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ARTICLES

SYMPOSIUM: THE FUTURE OF LOW-WAGE WORK

Is There a Future for Work?

Wendi S. Lazar* & Nantiya Ruan†

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"The real question is not whether machines think but whether men do."

-B.F. Skinner

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I. INTRODUCTION

Technological advances and the global economy have redefined employment relationships. The workplace is constantly being reimagined along with the worker's place in it. Of course, this is not the first wave of reformulation: Work has been transformed though the industrialization age of the 1800s, to the electrification times of the early 1900s, the computerization or digitalization era beginning in the 1970s, to the current "Industry 4.0" or "second machine age."¹ This is just the latest wave of advancement that requires reinvention of work and redefined working relationships.

But today, commentators and social scientists are warning that something unique and different is afoot. Information technology and automation permeate most industries, not just a few, giving rise to intelligent self-learning systems, cloud robotics, and deep learning algorithms. However, the unprecedented pace of growth of these technological advancements has resulted in a workforce that simply cannot keep up. A 2013 Oxford University study analyzed 702 occupations and concluded that forty-seven percent of all U.S. jobs are at a high risk of being displaced by technological advances in the next decade or two.² Similarly, a 2015 McKinsey Report found that forty-five percent of work activity tasks are currently capable of being automated.³ An analysis of the revenues and profits of 100 of the largest publicly traded companies in the U.S. from 2001 to 2013 found that while revenues and profits rose considerably during that time period, employee head-count growth lagged far behind.⁴ MIT Professors Erik Brynjolfsson and Andrew McAfee call this the "Great Decoupling," the current era of increasing economic abundance and concurrent deterioration of income and job prospects.⁵ This Article addresses the ramifications of this age of automation on the most vulnerable of workers, and while analysis of comprehensive solutions are beyond the scope of this Article, we suggest strategies that may save us from further erosion of productive work and provide a decent economic future for the poorest of workers.

1. See generally ERIK BRYNJOLFSSON & ANDREW MCAFEE, *RACE AGAINST THE MACHINE* (2011); ERIK BRYNJOLFSSON & ANDREW MCAFEE, *THE SECOND MACHINE AGE, WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES* (2014).

2. *Id.*; see also CARL BENEDIKT FREY & MICHAEL OSBORNE, *THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION* 44 (2013); COMM. ON FOUNDATIONAL BEST PRACTICES FOR MAKING VALUE FOR AM., NAT'L ACAD. OF ENG'G, *MAKING VALUE FOR AMERICA: EMBRACING THE FUTURE OF MANUFACTURING, TECHNOLOGY, AND WORK* 44 (Nicholas M. Donofrio & Kate S. Whitefoot eds., 2015).

3. Michael Chui et al., *Four Fundamentals of Workplace Automation*, MCKINSEY Q. (Nov. 2015), <http://www.mckinsey.com/business-functions/business-technology/our-insights/four-fundamentals-of-workplace-automation>.

4. Howard Schneider, *For Largest U.S. Companies, Jobs Growth Has Lagged Profits, Revenues*, REUTERS (Aug. 11, 2014), <http://www.reuters.com/article/us-usa-economy-employment-insight-idUSKBNO6B0NF20140811>.

5. Amy Bernstein & Anand Raman, *The Great Decoupling: An Interview with Brynjolfsson and McAfee*, HARV. BUS. REV. (June 2015), <https://hbr.org/2015/06/the-great-decoupling>.

II. TODAY'S WORKERS: VULNERABLE, CONTINGENT, AND INSECURE

"Paid work looks very different today from how it did thirty years ago. Mobile workers, telecommuting workers, and dual-worker families have all grown to be commonplace today but were rare or nonexistent before 1980."⁶ Yet many things remain unchanged: The gender pay gap remains unclosed; minimum wages continue to fall behind living wages; immigrant labor is still precarious and dangerous; and government agencies under-enforce workers' legal protections.⁷

Too much work is for poverty wages. According to the U.S. Bureau of Labor Statistics, low-wage workers comprise a full thirty percent of the U.S. workforce, toiling in industries such as healthcare, childcare, retail, and hospitality.⁸ These industries too often employ contingent workers, whose employment is characterized by precariousness and insecurity. They are contract workers, independent contractors, temporary workers, and part-time workers.⁹ Their numbers have grown sixty-six percent in the last decade¹⁰ and they may represent half of the entire workforce in the near future.¹¹

