationships that are presumed to be at-will. This type of relationship allows workers to leave their job at any time without facing legal consequences from their employer. Similarly, employers can fire employees at any time for any reason, provided it is legal.³⁷ This status may benefit workers when their skills and labor are in demand. But as more jobs are automated workers may have to take lower salaries or fewer benefits in order to stay employed. Acemoglu and Restrepo also find that between 1993 to 2007, the introduction of one robot per 1,000 workers in a U.S. commuting zone reduced average wages in the zone by 0.73 percent.³⁸ Employers may also be able to use the threat of automation to keep wages in check. In January 2018 the CEO of fast food restaurant Jack in the Box said that automation “makes sense” as the cost of the labor increases.³⁹ Similarly, opponents of raising the middle wage argue that businesses will respond to higher labor costs by replacing workers with cheaper technology.⁴⁰

AI and new automation technologies will upend the traditional labor market. Arguments that technology will free people from bad work, that education and training will provide workers with new skills, and that UBI will make people lazy are rooted in historical evidence that may lose relevance when AI is prevalent. Moreover, these proposals seek to preserve work going forward, and thereby reveal the importance of work in U.S. culture. The perpetuation of a culture of work will lead to a unique form of injustice that will be discussed in further detail in the next section.

II. Towards an Existential Injustice

³⁷ “At-Will Employment,” *Workplace Fairness*, <https://www.workplacefairness.org/at-will-employment>

³⁸ Acemoglu and Restrepo, 34.

³⁹ Kate Taylor, “Fast-food CEO says ‘it just makes sense’ to consider replacing cashiers with machines as minimum wages rise,” *Business Insider*, January 9, 2018, <http://www.businessinsider.com/jack-in-the-box-ceo-reconsiders-automation-kiosks-2018-1>.

⁴⁰ Jack Karsten and Darrell M. West, “Rising minimum wages make automation more cost-effective,” *Brookings*, September 30, 2015, <https://www.brookings.edu/blog/techtank/2015/09/30/rising-minimum-wages-make-automation-more-cost-effective/>

Job loss due to automation will cause an existential injustice. I define an existential injustice as one that occurs when a person cannot participate in or is excluded from a fundamental aspect of society through no fault of their own. The existential injustice in this case will arise when people lose the opportunity to work because the jobs that they have done or have the ability to do are automated. This injustice differs from traditional job loss scenarios such as when someone is let go from her job due to corporate downsizing or is unable to get hired at his dream company. The people in these examples can often find another job; losing a job or not being able to get in at the ideal company does not mean they will never work again. Existential injustice is marked by the absence of an opportunity to work, the elimination of a person's entire job category – trucking for example – rather than the elimination of a person's job at a company. People without a job will have their existence threatened in a practical sense because they cannot meet their basic needs, and on a deeper level because they will be unable to engage with an important social and cultural principle.

Concerns about automation frequently center on its potential to bring about economic inequality. That widespread unemployment might lead to economic inequality is plain. If Frey and Osborne are accurate in projecting that 47% of jobs will be automated in the next two decades, many people will lose their jobs and be unable to find new ones. That many people will lose their income, benefits, the chance to save for retirement, and more, and others will retain those advantages is a clear inequality. However there will likely be levels to the inequality, as some people in the group that loses its jobs will experience negative outcomes more acutely than others.

Workers who are likely to be impacted first are relatively worse off than those whose jobs are less automatable. Researchers at the Institute for Spatial Economic Analysis mapped how geographic areas in the U.S. will fare when automation replaces jobs. They found that cities, including Las Vegas, Riverside, CA and Orlando, FL, that may lose more than 60% of their jobs to automation also have high percentages of low-skill, low-wage jobs. Cities such as Boston and those in the Silicon Valley with a pool of highly-skilled, highly-educated workers are expected to lose less than half of their jobs.⁴¹ So cities that are already better off will retain more of their jobs. Further, within a city – even those like Las Vegas that will lose the highest percentage of jobs – the people who are

