

REENGINEERING WORKPLACE BARGAINING: HOW BIG DATA DRIVES LOWER WAGES AND HOW REFRAMING LABOR LAW CAN RESTORE INFORMATION EQUALITY IN THE WORKPLACE

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Abstract

While there has been a flurry of new scholarship on how employer use of data analysis may lead to subtle but potentially devastating individual discrimination in employment systems, there has been far less attention to the ways the deployment of big data may be driving down wages for most workers, including those who manage to be hired. This article details the ways big data can, and in many cases is, actively being deployed to lower wages through hiring practices, in the ways raises are now being offered, and in the ways workplaces are organized (and disorganized) to lower employee bargaining power—and how new interpretations of labor law are beginning to and can in the future reshape the workplace to address these economic harms.

Data analysis is increasingly helping to lower wages in companies beginning in the hiring process where pre-hire personality testing helps employers screen out employees who will agitate for higher wages and organize or support unionization drives in their companies. For employees who are hired, companies have massively expanded data-driven workplace surveillance that allows employers to assess which employees are most likely to leave and thereby limit pay increases largely to them, lowering wages over time for workers either less able to find new employment because of their age or less inclined in general to risk doing so. Data analysis and so-called “algorithmic management” has also allowed the centralized monitoring of far-flung workers organized nominally in subcontractors or as individual contractors, while traditional firms such as in retail implement data-driven scheduling that resembles the “on-demand” employment of independent contractors. All of this shifts risk and “downtime” costs to employees and lowers their take-home pay, even as the fragmenting of the workplace makes it harder for workers to collectively organize for higher wages.

This article addresses how we should rethink and interpret existing labor law in each of these aspects of the employment process. The

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NLRB can reasonably construe many pre-hire employment tests as violating federal labor law's prohibition of screening out union sympathizers, much as the EEOC has found many personality tests violate the Americans with Disabilities Act by allowing indirect identification of people with mental illness. Similarly, since big-data analysis can reveal pro-union sympathies of current employees, under existing prohibitions of "polling" employees for their views, a reasonable extension of the law would be to prohibit sharing any personal data collected by management that might reveal protected conduct or union sympathies with line managers or outside management consultants involved in advising in labor campaigns. The Board can also level the informational playing field by making both hiring algorithms and those determining pay increases more available during collective bargaining. The Board under the Obama Administration began moving to expand its "joint-employer" doctrine to allow workers to challenge the fragmented workplace increasingly driven by algorithmic management and a clear recognition that algorithms establish exactly the control of nominally independent contractors or subcontractor's workers that entitle them to collective bargaining rights with a central employer, strengthening worker bargaining power.

Such a "collective-action" approach to the problem is far more likely to succeed than other proposals focused on strengthening individual worker privacy or anti-discrimination rights in the workplace in regards to data-driven decision-making. As scholars have noted, disadvantaged groups under the civil rights laws may have sharply different preferences in wage versus benefit packages, so a process that increases informational resources for all workers and allows them to negotiate together for the mix of wages, benefits, work conditions and other "public goods" in the workplace, including privacy protections, will better reflect the overall interests of employees than in either a classic economic model based on a marginal worker's "exit" or a "rights-consciousness" litigation approach to rein in individual employment harms. In making this overall argument, the article partially addresses the debate on why wages have stagnated and even fallen below productivity gains over the last four decades as the deployment of data technology has played a significant and growing role in helping employers extract a disproportionate share of employee productivity gains to the benefit of management and shareholders.

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I. INTRODUCTION

While there has been a flurry of new scholarship on how employer use of data analysis may lead to subtle but potentially devastating individual discrimination in employment systems,¹ far less attention has been focused on the ways the deployment of big data may be driving down wages for most workers. Over what is now approaching two generations, we have seen a massive increase in economic inequality, catalyzed by general wage stagnation and sharp decreases in wages for many categories of workers.² There is good evidence, as this article details, that part of the problem is the way big-data analysis can be, and in many cases actually is, actively deployed to lower wages through hiring practices, in how raises are offered and in how workplaces are organized (and disorganized) to lower employee bargaining power. If earlier rounds of technology focused on increasing productivity in industrial work processes, where gains in productivity were shared between workers and capital owners, a large focus of modern information technology has instead focused on reengineering the

1. Latanya Sweeney, *Discrimination in Online Ad Delivery*, 56 COMMUNICATIONS OF THE ACM 44, 52 (2013) (Finding discriminatory “delivery of ads suggestive of an arrest record based on searches of racially associated names.”); Amit Datta et al., *Automated Experiments on Ad Privacy Settings: A Tale of Opacity, Choice, and Discrimination*, 1 PROCEEDINGS ON PRIVACY ENHANCING TECHNOLOGIES 92, 102 (2015) (Finding that when search preferences indicated a female, viewer saw “fewer instances of an ad encouraging the taking of high paying jobs than [when preferences were set to] male[.]”); see generally Solon Barocas & Andrew D. Selbst, *Big Data’s Disparate Impact*, 104 CAL. L. REV. 671 (2016); Frank Pasquale & Danielle Keats Citron, *Promoting Innovation While Preventing Discrimination: Policy Goals for the Scored Society*, 89 WASH. L. REV. 1413, 1413–14 (2014) (discussing anti-discriminatory policy goals that arise in the context of the “proliferation of networked identities and selves”); Danah Boyd & Kate Crawford, *Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon*, 15 INFO., COMM. & SOC’Y 662, 666–68 (2012); EXEC. OFFICE OF THE PRESIDENT, *BIG DATA: SEIZING OPPORTUNITIES, PRESERVING VALUES* 51–53 (May 2014); Alex Rosenblat, Kate Wikelius, Danah Boyd, Seeta Peña Gangadharan, & Corrine Yu, *Data & Civil Rights: Employment Primer*, DATA & CIVIL RIGHTS CONF. (Oct. 2014), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2541512.