The rise in job insecurity is most recognizable in the "gig economy," which is defined in multiple ways¹² but with the commonality of an "on-demand" workforce that provides no security of position. As Professor Orly Lobel describes it, the gig economy "emerged in a perfect storm" of "[a]dvances in digital technologies, the widespread availability of handheld devices, and ever-increasing high-speed connectivity [that] combined with the realities presented by several cycles of economic downturn, shifts in lifestyle, and generational preferences."¹³ Whether through crowdsourcing work or work-on-demand via app, its impact is undeniable. An estimated twenty to thirty percent of today's workers participate in the gig economy and nearly half of them rely on gig work as their primary source of income.¹⁴

The rise of the gig economy is alarming for what it portends for future work. These "on-demand" jobs eliminate many skilled workers in the new economy.

6. Nantiya Ruan, *Same Law, Different Day: A Survey of the Last Thirty Years of Wage Litigation and Its Impact on Low-Wage Workers*, 30 HOFSTRA LAB. & EMP. L.J. 355, 356 (2013).

7. *Id.*

8. Vincent Fusaro & H. Shaefer, *How Should We Define "Low-Wage" Work? An Analysis Using the Current Population Survey*, MONTHLY LAB. REV. 9 (U.S. Bureau of Lab. Stat., Oct. 2016), <https://www.bls.gov/opub/mlr/2016/article/pdf/how-should-we-define-low-wage-work.pdf>.

9. For a detailed explanation of these types of precarious workers, see Ruan, *Same Law, Different Day*, *supra* note 6, at 358–62.

10. See Lawrence F. Katz & Alan B. Krueger, *The Rise and Nature of Alternative Work Arrangements in the United States, 1995–2015* 8 (Nat'l Bureau of Econ. Research, Working Paper No. 22667, 2016), https://krueger.princeton.edu/sites/default/files/akrueger/files/katz_krueger_cws_-_march_29_20165.pdf.

11. See CHRISTOPHER J. DWYER, ARDENT PARTNERS, *THE STATE OF CONTINGENT WORKFORCE MANAGEMENT 2015–2016: THE FUTURE OF WORK IS HERE* 36 (2015).

12. Elka Torpey & Andrew Hogan, *Working in a gig economy*, (U.S. Bureau of Lab. Stat., May. 2016) (explaining there is "no official definition of the 'gig economy'").

13. Orly Lobel, *The Gig Economy & the Future of Employment and Labor Law*, 51 U.S.F. L. REV. 51, 52 (2017).

14. MCKINSEY GLOB. INST., *INDEPENDENT WORK: CHOICE, NECESSITY, AND THE GIG ECONOMY* 2–3 (2016), <https://www.mckinsey.com/global-themes/employment-and-growth/independent-work-choice-necessity-and-the-gig-economy>.

Automation, retail without brick-and-mortar stores, driverless cars: This expanding technology eliminates current jobs. As the International Bar Association (IBA) recognized in its April 2017 report, there are great advantages to robotics and intelligent algorithms, but the result of such technological advancement is that many jobs, such as “accountant, court clerk or desk officer at fiscal authorities,” will become obsolete.¹⁵

The rate at which jobs will disappear is a matter of some debate. In 2017, the McKinsey Global Institute, which studies the potential effect of automation on employment, published *A Future that Works: Automation, Employment, and Productivity*.¹⁶ The study identified and analyzed 2,000 distinct work activities and concluded that while “only a small percentage of occupations can be fully automated by adapting current technologies,” “some work activities of almost all occupations could be automated.”¹⁷ Factors that determine the pace and extent of automation include: Technical feasibility (when machines have reached the required level of performance in the capabilities required to carry out particular activities); the cost of technology; competition with labor including skills and supply and demand dynamics; performance benefits including and beyond labor cost savings; and social and regulatory acceptance.¹⁸

Most of the analysis on the effects of automation on the workplace as reported in the popular media emanate from studies such as McKinsey’s, which is used to advise corporations on growth initiatives, or from the perspective of the corporate or management-side employment bar, like the IBA.¹⁹ What is missing from most media coverage is its impact on poor workers, who populate unskilled and unpredictable jobs, and meaningful solutions to what may be a worldwide economic disruption. These workers will be most affected by automation and are the least prepared to sustain unemployment, mass changes in the relationship between humans and machine, or to afford the time and expense of retraining.