⁴¹ Jess Chen, "Future job automation to hit hardest in low wage metropolitan areas like Las Vegas, Orlando and Riverside-San Bernardino," *Institute for Spatial Economic Analysis*, May 3, 2017, <http://www.iseapublish.com/index.php/2017/05/03/future-job-automation-to-hit-hardest-in-low-wage-metropolitan-areas-like-las-vegas-orlando-and-riverside-san-bernardino/>.

already better off are likely to keep their jobs. For example, in Las Vegas, 65% of the jobs are at risk, but those jobs represent just 50% of the total wages in the city.⁴² Low-wage workers are likely to be impacted before high-wage workers.

That automation will more severely impact people in low wage jobs and less affluent cities gets at one aspect of the existential injustice. People whose jobs are replaced will be most often victims of bad luck. Luck egalitarianism is a theory of justice that holds that social inequalities should only come about when a person makes a voluntary choice or exhibits faulty conduct for which they can reasonably be held responsible.⁴³ People will lose their jobs to automation neither by choice nor fault, but because of where they live or the job they hold. In many cases high performing workers will be replaced because they cannot compete against machines. The unfairness of someone who is good at their job still losing it to automation leads to the next point about the existential injustice. The idea that good, hard work would lead to a bad outcome seems to contradict a cultural value in the U.S.

Work is and has been important in the United States. Founding father Benjamin Franklin emphasized the importance of hard work in his writings. He quipped that “time is money” and ascribed to a view that a person who can earn \$10 a day at work should consider taking half of a day off as throwing \$5 away.⁴⁴ The U.S.’s reputation as a country of economic opportunity has attracted immigrants who came for work and a better life; between 1870 and 1900 when the country was industrializing, 12 million people immigrated to the U.S.⁴⁵ In a 1925 speech, President Calvin Coolidge stated, “the chief business of the American people is business. They are profoundly concerned with producing, buying, selling, investing and prospering in the world. I am strongly of opinion that the great majority of people will always find these are moving impulses of our life.”⁴⁶ Ronald Reagan told the country to look for its heroes “going in and out of factory gates” and “across a counter” at a store in his inaugural address in 1981.⁴⁷ The Pew Research Center found in 2015 that 73% of American respondents rated hard work as very important to getting

⁴² *Id.*

⁴³ Richard J. Arneson, “Luck Egalitarianism and Prioritarianism,” *Ethics* 110, no. 2 (January 2000): 339, <https://doi.org/10.1086/233272>.

⁴⁴ Benjamin Franklin, *The Autobiography of Benjamin Franklin and other writings*, (New York: Signet, 1961), 187.

⁴⁵ “Rise of Industrial America, 1876-1900: Immigration to the United States, 1851-1900”, *Library of Congress*, <http://www.loc.gov/teachers/classroommaterials/presentationsandactivities/presentations/timeline/riseind/immigrants/>.

⁴⁶ Calvin Coolidge, “Address to the American Society of Newspaper Editors,” Washington, D.C., January 17, 1925, <http://www.presidency.ucsb.edu/ws/?pid=24180>.

⁴⁷ George Gao, “How do Americans stand out from the rest of the world?” *Pew Research Center*, March 12, 2015, <http://www.pewresearch.org/fact-tank/2015/03/12/how-do-americans-stand-out-from-the-rest-of-the-world/>.

ahead in life, compared to a global median of 50%. The same study found that 57% of Americans compared to a global median of 38% rejected the idea that forces outside their control pretty much determine success.⁴⁸ According to the Center for Economic Policy Research, the U.S is the only country that does not have any legally required paid days off. In contrast, France has 31, New Zealand has 30, the UK has 28, and Japan has ten.⁴⁹

These examples help demonstrate how work is and has been lionized in the U.S. Most Americans expect that they will be successful if they work hard, that individuals can control the direction their lives take and achieve better outcomes with effort. The inverse of this belief is important too. If hard work is valued, then laziness and perhaps even mediocre effort are rejected. The solution for someone who is unsuccessful, has not achieved his goals, or does not have a stable or respectable career may be to work harder. Work may be a reasonable cultural value if people can find jobs and individual effort leads to good outcomes in many cases. Work as a value may need to be reconsidered if it is carried into a future where many people cannot find employment. Unemployed people may strive hopelessly to share in the cultural value of work while simultaneously facing blame from others who may see their joblessness as an abandonment of that value.