2. Elise Gould, *2014 Continues a 35-Year Trend of Broad-Based Wage Stagnation*, ECON. POL’Y INST. REPORT (Feb. 19, 2015), <http://www.epi.org/publication/stagnant-wages-in-2014/>.

bargaining process itself to increase the information advantage of employers in bargaining over that surplus, thereby increasing the economic gains of employers at the expense of their employees. The article outlines how new interpretations of federal labor law are beginning to, and can in the future, reshape the workplace to address these economic harms by equalizing information and thereby rebalance the bargaining process.

Part II details how more and more companies scan social media and administer personality tests before hiring anyone. This section shows how this not only hurts many individual people, but also allows companies to use algorithms to decide how to systematically weed out people who might agitate on behalf of all employees for higher wages. With big data, the best way to defeat a drive to organize a union in a company's workplace is to never hire people willing to stand up to their employer in the first place. Part III of this article highlights how employers use data to assess which employees are most likely to leave and concentrate more limited resources on those employees, while reducing compensation to other employees that the employer assesses lack the means or inclination to search for an alternative job. Finally, as Part IV outlines, data analysis allows companies to decentralize their operations into multiple subcontractors and even spin off most workers to be on their own as "independent contractors."

The result is a data-driven power to push down wages for workers so fragmented that they have less and less ability to act collectively to demand higher pay.

A. Collective Action Largely Ignored as Solution to Privacy Harms

While some privacy advocates have highlighted the dangers of increased employer information gathering and surveillance in the workplace, they have largely framed it as endangering dignity rights or threatening discrimination against individual workers.³ Solutions are usually framed merely as some form of legislative restraint on employer power and knowledge, not increasing the collective information controlled by workers to bargain for better conditions. The potential use of labor law to rebalance the information inequality in the workplace, as outlined in Part V, is largely ignored. For example, the Future of Work Project at the Data and Society Research Institute outlines issues of employer surveillance in an admirable policy brief that situates current

3. Sweeney, *supra* note 1, at 52; Datta et al., *supra* note 1, at 102; *see generally* Barocas & Selbst, *supra* note 1; Pasquale & Citron, *supra* note 1, at 1413–14; Boyd & Crawford, *supra* note 1, at 666–68; BIG DATA, *supra* note 1, at 51–53; Rosenblat, Wikelius, Boyd, Gangadharan, & Yu, *supra* note 1.

issues in the broad historic context of Taylorism and other trends. It still, however, largely frames the problem in its conclusion in the modern language of individual privacy: whether there is “a point of mutual consent amongst all parties involved” around the “privacy concerns” over individual “surveillance data that is collected on them.”⁴ While the authors nod to broader worries about the overall effect of surveillance on increasing the “power differential between employers and laborers,” the criticism still largely focuses on individual privacy.⁵

Similarly, others who highlight the danger of employer surveillance worry that it will make proving harm to individuals more challenging. Mark Burdon and Paul Harper lay out how workplace discrimination law is being upended by big-data options that “challenge the very basis of our anti-discrimination and privacy laws,” since “it is often impossible to connect discrimination to the inequalities that flow from data analytics Establishing a link between a protected attribute and a big data discriminatory practice is likely to be evidentially insurmountable.”⁶ José van Dijck highlights that we are entering a dangerous new world of allowing such discrimination by algorithms and machines often acting without human oversight.⁷

This focus on individuals and worries about them enforcing individual legal rights are hardly unique to the privacy field, especially in relation to the workplace. As labor scholar Nelson Lichtenstein detailed in his history of labor over the last century, *State of the Union*, the very success of the Civil Rights Act and a myriad of other modern employment legislation has largely substituted a “rights consciousness” in thinking about employment abuses for the collective-action framework that had shaped thought about workplace relations in the era of labor union law in the 1930s and its aftermath.⁸ Part VI sketches out why a program focused on strengthening collective action through strengthening labor law is likely to be more effective in addressing the harms from big-data surveillance than new legislation to strengthen individual privacy rights in the workplace.

4. Alex Rosenblat et al., *Workplace Surveillance*, DATA & SOC’Y RESEARCH INST. (Oct. 8, 2014), <http://www.datasociety.net/pubs/fow/WorkplaceSurveillance.pdf> (notably there is only one brief reference to unions in any way and no mention of the National Labor Relations Act or other union-related).

5. *Id.*

6. Mark Burdon & Paul Harpur, *Big Data Could Be a Big Problem for Workplace Discrimination Law*, CONVERSATION (Nov. 23, 2014), <https://theconversation.com/big-data-could-be-a-big-problem-for-workplace-discrimination-law-34137>.

7. José van Dijck, *Datafication, Dataism and Dataveillance: Big Data Between Scientific Paradigm and Ideology*, 12(2) SURVEILLANCE & SOC’Y 197–208 (2014), <http://ojs.library.queensu.ca/index.php/surveillance-and-society/article/view/datafication/datafic>.