Moreover, the gig economy is a small part of a bigger issue—the growth of a contingent and unprotected workforce in the U.S., which may not be about automation and job loss per se, but rather a shift in the labor market over the last two decades from full time employees to those who work multiple jobs, shifts, and in alternative work arrangements without health and welfare benefits and basic employment rights.²⁰

15. GERLIND WISSKIRCHEN ET AL., IBA GLOB. EMP. INST., ARTIFICIAL INTELLIGENCE AND ROBOTICS AND THEIR IMPACT ON THE WORKPLACE (2017), <https://www.ibanet.org/Article/NewDetail.aspx?ArticleUid=012a3473-007f-4519-827c-7da56d7e3509>.

16. MCKINSEY GLOB. INST., *A FUTURE THAT WORKS: AUTOMATION, EMPLOYMENT, AND PRODUCTIVITY* (2017), <https://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works>.

17. *Id.* at 4.

18. *Id.* at 10–12.

19. *About MGI*, MCKINSEY & COMPANY, <https://www.mckinsey.com/mgi/overview/about-us>; *About the IBA*, INT’L B. ASS’N, https://www.ibanet.org/About_the_IBA/About_the_IBA.aspx.

20. See, e.g., Nantiya Ruan & Nancy Reichman, *Hours Equity is the New Pay Equity*, 59 VILL. L. REV. 35 (2014); Charlotte Alexander, Anna Haley-Lock & Nantiya Ruan, *Stabilizing Low-Wage Work: Legal Remedies for Unpredictable Work Hours & Income Stability*, 50 HARV. C.R.-C.L. L. REV. 1 (2015); Katz & Krueger, *supra* note 10.

III. LACK OF WORKPLACE PROTECTIONS: EMPLOYMENT STATUS, HIRING DISCRIMINATION, AND LOSS OF PRIVACY IN A BIG DATA WORLD

A. *Why Employee Status Matters for Today's Workforce*

The distinction between employees and nonemployees is a critical threshold issue that has enormous impact on workers' rights. While local and state legislatures have begun to step in and fill protection gaps for vulnerable workers,²¹ absent congressional action, federal common law continues to play catch up. The distinction between workers deemed "employees" and those deemed "independent contractors" has become increasingly critical to the modern American workplace. This misclassification of independent contractors has become a threshold gateway issue that determines who benefits and who loses workplace protection.

Legal protections against workplace discrimination and fair wages and hours largely rely upon a system of private enforcement. By providing statutory fees, in laws such as Title VII²² and the FLSA,²³ the legislature encourages "private attorney generals" to pursue socially desirable litigation, as well as compensate them for their expended efforts and assumed risks in prosecution of these difficult, and sometimes unsuccessful, cases. Early on, the Supreme Court acknowledged the risks undertaken by private attorneys in *Newman v. Piggie Park Enterprises*, where the Court recognized that civil rights laws need attorneys to act as private attorney generals and that the public benefits from their prosecution of these cases.²⁴

In order to enforce worker protection laws, private attorneys are needed to challenge the myriad ways employers try to limit their exposure. For example, because employment laws limit protections of employees, aspiring employees, and former employees (not the contingency workforce as outlined above), employers are incentivized to classify workers as anything but "employees" to avoid workplace regulation. If successful, workers who are deemed something other than employees are excluded from the enacted workplace laws, including: State workers' compensation; minimum wage and overtime (e.g., the Fair Labor Standards Act of 1938 ("FLSA")); anti-discrimination (e.g., the Equal Pay Act of 1963 ("EPA")); Title VII of the Civil Rights Act of 1964 ("Title VII"); the Age Discrimination in Employment Act of 1967 ("ADEA"); and the Americans with Disabilities Act of 1990 ("ADA")); and other various federal legislation setting workplace standards (e.g., the Employee Retirement Income Security Act of 1974 ("ERISA"); the Worker Adjustment and Retraining Notification Act of 1988 ("WARN"); and the Family and Medical Leave Act of 1993 ("FMLA")).

The theoretical distinction between an employee and an independent contractor is that the independent contractor agrees to accomplish particular results, while an employee yields control over her time and efforts to the employer.

21. For example, New York City Human Rights law protects multiple categories beyond the federal anti-discrimination protections, such as job applicants with criminal records. See, e.g., N.Y.C. ADMIN. CODE § 8-107.

22. Title VII of the Civil Rights Act, 42 U.S.C. § 2000 *et seq.* (2012).

23. Fair Labor Standards Act, 29 U.S.C. § 201 *et seq.* (2012).

24. *Newman v. Piggie Park Enters.*, 390 U.S. 400, 402 (1968) (per curiam).