Evidence exists that people put in this difficult position experience negative outcomes. In 2015, Anne Case and Angus Deaton published a groundbreaking report in which they identified an increase in mortality among white males aged 45-54 in the U.S. This increase accounted for an estimated 100,000-500,000 avoidable deaths from 1999-2013.⁵⁰ They later linked the uptick to a rise in “deaths of despair,” or deaths by suicide, drugs, or alcohol that occurred because of a lack of economic opportunity for the victims.⁵¹ A similar despair would likely arise in people who are unable to work due to automation, although the scale will be much greater than what Case and Deaton observed. The proposed solutions to automation and job loss detailed in the previous section each perpetuate the value of work and will contribute to the existential injustice. Reconsider those arguments:

⁴⁸ *Id.*

⁴⁹ Rebecca Ray et al, “No-Vacation Nation Revisited,” *Center for Economic and Policy Research*, May 2013, 2, <http://cepr.net/documents/no-vacation-update-2014-04.pdf>.

⁵⁰ Anne Case and Angus Deaton, “Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century,” *PNAS* 112, no. 49, (December 2015): 15078, <https://doi.org/10.1073/pnas.1518393112>.

⁵¹ Anne Case and Sir Angus Deaton, “Mortality and morbidity in the 21st century,” *Brookings Papers on Economic Activity*, Spring 2017, 12, <https://www.brookings.edu/wp-content/uploads/2017/08/casetextsp17bpea.pdf>.

The first argument is that automation will free people from jobs that are dangerous, dull, dirty or otherwise unattractive. In short, humans should not be doing certain jobs, especially once machines are able to do them. Technology is supposed to bring progress and allow people to move on from their undesirable job into something better. However, it is possible that people may lose their dangerous or dull job and not have a better job to ascend to. People may feel useless because the job they were qualified to do was deemed unfavorable enough that a machine should do it instead of them. They may also feel inadequate for not being able to get the better job that technology supposedly freed them to do.

Next, is the proposal that people will learn new skills through training and education programs. It is unlikely that everyone, or even a majority of people, will have the aptitude to develop the skills needed to find new jobs. Also, students' target jobs may always be moving as automation and AI will likely progress faster than they can learn. Further, education and training places the responsibility on the student to do the work necessary for success. Students will expect to come out of their programs qualified for a job. If they are not, it is possible they may feel as if they have failed despite the long odds they faced. The emphasis on education and training may also give people a reason to blame students for a perceived lack of success. People may assume that some graduates who cannot find a job did not study hard enough or take full advantage of the opportunity to learn new skills.

UBI is the final proposal. Even if UBI was implemented, the common objection that work is where people find purpose and earn money would still exist. Unemployed recipients of UBI would likely still experience feelings of inadequacy even though UBI meets their basic needs. Many would retain their belief in the importance of work and strive to find a job. They would also face external pressure from others whose jobs had not yet been impacted by automation and who think unemployed recipients are lazy. The cultural understanding that work is the place where people find purpose and meaning implies that those who do not work are aimless. The basic concept of automation – that machines and AI are able to do a task more efficiently, quickly or cheaply than a human – itself validates the idea that some workers are useless or at the very least not as useful as machines. It is reasonable to assume that many people would feel inadequate for losing their job and for being unable to find a new one even though both events are out of their control. Though UBI shows promise, its implementation alone would likely fail because it does not address the deep-seated issues about the value of work.