8. NELSON LICHTENSTEIN, *STATE OF THE UNION* 178–211 (William Chafe et al., eds., rev. & expanded ed. 2003).

B. The Battle for Control of the “Social Graph” in the Workplace

Part of what this article argues is that the harm much employer use of data inflicts is not harm to individual workers in the form of discrimination, but collective harm in the form of weaker collective organization and lower wages. As detailed in Part II, a first key part of the information advantage for employers is ensuring through pre-employment tests that the strongest agitators for organizing a union never get hired. Importantly, this does not mean that employers screen out every worker who might vote for a union, just the “troublemakers” who might force a vote in the first place. While it may be in the self-interest of an individual to vote for a union in a secret ballot, the high probability of the public leaders of a union effort in the workplace being fired⁹ makes it irrational from a pure self-interest standpoint to be the one leading such a drive. Union lawyer Thomas Geoghegan describes union organizing as akin to the Charge of the Light Brigade for the workers leading the drive: “It is like sending people straight into a machine gun, and when the bodies pile up high enough, the drive is over and the employer has won.”¹⁰ This creates a classic collective-action problem in the workplace which employers take advantage of by working as hard as possible to identify the people who might force a vote. The most accurate part of the movie *Norma Rae* is that Norma Rae is no longer an employed worker by the time a union election was held—and if the company could have avoided hiring the real Norma Rae, Crystal Lee Sutton, in the first place, no union election might have ever happened.

While much analysis focuses on the harm to those suffering individual discrimination due to big data analysis, discrimination against potential union leaders in the workplace actually harms the non-leaders as much or more than leaders, because the non-leaders miss out on the wage gains they would have received from unionization even though they would have been at far less risk of any job loss from the drive.

How the collective-action frame differs from the individual rights frame can be seen in how labor law approaches an employer who

9. John Schmitt & Ben Zipperer, *Dropping the Ax: Illegal Firings During Union Election Campaigns*, CTR. ECON. & POL’Y RES. 1 (Jan. 2007), http://cepr.net/documents/publications/unions_2007_01.pdf (“[O]ur estimates suggest that almost one-in-five union organizers or activists can expect to be fired as a result of their activities in a union election campaign.”); Kate Bronfenbrenner, *No Holds Barred: The Intensification of Employer Opposition to Organizing 2* (Briefing Paper No. 235, Econ. Pol’y Inst., May 20, 2009) (“[E]mployers threatened to close the plant in 57% of elections, discharged workers in 34%, and threatened to cut wages and benefits in 47% of elections.”).

10. THOMAS GEOGHEGAN, WHICH SIDE ARE YOU ON? TRYING TO BE FOR LABOR WHEN IT’S FLAT ON ITS BACK 252 (1992).

refuses to hire or who fires someone for holding pro-union viewpoints. Notably, while individual workers are owed back pay and reinstatement if they are illegally fired, this remedy is considerably weaker than remedies available for discriminatory firings under civil rights laws.¹¹ Instead, the main focus of the NLRB in such cases is to rectify the collective effect on the workplace from the anti-union actions, from ordering new union elections, requiring the employer to post notices of its wrongdoing,¹² and even requiring the employer to bargain with a union after an election loss where employer misconduct had dissipated the union's majority and prevented the holding of a fair election.¹³ The NLRB's underlying principle, therefore, is that protecting long-term collective power is as or more important than compensating individuals for individual harms.

What is missing in much of the contemporary focus on privacy rights and surveillance in the workplace is a fuller discussion of the original components of traditional labor law that were designed in theory and occasionally in practice to give employees the informational tools to more effectively advocate collectively for greater pay and better work conditions—including enforcing privacy protections that many privacy advocates would otherwise assume require new legislation.

To understand the importance of data analysis in weakening collective action in the workplace, it's worth reading over this extended description by labor organizer Jane McAlveney of what union organizers do in building a union in the workplace:

Good union organizers are familiar with a practice called workplace charting. You make a big wall chart with a grid. One axis plots work shifts at the workplace, the other plots departments or work areas. Then you fill in the names of all the workers by department and shift. But that's just a piece of paper. The chart comes to life through your conversations with all the workers in the facility. It goes with you to meetings, where you hang it up and let workers study it. As you talk to them, you ask them a series of questions that help you assess who their actual organic leaders are in each department and shift. You might ask which person on a

11. See RICHARD D. KAHLBERG ET AL., WHY LABOR ORGANIZING SHOULD BE A CIVIL RIGHT (2012), for extensive discussion of the weakness of individual remedies under the National Labor Relations Act.

12. This is called a *Lufkin* notice in honor of *Lufkin Rule Co.*, 147 N.L.R.B. 341 (1964); see also *National By-Products, Inc. v. N.L.R.B.*, 931 F.2d 445 (7th Cir. 1991).

13. *Steel Fab., Inc. and United Steelworkers of America, AFL-CIO*, 212 N.L.R.B. 363 (1974); *N.L.R.B. v. Gissel Packing Co.*, 395 U.S. 575, 613 (1969) (indicating that “outrageous” and “pervasive” unfair labor practices that made an election impossible could justify an N.L.R.B. bargaining order even where a union lost an election).

shift the others would go to if they wanted to learn how to do things better. Or whom they would talk to if they had a problem with their supervisor or a coworker. You proceed systematically, really listening to what people say. Organizers call this process leader ID. A workplace chart is the organizer's bible. It gets marked with colored highlighters, stick-on stars, adhesive file-folder dots, and symbols of all kinds, creating a topography of all the relations among and between the workers, and it gives the organizer an increasingly precise and accurate understanding of how power moves in the workplace.¹⁴

If this sounds like Mark Zuckerberg talking about the “social graph,”¹⁵ this is no accident. Technology leaders have long understood the power of delivering to business clients an understanding of and ideally, for employers, control over the social graph. For unions, their own charting of the social graph in the workplace is the core source of to their power. Strikes or any other kind of collective action are reflections, not the source, of the power that stems from the core organizing of the social graph of their members or potential members.¹⁶ As employers strengthen their knowledge and control of information flows in the workplace, especially knowing what kinds of potential leaders might support an organizing drive and avoiding hiring them or quietly getting rid of them, this inevitably comes at the expense of worker collective power.