Because various workplace statutes define “employee” broadly and without guidance as how to distinguish between employees and independent contractors, courts developed various tests to determine whether an employment relationship exists. Generally, courts look to the substance and essence of the relationship, and not to the workers’ title or any one fact or circumstance to determine whether an employment relationship exists.²⁵ In differentiating between an employee and an independent contractor, the analysis turns primarily on the extent to which the worker may exercise control over performance of the work. It is not the fact of actual exercise of control by the employer, but rather the existence of the right or authority to interfere or control, which determines whether the worker is an employee or not.²⁶ Litigation in this area is common place, including a rash of cases involving gig economy workers, such as Uber drivers, and their fight for workplace protections.²⁷

B. Employer Control over the Gig Economy Worker.

The type of control gig economy companies have over their workers represents a new workplace dynamic. As gig-economy companies control their workers in new ways, they also retain the traditional leverage of employers. In order for companies in the gig economy to succeed, they need a ready supply of workers that are available “on-demand,” 24/7.²⁸ Companies such as Uber, Instacart, and TaskRabbit must go to great lengths to incentivize their workers to work as much as possible—in bad weather, in the middle of the night, without a stable schedule. For example, the ride-sharing companies Uber and Lyft hired social science and data analysis consultants to find ways to incentivize their drivers to work longer and more often even under duress.²⁹ By mimicking the addicting features of video games in their app, drivers are manipulated into working longer, more often, and at hours that are less lucrative to the drivers but more lucrative to the company.³⁰ This “gamification” of work rewards drivers with badges, high scores, customer satisfaction points to increase work hours at profitable work times, without providing increased remuneration. But because both Uber and Lyft require drivers

25. Federal courts have utilized three different tests in distinguishing between an employee and an independent contractor: (1) the common law “right to control” test; (2) the “economic realities” test; and (3) the hybrid economic realities-common law control test. See, e.g., Deanne M. Mosley & William C. Walter, *The Significance of the Classification of Employment Relationships in Determining Exposure to Liability*, 67 MISS. L.J. 613, 631–32 (1998) (categorizing the various federal court approaches).

26. *Id.*

27. Richard Reibstein, *February/March 2017 Independent Contractor Misclassification and Compliance News Update*, INDEPENDENT CONTRACTOR MISCLASSIFICATION AND COMPLIANCE LEGAL BLOG (Apr. 3, 2017), <https://independentcontractorcompliance.com/2017/04/03/march-2017-independent-contractor-misclassification-and-compliance-news-update/>; Jon Weinberg, *Gig News: Uber Successfully Pursuing State Legislation on Independent Contractor Status*, ON LABOR (Dec. 11, 2015), <http://onlabor.org/gig-news-uber-successfully-pursuing-state-legislation-on-independent-contractor-status/>.

28. See Wendi Lazar, *The Gig Economy: A Threat to Basic Employment Rights*, 257 N.Y. L. J. 3, 4 (2017).

29. *Id.*

30. *Id.* (citing Noam Scheiber, *How Uber Uses Psychological Tricks to Push Its Drivers’ Buttons*, N.Y. TIMES (April 2, 2017), <https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html>).

to have certain customer satisfaction scores to log in to the app and find work, the companies control the ability to work by controlling the reporting of what constitutes unsatisfactory rides.

Another reality of employment relationships in this technological age is that with the growth of subcontracting, franchising, and temporary and other labor agencies, figuring out who is the employer can be a daunting task for many workers. The more actors involved, the less chance workers have of knowing who is responsible for their experience of harassment, lack of paycheck, or unsafe work conditions.³¹ Too often, transient, fly-by-night “jobbers” deliberately scam workers by hiring them out to companies, take an unfair amount of their wages, and sometimes, fail to pay them at all.³²

In these scenarios, the worker must sue a defendant claiming that she (and those similar to her) worked both for the defendant and a third party, but the defendant responds that the plaintiff was employed only by the third party, and not by the defendant. Courts generally view issues of joint employment by looking to the economic realities of the relationship, but have employed different factors for getting to that reality. Under federal anti-discrimination laws, courts utilize similar factors in analyzing joint employment issues, such as whether both entities engage in the hiring, termination, discipline, training, payroll, and other work conditions of the worker.³³

Outsourcing workers to third-party contractors allows companies to argue that it is the intermediary labor agent who is the sole employer on the hook for employment violations, such as unpaid minimum wage or overtime,³⁴ safety,³⁵ and antidiscrimination protection. Yet, these intermediaries are too often operations without resources to pay for back wages, and without a legal argument that they are joint employers with the companies who primarily benefit from workers’ labor, workers can be shut out of recovery.