Job loss and automation has the potential to lead to an existential injustice whereby people cannot participate in work, an integral part of the culture. Yet the solutions currently proposed to deal with automation will be unlikely to prevent the injustice. People will be unlikely to progress into better jobs when their existing jobs are replaced, and training and education are unlikely to provide people with the types of advanced skills needed to work. And UBI, which should be part of the solution, alone is insufficient because the cultural importance of work will still cause unemployed recipients to feel like they are excluded from society. The next section will discuss how culture must change so that UBI can be effective and the existential injustice can be avoided.

III. Reframing Work

The goal of reframing work is to prevent people who lose their jobs to automation from feeling like they have lost their ability to take part in society as well. The loss of a job and the detachment from culture are the crux of the existential injustice that we need to avoid. A cultural shift in the way that we conceptualize work will avert the injustice and allow people to feel included in important aspects of social life. This shift must be towards a society that values the variety of constructive activities people can do even if those activities do not directly result in personal income.

Suppose that by 2025 20% of people are unemployed due to the impact of automation. An unemployment rate of 20% would be the highest since the Great Depression.⁵² This high unemployment rate has gradually increased for several years. The eligibility period for unemployment insurance in most states has long expired and many people cannot make ends meet. In need of a radical idea, the government authorizes a UBI of \$1,000 per month for each adult. This amount is enough to satisfy recipients' basic needs and does not require them to look for jobs or regularly check in with a local office. How would the 80% of workers whose jobs have not been replaced react to this new policy? Many may resent that unemployed people were being paid without having to work. They may argue that the people had already received the unemployment insurance they were entitled to. Some of them may have been unemployed earlier in their lives and did not need UBI. They may question why working people

⁵² Catherine Rampell, "Unemployment Today vs. the Great Depression," *The New York Times*, January 28, 2010, <http://economix.blogs.nytimes.com/2010/01/28/unemployment-today-vs-the-great-depression/>.

should unconditionally support people who cannot keep a job.⁵³ Won't most of these people just take the money and not bother looking for work? Isn't a system based on individual achievement and hard work what the country was founded on, and hasn't it proven better than any alternative? They may point to the fact that most people are still working as evidence that work is still available for people who want it. They may also question why the response to high unemployment is different now than it was during the Great Depression or the 2007 economic recession. If the country has gotten through difficult times in the past, why should we deviate from our core beliefs now?

These are obviously hypothetical reactions to a hypothetical situation. A recent survey by Northeastern University and Gallup found that 48% of American respondents support UBI and 46% would be willing to pay higher taxes to fund it so perhaps only a slight majority would oppose the implementation UBI.⁵⁴ It may also be possible that fewer people will like UBI when it is closer to becoming a reality and they are facing a higher tax bill. The point of the example however, is to suggest that even UBI, a drastic solution to the problem of widespread job loss, will not be enough on its own. Even when automation contributes to a 20% unemployment rate, many people will still likely revert to the idea that giving people money for free will act as a disincentive to work. UBI will be accepted only if cultural attitudes towards work change.

It seems logical that as more jobs are automated and fewer people are working the cultural importance of work may fade. Cultural values should reflect some truth about a culture. We would expect a society that values education to have good schools and relatively smart citizens. If the government diverts funds to the military instead of schools and citizens' aptitude test scores decline, we may question whether education remains a value. Similarly, if work is no longer a thing that many citizens do, it will likely no longer be considered a value. As up to 47% of jobs are replaced in the next couple of decades, other values may replace work. A gradual change has happened in the past. Susan Cain argues that the cultural shift towards work occurred in the U.S. in the 20th century as the modern business environment emerged. People moved from farms to cities, became employees rather than citizens, and a "Culture of Personality" arose by which popular people were those who projected charm, knew the right things to say, and could sell themselves. This "Culture of Personality" replaced one that had valued honor and

⁵³ It is worth noting that a UBI pilot project is taking place in Stockton, CA using philanthropic funds. Tax payers are not responsible for funding a program that gives people money for nothing.