C. Communication and “Voice” in the Workplace versus “Marginalized” Workers

Most classical economists assume that the main mechanism for shaping the labor market are workers joining or leaving firms: “By leaving less desirable for more desirable jobs, or by refusing bad jobs,

14. JANE MCALEVEY, RAISING EXPECTATIONS (AND RAISING HELL): MY DECADE FIGHTING FOR THE LABOR MOVEMENT 38 (2012).

15. “Zuckerberg attributed the power of Facebook to the ‘social graph,’ the network of connections and relationships between people on the service . . . It’s changing the way the world works,” he said, pushing information out faster than any big company can. ‘As Facebook adds more and more people with more and more connections it continues growing and becomes more useful at a faster rate. We are going to use it spread information through the social graph.’” Dan Farber, *Facebook’s Zuckerberg Uncorks the Social Graph*, ZDNET (Mar. 24, 2007), <http://www.zdnet.com/article/facebooks-zuckerberg-uncorks-the-social-graph/>.

16. This was the training I received as a young union organizer in the casinos of Las Vegas fresh out of college many years ago and no doubt accounts for why writing about labor and about data technology have always seemed like an integrated program, not disparate policy areas as they are usually treated in most intellectual fields.

individuals penalize the bad employer and reward the good.”¹⁷ In economic terms, the worker whom employers desire to join their firm or fear might leave is the marginal worker—like the marginal revenue and marginal utility—that shape economic decision-making in classical economics.

What is usually under-discussed in relation to labor markets is how the role of unions in sharing information among workers can drive a different organization of wages and benefits that is more responsive to workers as a whole.¹⁸ Part of the difference with unionization is that employees collectively can demand higher wages and lower turnover, all while potentially increasing productivity in ways that create alternative equilibrium solutions that, while benefiting workers, may include gains for employers offsetting some of the higher compensation levels.¹⁹

One thing the collective bargaining tradition emphasizes is that bargaining *matters*; that the price of labor is not some assumed, equilibrium price that is automatically set by abstract supply and demand in the marketplace. Rather, the price of labor is one where human beings with limited knowledge maneuver to raise or lower the price offered by the other bargaining party. Economists such as Joseph Stiglitz, former Chief Economist for the World Bank and a founder of so-called “information economics,” explored how, in a world of imperfect and asymmetric information, there is no constant “efficiency wage” as classical economists consider the matter. Instead, wages “vary across firms” with differences tied to a range of imperfections in information rather than “solely in terms of differences in ability.”²⁰ And in economic models where bargaining matters, information is the coin of the realm. The problem in the modern economy is that big data places many more coins in the hands of the employer in such negotiations.

In their seminal *What Do Unions Do?*, Richard Freeman and James Medoff contrasted the option of “exit”—the traditional model of workers setting wages through the threat of quitting—with an alternative

17. RICHARD FREEMAN & JAMES MEDOFF, *WHAT DO UNIONS DO?* 7 (1982).

18. Bruce E. Kaufman, *The Non-Existence of the Labor Demand/Supply Diagram, and Other Theorems of Institutional Economics*, 29 J. LAB. RES. 285, 295 (Aug. 2008) (arguing that under assumptions of perfect competition, pace Ronald Coase, there would be no firms and no employees, a point we will return to later in discussions of how big data changes the structure of firms, and thus in the real world all “labor markets are inherently imperfect” so wage rates are inherently different under a non-union versus a collective bargaining system).

19. FREEMAN & MEDOFF, *supra* note 17, devote Chapter 11 to economic studies detailing how collective bargaining on balance increases productivity, even if the productivity increases generally fall short of the wage increases; Sumner H. Slichter et al., *The Impact of Collective Bargaining on Management*, 28 SOUTHERN ECON. J. 194 (1960) (providing analysis of how management responses shape the wages and the degree of productivity gains under collective bargaining).

20. Joseph E. Stiglitz, *Information and the Change in the Paradigm in Economics*, 92 AM. ECON. REV. 460, 466 (2002).

model of “voice,” the idea that workers can collectively understand their aggregate desires to know more about those interests and their employer’s interests. In doing so these workers are able to reshape the mix of wages and benefits to reflect the median worker in any workplace rather than just the workers least attached to the firm.²¹

Bargaining is always an informational conflict in this approach to labor markets and, while unions do exercise power through the collective ability to withhold labor, what some deem their “cartel” power,²² the unions’ role as an information-collection agency is less understood or discussed in the popular imagination. Unions play a critical role in collecting information about wages paid to other workers in developing broad, company-wide wage and benefit demands. This explains, for example, the rules protecting the right of workers to discuss wage conditions with each other.²³ How the law structures employers’ power to extract information about individual worker preferences, and thereby strengthen their hand in negotiations, decides economic inequality in the workplace. A classical economic model will assume the wage is the wage. A bargaining model, however, will understand that, just as individual consumers have a reserve price or a “pain point” where they will pay more for an object compared to other consumers with more information on available sales or discounts, so too may employers be able to extract from their employees a lower wage agreement depending on the information at the command of the union and its members.²⁴

Greater shared knowledge of and comparison of wages in an industry, as well as collective knowledge of the overall ability of an employer to afford wage demands, allows employees to negotiate for higher overall compensation. Many workers fear to even ask for additional compensation or alternative benefits for fear an employer may fire

21. Freeman and Medoff borrow an economic framework first popularized by economist Albert Hirschman in his book *Exit, Voice and Loyalty* (1971) which argued that unions provide an alternative to a model of the labor market where the only restraint on employer behavior is the “exit” of discontented workers. For Hirschman, the idea of “voice” assumes that communication—talking about problems and bargaining over solutions—actually matters and that there is not a simple wage or compensation level based only on the actions of the marginal worker least attached to the workplace.