This situation is made even more difficult with today’s technology that allows for workers to operate in a triangular relationship, whereby the worker provides services to customers who are identified with the help of intermediaries. The intermediary business creates a communications channel, such as an “app,” that customers use to identify themselves as needing a service (e.g., a car ride, home task, or food delivery). Courts struggle with how to identify this employment

31. See CATHERINE RUCKELSHAUS ET AL., WHO’S THE BOSS: RESTORING ACCOUNTABILITY FOR LABOR STANDARDS IN OUTSOURCED WORK, NAT’L EMP’T LAW PROJECT (May 2014), <http://www.nelp.org/content/uploads/2015/03/Whos-the-Boss-Restoring-Accountability-Labor-Standards-Outsourced-Work-Report.pdf?nocdn=1>.

32. See, e.g., *Ansoumana v. Gristede’s Operating Corp.*, 255 F. Supp. 2d 184 (S.D.N.Y. 2003).

33. See, e.g., *EEOC v. Sage Realty Corp.*, 87 F.R.D. 365 (S.D.N.Y. 1980).

34. See also *Ansoumana*, 255 F. Supp. 2d at 194–95 (finding that drug store corporation and labor contractor were joint employers of delivery workers because the drugstore and contractor had a regular relationship, workers performed an integral service to the stores, deliveries were made directly to the stores, and drugstores had control over the workers).

35. See, e.g., Letter from Senator Robert P. Casey, Jr., to Assistant Secretary of Labor David Michaels (July 10, 2014), <http://www.casey.senate.gov/newsroom/releases/casey-presses-oshas-on-safety-protections-for-temp-workers> (discussing “possible regulatory or legislative impediments to OSHA’s ability to ensure safe and healthy workplaces for temporary workers.”)

relationship, with workers bearing the brunt of the lapse of workplace protections.³⁶

C. Technology Allows for New Ways to Discriminate

Meanwhile, today's workforce must also contend with other advancing technologies, such as cloud computing,³⁷ automation,³⁸ and artificial intelligence,³⁹ that affect their recruiting, hiring, and promotion opportunities along with their work conditions in the virtual and physical workplaces.

Increasingly, potential employers are using "big data" to determine who to interview, recruit, hire, and promote. Simply put, firms are using data analytics to target and reward "promising" employees.⁴⁰ By gathering and sifting through the huge amounts of information available online on potential and current employees, employers engage in "data mining" to focus on certain identified criteria. This can reproduce existing patterns of discrimination: Unconscious and implicit bias as well as established prejudices, including reproducing existing stereotypes and widespread societal biases. As Professor Pauline Kim observed, our current anti-discrimination laws are not up for the challenge of protecting against this type of discrimination.⁴¹

Although the White House released a report titled, *Big Data: Seizing Opportunities, Preserving Values*,⁴² identifying the unintended discriminatory effects of data mining, government enforcement or updated legislation is not likely from the current administration and political climate. Again, it is up to the private attorney to make the connections between big data, data mining, and unlawful disparate impact on protected workers.

For example, the authors' firm, Outten & Golden LLP, represents plaintiffs challenging discriminatory advertising that disparately impacts people of color and older workers. In *Onuoha v. Facebook*, the plaintiffs are people of color challenging the company's platform that allows advertisers to target or exclude users based on race, national origin and location.⁴³ In this class action, the plaintiffs allege that Facebook violated Title VII, the Fair Housing Act, and the

36. See RUCKELSHAUS ET AL., *supra* note 31.

37. See Benjamin D. Johnson, *There's No Place Like Work: How Modern Technology Is Changing the Judiciary's Approach to Work-at-Home Arrangements As an ADA Accommodation*, 49 U. RICH. L. REV. 1229, 1240–41 (2015) (defining cloud technology or cloud computing as the virtual storage of information on a network as opposed to a computer's physical hard drive).

38. See *What is Automation?*, INT'L SOC'Y OF AUTOMATION, <https://www.isa.org/about-isa/what-is-automation> (last visited Mar. 15, 2018) (defining automation as "the creation and application of technology to monitor and control the production and delivery of products and services").

39. See Sean Semmler & Zeeve Rose, *Artificial Intelligence: Application Today and Implications Tomorrow*, 16 DUKE L. & TECH. REV. 85, 86 (2017) (defining artificial intelligence as the process of simulating human intelligence through machine processes).

40. Allan G. King & Marko J. Mrkonich, *"Big Data" and the Risk of Employment Discrimination*, 68 OKLA. L. REV. 555, 555 (2016).