⁵⁴ RJ Reinhart, "Public Split on Basic Income for Workers Replaced by Robots," *Gallup*, February 26, 2018, <http://news.gallup.com/poll/228194/public-split-basic-income-workers-replaced-robots.aspx>.

discipline.⁵⁵ Maybe over time in a less job-focused society, people will value community work, the arts, crafts, or academic expertise. Paid work may become less important than other productive activities that do not earn the doer money. Yet in the time it takes for ideals to shift naturally, many people will suffer the existential injustice. A more rapid change will be needed so that people whose jobs are automated first are not left behind.

To ensure this shift happens, we will need to reconsider the relationship between work, money, and personal fulfillment. The basic conception currently is that we work in order to earn money and find a sense of purpose or meaning in our lives. Work unmistakably leads to money. However, it is not always the case that work provides a sufficient amount of money for people to live. In 2015 U.S. Census Bureau estimated that 8.6 million people could be classified as working poor, meaning that they were active in the labor force for at least 27 weeks out of the year, but their earnings put them below the federal poverty line.⁵⁶ The remaining people earn at least enough to meet their basic needs. Yet evidence exists that the relationship between pay and job satisfaction is modest; people may be better off giving less weight to salary than other factors when deciding which job to take.⁵⁷ Further, people earning \$50,000 annually report similar levels of positive affect, worry, and stress as people earning over three times as much, indicating that extra money does not improve important measures of wellbeing. Certainly \$50,000 is a relatively high salary, but it is not clear that pursuing a lucrative career makes people happier or leads to lower stress. Certainly, people must be paid for the work that they do, but evidence shows that some nuance exists in the relationship between work and money.

If the relationship between work and money is relatively clear, the connection between work and fulfillment is less so. Gallup conducts a yearly poll that consistently reveals that most Americans are not engaged in their work, and that they exhibit little passion for their jobs; in other words, they only work because they have to.⁵⁸ It is reasonable to assume that a lack of engagement is an indication that a person does not find meaning in their work. If this is true, either most people lead unfulfilled lives, or what is more likely, they find meaning outside of work.

⁵⁵ Susan Cain, *Quiet: The Power of Introverts in a World That Can't Stop Talking*, (New York: Broadway Books, 2012): 20-22.

⁵⁶ "A Profile of the Working Poor, 2015," *Bureau of Labor Statistics*, April 2017, <https://www.bls.gov/opub/reports/working-poor/2015/home.htm>.

⁵⁷ Timothy A. Judge et al, "The relationship between pay and job satisfaction: A meta-analysis of the literature," *Journal of Vocational Behavior*, 77, no 2. (2010): 164. doi:10.1016/j.jvb.2010.04.002.

⁵⁸ Amy Adkins, "Employee Engagement in U.S. Stagnant in 2015," *Gallup*, January 13, 2016, <http://www.gallup.com/poll/188144/employee-engagement-stagnant-2015.aspx>.

Some may object to this by urging people to just do what they love or follow their passion. First, this is likely an unrealistic notion for the majority of people who may take jobs out of need rather than passion. Careers that people are passionate about often are likely to be more selective as well – becoming a trucker is easier than becoming an NBA player or published poet. Next, evidence exists that though we often believe that who we are now is who we will be in the future, but in truth our interests and passions change over time.⁵⁹ A person who gets an MBA at age 25 to become a consultant might find that in ten years they would rather be a dentist. The idea that work leads to fulfillment may not be true.

While it is widely accepted that work leads to money and fulfillment, evidence exists that this model is at least somewhat faulty. If our conception of work has problems currently, automation will upend it completely. When most jobs are automated, work cannot be the way that people support themselves. Neither will work be the means by which people find fulfillment or a sense of purpose. Therefore, we must reconceive the relationship between work, money and fulfillment. In the new model, people will get money first and then have the freedom to pursue their concept of meaningful work with the security that their basic needs are met.