22. While Freeman and Medoff note higher wages in unions come from a mixture of advantages—through organizing whole sectors and threatening to organize non-union competitors to create a higher industry or regional wage, extracting higher profits from firms who themselves extract higher-than-normal profits through various semi-monopoly “rents,” and organizing firms who themselves face little competition—this is only one aspect of their power. FREEMAN & MEDOFF, *supra* note 17, at 7.

23. *N.L.R.B. v. Brookshire Grocery Co.*, 919 F.2d 359, 363 (5th Cir. 1990) (A “workplace rule that forb[ids] the discussion of confidential wage information between employees . . . patently violat[e] section 8(a)(1).”).

24. This discussion of pain points is part of the broader economic problem of price discrimination, an issue I return to in Part II. *See infra* notes 90 and 91.

them.²⁵ Freeman and Medoff outline why the compensation and working conditions resulting from such collective “voice” will also differ significantly in the mix of wages, benefits, and working conditions from models assuming that “exit” is the only restraint on employer decision-making. The traditional model where exit and entry are the main signals to employers encourages shaping benefits to the needs of the least attached employee, generally “young and marketable” while ignoring “the preferences of typically older, less marketable worker who—for reasons of skills, knowledge, rights that cannot be easily transferred to other enterprises, as well as because of other costs associated with changing firms—are effectively immobile.”²⁶ Immediate cash wages tend to be favored over pensions and health care by such younger, marketable workers, so a “voice”-driven, unionized workplace is more likely to provide for such benefits geared to the median, somewhat older worker.²⁷

In addition to fringe benefits like health care and pensions, many other aspects of workplace conditions, such as safety conditions, the speed of the production line, grievance systems, and broader policies on promotions or layoffs, are “public goods” that are nearly impossible to negotiate for in individual negotiations—and, like public goods in society, are systematically underinvested in through purely competitive markets based on marginal demand by workers.²⁸ As importantly, a collectively negotiated contract means workers are actually able to claim promised deferred benefits, as opposed to finding themselves fired just before a promised pension vests (as is too typical in non-union settings), which creates the “possibility for improved labor contracts and arrangements and higher economic efficiency.”²⁹

25. FREEMAN & MEDOFF, *supra* note 17, at 9. As will be discussed in Part V, labor law is designed to give greater protection to workers collectively asserting their preferences than to individual workers doing so.

26. *Id.* at 9–10; *see also* Stiglitz, *supra* note 20, at 470 (describing how many employees lack an ability to signal their value to an alternative employer, since the alternative employer knows they know less about an employee’s skills than their current employer, so are reluctant to pay more—a sign that the “used labor” market may not work well).

27. Evidence shows unionism increases fringe benefits such as pensions and health care, with Medoff and Freeman finding fringe benefits were 30% higher in unionized firms than non-union firms with similar wages, while reducing bonus payments. FREEMAN & MEDOFF, *supra* note 17, at 6–65.

28. *Id.* at 9.

29. *Id.* at 11; *see also* Peter Kuhn, *Malfeasance in Long Term Employment Contracts: A New General Model with an Application to Unionism* 1045 (Nat’l Bureau Econ. Res., Working Paper No. 1982); James M. Malcomson, *Trade Unions and Economic Efficiency*, 93 *ECON. J.* 51 (1983); Melvin W. Reder, *Unionism, Wages and Contract Enforcement*, in *RESEARCH IN LABOR ECONOMICS*, 1983 SUPP.: *NEW APPROACHES TO LABOR UNIONS* (Joseph D. Reid Jr. ed., 1983). Note that the benefits provided to median workers—i.e. older workers—can actually be cheaper to provide than the equivalent wages because of tax advantages, but because younger, marginal workers discount the value of such benefits, the company actually may provide higher pay but lower combined pay and benefits than would

While unions reduce inequality in the economy partly through shifting income from profits to wages, their focus on median workers and collective decision makers and wage standards across entire industries where possible also tends to increase wage equality by “economically sizable magnitudes.”³⁰ Unions also increase equality by forcing wages and productivity higher, while ensuring workers share in the increased revenue from productivity thus generated.³¹

With increasing big-data analysis by employers, we have seen informational power tilt to the company side, weakening workers’ collective understanding in their potential collective power, even as employer knowledge strengthens and undercuts workers in bargaining. As Part III of this article details, this process tends to push pay and benefits towards the economic ideal of serving the interests of younger and more marketable workers hired on the margin, and lowers wages and benefits for workers overall, particularly older workers and those with firm-specific and therefore less generally marketable skills.