41. Pauline T. Kim, *Data-Driven Discrimination at Work*, 58 WM. & MARY L. REV. 857, 857 (2017).

42. EXEC. OFFICE OF THE PRESIDENT, *BIG DATA: SEIZING OPPORTUNITIES, PRESERVING VALUES* (2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/big_data_privacy_report_may_1_2014.pdf.

43. See *Onuoha v. Facebook, Inc.*, No. 16-cv-06440-EJD, 2017 BL 115835 (N.D. Cal. Jan. 8, 2018).

Equal Credit Opportunity Act, by developing a platform that allows advertisers to target ads for specific “ethnic affinities,” which allows advertisers to exclude certain users from employment, housing, and credit opportunities in violation of anti-discrimination laws. Additionally, the firm brought a defendant class lawsuit on behalf of the Communications Workers of America (CWA) and three workers against T-Mobile US, Amazon, Cox Communications and Media Group, and hundreds of other large employers and employment agencies who allegedly engaged in the unlawful practice of excluding older workers from receiving job ads on Facebook for open positions at their companies.⁴⁴ The lawsuit challenges how Facebook’s paid ad platform is allegedly being used to hide job ads and opportunities from older workers nationally. The complaint alleges that hundreds of employers and employment agencies are illegally targeting their employment ads on Facebook to exclude older workers who fall outside specified age ranges (such as ages eighteen to forty, or ages twenty-two to forty-five), purposely preventing these older workers from seeing the ads or pursuing job opportunities, in violation of federal, state, and local laws that bar age discrimination in employment advertising, recruiting, and hiring.

D. Losing Privacy in the New Workplace

Another consequence of data mining and the push to collect massive amounts of analyzable data on potential and current employees is the potential for privacy violations. Privacy advocates liken big data to digital surveillance. Most casual internet and other technology users do not comprehend the extent to which such use generates data that is being collected, analyzed, and put to use.⁴⁵ For businesses, hiring companies use data analytics to determine the “best” candidate, while also studying their current employees’ behavior in “every e-mail, instant message, phone call, line of written code and mouse-click,” to mine these digital signals for insights into how people work and communicate.⁴⁶

The problem, as some privacy advocates have identified, is that these digital signals are being collected and mined “essentially behind a one-way mirror,”⁴⁷ and employees do not know what data is being collected and how it is used. As companies invest more heavily in “data-driven decision making in human resources,” its most common application is to examine the data generated by hourly workers, such as call center workers, making the vulnerable workers the guinea pigs for study.⁴⁸

44. See Peter Romer-Friedman, *Class Action Lawsuit Hits T-Mobile, Amazon, Cox and Hundreds of Large Employers for Allegedly Using Facebook to Exclude Millions of Older Americans from Job Ads in Violation of Age Discrimination Laws*, OUTTEN & GOLDEN LLP (Dec. 20, 2017), <https://www.onlineagediscrimination.com> (discussing *Comm’n Workers of Am. v. T-Mobile US, Inc.*, No. 5:17-cv-07232, N.D. Cal.).

45. See, e.g., Anita L. Allen, *Protecting One’s Own Privacy in a Big Data Economy*, 130 HARV. L. REV. F. 71, 71–72 (2016).

46. Steve Lohr, *Big Data, Trying to Build Better Workers*, N.Y. TIMES (Apr. 20, 2013), <http://www.nytimes.com/2013/04/21/technology/big-data-trying-to-build-better-workers.html>.

47. *Id.* (quoting Marc Rotenberg, executive director of the Electronic Privacy Information Center).

48. *Id.*

Technological advances allow employers not only to investigate and study their work habits, but also to monitor their movement and demand open availability to work, which reflects the new type of control companies now have over their workforce. Pagers, smart phones, laptops, and their corresponding connectivity enable employers to contact their workers at any time, as well as monitor their work and how far they are from designated worksites. Some workers are expected to be constantly available for check-ins and shift changes for changing employer needs, as the 24/7 workplace demands.⁴⁹ Because low-wage work is insecure and precarious (whether because employers are quick to replace workers or see them as fungible, or because probation or immigration status makes them at risk), hourly workers are not in a position to challenge this constant monitoring, given the precarious and insecure nature of their jobs.⁵⁰