When money comes first and is no longer payment for work done, the definition of work can expand to include activities that traditionally have not earned income. Indeed, feminist ethicists such as Nancy Fraser and Susan Moller Okin have long argued that society should be restructured so that paid work and unpaid work are treated in an equivalent way.⁶⁰ This idea certainly has an intuitive appeal. Consider two people, Amy and Tom. Amy volunteers twenty hours every week at her local food bank, Tom does no volunteer work. Given those sparse descriptions, most people would likely say that Amy's actions are more valuable than Tom's. With more information, we find out that Amy does not have a job and receives Medicaid. Tom does not have a job either, but he lives off proceeds from a trust fund. Now people may view Tom as lucky and lazy, but many more might argue that he is more valuable than Amy because while he does not contribute to society at least he does not take from it. Yet this additional detail does not change the value of Amy's volunteer hours. A basic income would attach value to Amy's volunteer work and other previously unpaid activities such as parenting, working at a homeless shelter or planting a community garden.

⁵⁹ Jordi Quoidbach et al., "The End of History Illusion," *Science* 339, 36 (January 2013): 96, DOI:10.1126/science.1229294

⁶⁰ "Feminist Perspectives on Class and Work," *Stanford Encyclopedia of Philosophy*, September 28, 2016, <https://plato.stanford.edu/entries/feminism-class/>.

This new picture of work will avoid the existential injustice. When the conception of work changes to include activities that are not paid, unemployed people will no longer be excluded from an important aspect of culture. Crucially, work and purpose will still be connected. Work, however, does not have to be the genesis of purpose, it can also be the outcome of purpose. People can create work based on what they view as meaningful and fulfilling. Whereas currently many people may prioritize a stable job they tolerate over a risky job in a field they may love, in the future many more can pursue personally meaningful activities without the nagging concern of money. People will also have the security of knowing that what they are doing is culturally valued. The existential injustice would likely engender despair and feelings of uselessness because people cannot earn money in a society that values paid work. The new conception reduces the likelihood that people will develop these negative feelings. UBI will not be seen as a handout but as a validation that the activities people choose to do are valuable.

However, the concern that free money will excuse people from engaging in a meaningful pursuit remains. Some people will likely take the money and stay at home all day watching TV. Yet most people will take the money and be productive. A randomized controlled trial in western Kenya found that people given unconditional transfers did not stop working and, in many cases, participated in additional activities that generated income.⁶¹ Productivity does not have to be equated to additional money earned, and it seems reasonable to assume that the majority of people will at least engage in some constructive activity. Next, work will remain a cultural value, but a wider range of activities will be considered work. People who receive UBI would have no obligation to do paid work, but they may want to because it has some cultural significance. UBI is important because it is an autonomy enhancing solution. The existential injustice is marked by bad luck and systemic forces that restrict a person's inability to participate in a fundamental part of society, but UBI gives individuals the freedom to work or refrain. Finally, basic needs should be prioritized over meaning or purpose. It is unlikely that a person can find meaning in her life without at minimum having his basic needs met. A person with the security of knowing her basic needs will be met may be more likely to pursue meaningful work than a person who has to worry about making enough money to eat or pay their rent. Perhaps people will feel more of a responsibility to contribute to a society that provides them with a basic standard of living rather than one that excludes them.

⁶¹ Johannes Haushofer and Jeremy Shapiro, "The Short-Term Impact of Unconditional Cash Transfers to the Poor: Experimental Evidence from Kenya," *The Quarterly Journal of Economics* 131, Issue 4 (November 2016): 2025.

IV. Conclusion

AI and advanced robotics have the potential to lead widespread joblessness that is different from anything that has occurred in the past. Ideas that people will find better jobs or that they can develop job skills through enhanced education and training programs are misguided. Even a radical solution like UBI would not be enough. The uniqueness of AI and the inadequacy of the solutions proposed will lead to existential injustice. Many people will be jobless and without realistic prospects of finding a new job but will live in a society that still values work. The existential injustice of being excluded from an integral part of the culture can be avoided if we change the relationship between work, money and fulfillment. The means by which this change can happen deserve more attention, but steps such as schools teaching students that they can contribute as adults in ways other than paid work should help. Once the cultural shift occurs, UBI will fulfill basic needs so that people can contribute to and feel connected to society in a variety of ways, paid or not.

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CURRICULUM VITAE

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