The rise of companies like Uber, themselves driven by new communication technology, is less a grand new phenomenon than the endpoint of workplaces designed with incentives aimed at the marginal worker, as Part IV of this article details. As the *New York Times* describes Uber and other technology-driven firms, “new technologies have the potential to chop up a broad array of traditional jobs into discrete tasks that can be assigned to people just when they’re needed.” Wages then can be “set by a dynamic measurement of supply and demand, and every worker’s performance constantly tracked, reviewed and subject to the sometimes-harsh light of customer satisfaction.”³²

Part V of this article steps back and places current labor law in the context of these arguments to highlight the ways that current law acts as an information-sharing and empowering system for workers in ways that many technology advocates often overlook. It also highlights the areas where multiple decades of case law have failed to address the information needs of workers with the deployment of new technology and what changes in interpretation of the law would more fully reflect

be ideal for workers collectively and the firm itself. For example, the marginal worker might demand \$20 per hour in pay to stay at a firm, while the median worker might prefer \$17 in pay plus \$5 in benefit. Because of tax subsidies, the \$5 in benefits may only cost the employer \$3, so the company could provide a combined package of \$22 in pay and benefits for the same cost as the \$20 in pay demanded by the younger worker. But because the younger worker demands \$20 in cash pay, the company ends up providing that instead and workers collectively end up with less compensation overall.

30. BENNETT & KAUFMAN, *supra* note 17, at 90–93.

31. *Id.* at 15–16.

32. Farhad Manjoo, *Uber’s Business Model Could Change Your Work*, N.Y. TIMES (Jan. 28, 2015), http://www.nytimes.com/2015/01/29/technology/personaltech/uber-a-rising-business-model.html?nytmobile=0&_r=0.

the original intent of the law and strengthen workers' ability to organize and bargain collectively for changes in the economy to reverse some of the observed trends in rising economic inequality.

II. *MINORITY REPORT*³³ IN THE WORKPLACE: BIG DATA IN THE HIRING PROCESS

As described in the introduction, the best way to stop a union or any collective demand for higher wages is to use data to never hire the leaders who would force a vote or organize other workers in the first place.

A. The Explosion of Pre-Hire Screening

Recent decades have seen a massive increase in pre-hiring testing and screening by employers, with the trend continuing to accelerate in recent years. One estimate is that there are seventy-five million assessment tests administered to potential employees each year. One company, Kenexa—which was bought by IBM for \$1.3 billion in 2012—reportedly does twenty million assessments alone each year.³⁴ For millions of available jobs, particularly entry-level, hourly jobs, an online personality test determines whether the applicant even gets a chance to have their resume looked at by an actual human being.³⁵ Josh Bersin, head of consulting for a unit of auditor Deloitte LLP, estimated that in 2014, 60% to 70% of prospective workers faced these tests, up from 30% to 40% just five years earlier, with a growth rate of 20% annually. The testing company Kronos reportedly has a database of information on hundreds of millions of job applicants and employees.³⁶

Such online assessments are a key part of legal debates over whether McDonalds should be considered a joint employer³⁷ with its stores owned by franchisees, since 90% of its franchisees use the corporation's

33. *MINORITY REPORT* (20th Century Fox 2002) is a 2002 movie where police use mutants and technology to identify individuals who will commit crimes in the future—and stop them before they have a chance to act. See *Minority Report*, IMDB, <http://www.imdb.com/title/tt0181689/> (last visited Nov. 21, 2017).

34. Andrew Leonard, *Your Boss Wants to be Nate Silver*, SALON (Dec. 13, 2013), http://www.salon.com/2013/12/13/your_boss_wants_to_be_nate_silver/.

35. *Id.*

36. *Exacerbating Long-Term Unemployment: Big Data and Employment Assessments*, EMPLOYMENT TESTING: FAILING TO MAKE THE GRADE BLOG (June 13, 2014), <http://employmentassessment.blogspot.com/2014/06/exacerbating-long-term-unemployment-big.html>.

37. McDonald's USA, LLC, a Joint Employer, et al., NLRB, <https://www.nlr.gov/case/02-CA-093893> (last visited Nov. 11, 2017); see also *Lovin It (Or Not) - McDonald's and the NLRB*, EMPLOYMENT TESTING: FAILING TO MAKE THE GRADE BLOG (Aug. 7, 2014), <http://employmentassessment.blogspot.com/2014/08/lovin-it-or-not-mcdonalds-and-nlr.html>.

“Hiring to Win” online hiring platform,³⁸ which requires an employment assessment for every hire before the local franchise owner even reviews their resume or interviews them.³⁹

B. Debates over Pre-Hire Screening and Discrimination

So what do companies get from these pre-hire personality assessments? The most positive case for the tests was detailed in an *Atlantic* article in 2013, which highlighted how Xerox has used the tests apparently to substantially improve the quality of its hires, increase employee happiness and satisfaction, reduce its attrition rate by 20% in the initial pilot period, and improve the number of promotions. Successful candidates were described as exhibiting “a creative but not overly inquisitive personality, and participate in at least one but not more than four social networks, among many other factors.”⁴⁰ Assessment companies are seeking to marry post-assessment job results with pre-hire assessment data to improve such outcomes. One hiring consultant for computer companies with six million programmers in its database found that strong coding was associated with affinity with a particular Japanese manga site—the kind of cute correlation that thrills data analysts.⁴¹

Most other analysts are more skeptical of the positive motives for the assessment tests. Roland Behm, who runs a website providing critical analysis of the assessment industry, notes that, on top of a host of academic studies⁴² that have found little correlation between job performance and such personality tests, the broadest surveys of employee satisfaction and “engagement” by Gallup have seen essentially zero change since 2000, despite the massive increase in use of personality assessments in the pre-hire process.⁴³ This indicates that the results of improved employee fit and satisfaction from hiring

38. Letter from Willis J. Goldsmith, Partner, Jones Day, to Barry J. Kearney, Associate General Counsel of the Division of Advice, N.L.R.B., at 8 (May 22, 2014), <http://static.politico.com/4d/78/21e5bc034511b798336d0c20a6aa/mcdonalds-memo-defending-against-joint-employer-liability.pdf>.