IV. STRATEGIES FOR FAIR WORKPLACES IN INDUSTRY 4.0

For hourly workers to meaningfully participate in today's workplace, a new set of freshly conceived workplace protections is needed. First, the old system of employment status that makes certain employment benefits contingent on "control" factors is obsolete for too many workers. A new category of worker is needed to address the gaps in protection that technology advances have created for certain workers. In one proposal for gig economy workers, professors Seth Harris and Alan Krueger coined the term "Independent Worker"⁵¹ as a group of workers in need of workplace protections because they occupy the space between employees and independent contractors. These types of gig economy workers would receive a more robust set of benefits and protections, including the freedom to organize and collectively bargain, civil rights protections, tax withholding, and employer contributions for payroll taxes, although they would miss out on other workplace protections, such as minimum wages and premium overtime pay.⁵² This is a significant shortcoming of the proposal given the most recent study that found that Uber and Lyft drivers earn a median profit of \$3.37 per hour.⁵³

The concept of portable benefits is another strategy for workers who have multiple, part-time jobs and are not receiving any benefits for their health and welfare. In a portable system, these workers would receive important benefits (such as health care, unemployment insurance, and sick leave) that are tied to the worker themselves, not to their employer or employment status. Federal and state legislation is being drafted to address the benefits shortfall experienced by hourly

49. Nantiya Ruan, *Corporate Masters & Low-Wage Servants: The Social Control of Workers in Poverty*, 24 WASH. & LEE J. CIVIL RTS. & SOC. JUST. 103, 157–58 (2017).

50. *Id.* at 159–60.

51. Seth D. Harris & Alan B. Krueger, Hamilton Project, A Proposal for Modernizing Labor Laws for Twenty-First Century Work: The "Independent Worker" 5 (Dec. 2015), http://www.hamiltonproject.org/assets/files/modernizing_labor_laws_for_twenty_first_century_work_krueger_harris.pdf.

52. *Id.*

53. Stephen M. Zoepf et al., The Economics of Ride-Hailing: Driver Revenue, Expenses and Taxes (Mass. Inst. of Tech., CEEPR Working Paper 2018-005), <https://web.archive.org/web/20180302041610/http://ceepr.mit.edu/files/papers/2018-005-Brief.pdf>.

part-time workers,⁵⁴ and in cities such as New York and Seattle, pilot programs are underway to test the effectiveness of such a system.⁵⁵ Entrepreneur Nick Hanauer and Service Employees International Union international vice president David Rolf propose a different approach for a “Shared Security System”⁵⁶—essentially, a mandatory, universal Social Security-like system that provides employment benefits paid directly from workers’ pay, including health insurance, worker’s compensation, unemployment, paid leave and sick days, retirement matching, as well as Social Security and Medicare.⁵⁷ While addressing the mobility and benefits question, the proposal presents challenges for certain income earners.

On a broader scale, current hourly work will require reinvention in this second machine age. In essence, “redeployment” is needed to find ways of working with and for machines. Professors Brynjolfsson and McAfee suggest short-term investments in education reform, entrepreneurship, and refinement of job matching systems.⁵⁸ Education reformists have been calling out for more STEM-focused education to equip and enable the next generation of workers, such as IBM’s P-TECH⁵⁹ and The Gates Foundation.⁶⁰

Another strategy takes a broad approach by reimagining the social contract of work and forecasts that the way we think about work and income needs a reboot. For example, “universal basic income” would provide adults with an amount of money necessary to meet basic needs regardless of whether a recipient is employed or unemployed; it is not tied to nor dependent on an individual’s economic status. Silicon Valley CEOs Elon Musk (of Tesla) and Mark Zuckerberg (of Facebook) are advocates of universal basic income. As noted by Professor Yvonne Stevens, universal basic income is not a new concept; its proponents include Nobel laureates Bertrand Russell and Milton Friedman as well as Martin Luther King, Jr.⁶¹

According to the Organization for Economic Development (OECD), although no country has instituted universal basic income as “a principal pillar of income support for the working-age population,” several countries are experimenting with the idea, including Finland, the Netherlands, Kenya, and Canada, as well as select cities in the United States, such as Oakland, California.⁶²

54. Natalie Foster & Libby Reder, *New Federal Portable Benefits Legislation Follows State and Local Bills*, ASPEN INST. (May 25, 2017), <https://www.aspeninstitute.org/blog-posts/new-federal-portable-benefits-legislation-follows-state-local-bills/>.

55. Sophie Quinton, *With Growth of the Gig Economy, States Rethink How Workers Get Benefits*, PEW CHARITABLE TRUSTS (Feb. 22, 2017), <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2017/02/22/with-growth-of-the-gig-economy-states-rethink-how-workers-get-benefits>.