39. *Lovin It*, *supra* note 37; Susanna Kim, *McDonald's Job Applicants: 35 Questions Away from Employment*, ABC NEWS (Apr. 19, 2011), <http://abnews.go.com/Business/mcdonalds-job-applicants-35-questions-employment/story?id=13408745>.

40. Don Peck, *They're Watching You at Work*, ATLANTIC (Dec. 2013), <http://www.theatlantic.com/magazine/archive/2013/12/theyre-watching-you-at-work/354681/>.

41. *Id.*

42. See Frederick P. Morgeson et al., *Reconsidering the Use of Personality Tests in Personnel Selection Contexts*, 60 PERSONNEL PSYCHOL. 683–729 (2007) for a broader review of this research.

43. *A Fool with A Tool Is Still A Fool*, EMPLOYMENT TESTING: FAILING TO MAKE THE GRADE BLOG (June 17, 2015), <http://employmentassessment.blogspot.com/2015/06/a-fool-with-tool-is-still-fool.html>.

through personality tests which Xerox claims are not broadly shared by most other companies using the tests.

The general lack of clear, positive outcomes leaves many suspecting less-savory motives for the tests. Government officials, for example, have focused closely in recent years on whether the tests are an indirect means to practice discrimination against the mentally ill.⁴⁴ Questions designed to flag depression and/or paranoia are common on such tests; a Lowes's test asks job seekers if they "believe that others have good intentions" and McDonalds has asked, "If something very bad happens, it takes some time before I feel happy again," while CVS Health Corp. had been criticized for asking interviewees whether they agree with statements such as, "There's no use having close friends; they always let you down," and, "Many people cannot be trusted." In 2011, Rhode Island regulators found that there was "probable cause" to find that CVS had violated state law barring employers from eliciting information about the mental health or physical disabilities of job applicants, leading the company to remove the offending questions and settle a civil lawsuit with the Rhode Island American Civil Liberties Union. The U.S. Equal Employment Opportunity Commission (EEOC) has launched investigations into whether such questions violate the Americans with Disabilities Act (ADA).⁴⁵

In August 2015, Target paid the EEOC \$2.8 million in a settlement for violations that not only charged that the company's pre-employment assessments performed by hired psychologists constituted a medical examination in violation of the ADA, but also had a broader disparate impact in disproportionately screening out potential employees based on race and gender in violation of Title VII of the Civil Rights Act.⁴⁶ Notably, the assessment firm Kenexa believes that a lengthy commute increases attrition at many jobs and reduces its recommendations for employment based on the length of commute listed by applicants, which critics argue creates disparate impact against lower-income people who often can't afford to live near their work site, disproportionately impacting women, Blacks, Hispanics, and the mentally ill.⁴⁷

44. Lauren Weber & Elizabeth Dwoskin, *Are Workplace Personality Tests Fair?*, WALL ST. J. (Sept. 29, 2014), <http://www.wsj.com/articles/are-workplace-personality-tests-fair-1412044257>.

45. *Id.*

46. Press Release, U.S. EEOC, Target Corporation to Pay \$2.8 Million to Resolve EEOC Discrimination Finding (Aug. 24, 2015), <https://www.eeoc.gov/eeoc/newsroom/release/8-24-15.cfm>; Jamie LaPlante, *Be Careful What You Ask on Pre-Employment Tests to Avoid a Multimillion Dollar EEOC Action*, LEXOLOGY (Sep. 9, 2015), <http://www.lexology.com/library/detail.aspx?g=a896ddd3-4be8-4960-9f5b-ed3f5133acfe> (noting that the EEOC has also sued Ford Motor Company over its cognitive reasoning testing in 2008, settling for \$1.6 million); see also the EEOC's fact sheet setting forth its view on pre-employment testing at *Employment Tests and Selection Procedures*, EEOC (Sep. 23, 2010), https://www.eeoc.gov/policy/docs/factemployment_procedures.html.

47. *Exacerbating Long-Term Unemployment*, *supra* note 36.

C. Pre-Hire Tests as Likely Illegal Anti-Union Screening

Recent legal analysis has focused far less on how employment tests may be screening pro-union applicants. Barbara Ehrenreich in her book *Nickeled and Dimed* writes about interviewing for a housecleaning job where she was “given something called the ‘Accutrac personality test,’” which asks questions such as whether you agree that “management and employees will always be in conflict because they have totally different sets of goals.” At another point in the book, she describes taking a test for Walmart, where she alarmed the tester by asserting some measure of independence on a couple of questions. Her lesson: “When presenting yourself as a potential employee, you can never be too much of a suck-up.” The dangerous flag on her answers were that she had only agreed “strongly” with the proposition “rules have to be followed to the letter at all times” rather than agreeing “totally.”⁴⁸

Liza Featherstone in her *Selling Women Short: The Landmark Battle for Workers’ Rights at Wal-Mart*, notes that Walmart in a Supercenter in Las Vegas refused to hire any experienced help, because in the words of a supervisor she interviewed, “[T]hey might be union,” which emphasizes that, for many employers, finding the most skilled employees is a subordinate goal to finding compliant employees. Featherstone details that Walmart managers report using personality tests to screen out those likely to be sympathetic to unions. For example, the company encourages them to avoid hiring “cause-oriented associates” who led any kind of political demonstration in high school.⁴⁹