56. Nick Hanauer & David Rolf, *Shared Security, Shared Growth*, 37 NEW REPUBLIC (2015), <https://democracyjournal.org/magazine/37/shared-security-shared-growth/>.

57. *Id.*

58. Sonya James, *Q&A: Andrew McAfee & Erik Brynjolfsson, co-authors of The Second Machine Age*, (Mar. 7, 2014), <https://www.zdnet.com/article/qa-andrew-mcafee-erik-brynjolfsson-co-authors-of-the-second-machine-age/>.

59. *Four Skills We Should Teach our Students for the Tech Jobs of the Future*, IBM (Feb. 25, 2018), <https://www.ibm.com/blogs/policy/four-skills-we-should-teach-our-students-for-the-jobs-of-the-future/>.

60. BILL & MELINDA GATES FOUND., <https://www.gatesfoundation.org/> (last visited Mar. 15, 2018).

61. Yvonne A. Stevens, *The Future: Innovation and Jobs*, 56 JURIMETRICS J. 367, 374 (2016).

62. Elizabeth Schulze, *Why Some Countries Are Seriously Considering Handing Out Free Money*, CNBC (Dec. 28, 2017), <https://www.cnbc.com/2017/12/28/universal-basic-income-why-some-countries->

On the subject of data mining and data privacy, the U.S. does not regulate employees' data, nor protect their information from widespread abuse (including discriminatory abuse) and illegal distribution, as is common in other industrialized nations, such as those in the European Union.⁶³ While the courts long ago established that there is no expectation of privacy in the private workplace, the laws deciding that issue date back to a pre-computer age when data was contained in paper files.⁶⁴ Efforts have been made to formulate a federal data protection policy,⁶⁵ but to date little has been done to accomplish this leaving workers more vulnerable to abuse than consumers.

V. CONCLUSION

Fundamentally, given the extent and breadth of the newest technological advancements and workplace changes, a new social compact between workers and the businesses they serve is required. The current "great decoupling" reflects the new reality of increasing economic abundance and deteriorating income and job prospects,⁶⁶ which requires a rethinking of labor and worker rights.

While there is overwhelming evidence that automation and robotics will change the workplace as we know it, the workplace has already undergone a tectonic shift and few in Washington, in the business community or in state governments have given any credence to what may be the reality of work in the future and the failure of our twenty-first century economy to provide for the vast number of contingent workers, the jobless and big data abuse. Further, the on-call, on-demand workers who have no control over their work, no social or economic guarantees, civil rights protections, or health and safety benefits, are replacing stable jobs with benefits and basic protections at a pace that will continue to redefine the worker and its relationship to the state.

Ultimately, how well we prepare for the future of work will be the reality of how well we live in the future. The future of work is vulnerable at best—chaotic at worst. Whether we co-exist peacefully and productively with technology, as *Star Wars* predicted, or, whether we produce a chaotic and desolate future where poverty and chaos exist, as portrayed in *Mad Max*, is the question.

are-seriously-considering-handing-out-free-money.html; Brad Jones, *People in Two U.S. States Will Get \$1,000 a Month in a New Basic Income Trial*, FUTURISM (Sept. 21, 2017), <https://futurism.com/people-in-two-u-s-states-will-get-1000-a-month-in-a-new-basic-income-trial/>.

63. See Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the Protection of Individuals with Regard to the Processing of Personal Data and on the Free Movement of Such Data, 1995 O.J. (L 281) 31, 32.

64. See *Katz v. United States*, 389 U.S. 347, 360–61 (1967); *O'Connor v. Ortega*, 480 U.S. 709, 726 (1987) (articulating a Fourth Amendment balancing test for public employee privacy); see also Matthew T. Bodie et al., *The Law and Policy of People Analytics*, 88 U. COLO. L. REV. 961, 985 (2017) ("While workers clearly give up many privacy expectations when they start working with a new organization, they still have not given up their common-law rights against 'highly offensive' intrusions into their private lives."); Patricia Sánchez Abril et al., *Blurred Boundaries: Social Media Privacy and the Twenty-First-Century Employee*, 49 AM. BUS. L.J. 63, 71 (2012) ("Workplace privacy is not an employee right, but a restriction placed upon the employer's property rights.").

65. See FED. TRADE COMM'N, PROTECTING CONSUMER PRIVACY IN AN ERA OF RAPID CHANGE (2012), <https://www.ftc.gov/sites/default/files/documents/reports/federal-trade-commission-report-protecting-consumer-privacy-era-rapid-change-recommendations/120326privacyreport.pdf>.

66. Bernstein & Raman, *supra* note 5.