While carefully avoiding any mention of deliberately screening out pro-union members, which would be illegal under the National Labor Relations Act,⁵⁰ many assessment companies advertise their ability to screen out “disgruntled” employees through personality testing and scanning applicants’ social media accounts to ensure companies “hire only potential employees with clean records.”⁵¹ Another screening test for nurses and other employees called the PECAT claims it will weed out “undesirable behaviors” such as “focus on pay, benefits, and status,” in favor of “desirable behaviors,” such as “focus on enjoyment of the

48. BARBARA EHRENRICH, NICKEL AND DIMED: ON (NOT) GETTING BY IN AMERICA 123–24 (2010).

49. LIZA FEATHERSTONE, *SELLING WOMEN SHORT: THE LANDMARK BATTLE FOR WORKERS’ RIGHTS AT WAL-MART* 198–99 (2005).

50. 29 U.S.C.S. § 158(a)(3) (2012) (“It shall be an unfair labor practice for an employer . . . by discrimination in regard to hire or tenure of employment or any term or condition of employment to encourage or discourage membership in any labor organization.”)

51. Kevin Connell, *Does Your Office Have a Disgruntled Employee?*, HIREWISE (June 7, 2011), <http://www.hirewise.com/our-blog/have-a-disgruntle-or-double-life-employee/>.

job.”⁵²

As business marketing professor and consultant Neil Kokemuller writes,

Disgruntled workers . . . carry a generally negative attitude and may allow their dislike for aspects of the job to impact their behaviors at work . . . and potentially persuade others that the company is unfair or not a good place to work. Pre-employment screening tools help companies avoid hiring employees that could become negative influences on the workplace[.]⁵³

These tests, therefore, are clearly marketed to companies as ways to exclude employees who will agitate to fellow workers for more pay or benefits with other employees.

D. Origin of Pre-Hire Testing in New Deal Union-Avoidance Strategies

None of this is a surprise since the roots of personality testing in the workplace were largely in anti-union strategies of companies during the large union organizing drives of the 1930s. Before that wave and the passage of the Wagner Act, many companies had routinely refused to hire anyone with a history of being a member of a union and made new hires sign contracts committing in the future never to join one, which were called “Yellow Dog Contracts.” One of the bitterest attacks from the Supreme Court in the pre-New Deal era came from its decisions striking down federal laws banning such anti-union pre-hire contracts.⁵⁴

52. It also promises to deliver employees “[w]illing to go the extra mile” versus “[d]oes the minimum” and avoiding candidates who are “contentious, argumentative” in favor of “[e]asy-going, pleasant, respectful” hires. The test was located at <http://www.pecat.ie/test/nurse-pre-employment-test/> but was removed from the web in course of writing this article, but a parallel test with some similar questions can be accessed at *Financial Services Practice Manager Personality Test*, EUPHONYHR, <http://www.euphonyhr.com/solutions/financial-services-manager-personality-test> (last visited Nov. 21, 2017). While some tests are rather blatant in what traits they are seeking, others are obviously inspired by deeper data analysis to create choices where each seems reasonable but reveal desired traits. One company that provides test prep training geared specifically to McDonalds exam notes that the test is designed to be probing and hard to game since it largely requires applicants to choose between paired statements, where “both statements in many of the pairs appear to espouse trait[s that are] beneficial for a successful manager.” *Prepare Online for the McDonald’s Assessment Test*, JOB TEST PREP, <https://www.testprep-online.com/mcdonalds-assessment-test> (last visited Feb. 2, 2017).

53. Neil Kokemuller, *What Role Does Pre-Employment Screening Have in Dealing With Disgruntled Employees?*, HOUSTON CHRON., <http://work.chron.com/role-preemployment-screening-dealing-disgruntled-employees-7297.html> (last visited Feb. 2, 2017).

54. See *Coppage v. Kansas*, 236 U.S. 1 (1915) (upholding state court decisions declaring bans on such contracts as unconstitutional); see also *Adair v. United States*, 208 U.S. 162 (1908) (striking down federal laws banning the contracts.; further decisions had made it illegal for union organizers to even talk to workers operating under such contracts, thereby paralyzing organizing drives in multiple industries).

Charles Rowan's *The Yellow Dog Contract*⁵⁵ outlines the power of the Yellow Dog Contract in stopping union drives for decades before the New Deal and details how the political focus on the issue was so central that a judge nominated for the Supreme Court by Herbert Hoover in 1930 was defeated largely because of his rulings in favor of Yellow Dog Contracts and granting injunctions against union organizers seeking to talk to workers operating under them.

With the passage of the Wagner Act, however, a new, comprehensive ban was enacted not only on Yellow Dog Contracts but also on any discrimination in hiring based on the union background or pro-union viewpoint of a worker,⁵⁶ as well as a shift in the Supreme Court which overturned past precedents supporting Yellow Dog Contracts. Employers rapidly shifted strategies in seeking what Professor of Psychology Michael Zickler called "subtler methods to screen out potential union members."⁵⁷ Employers hired a new breed of industrial psychologists who borrowed personality tests often first used by the military in World War I to select and place recruits. While popular, these early tests were not particularly effective since they largely were designed to screen out "neurotics;" employers believed workers joined unions because they were emotionally maladjusted, or, as Elton Mayo, endorsing such methods from the Harvard Business School, argued, workers joined unions because of "mental disintegration" or "delusions of conspiracy and lunacy."⁵⁸

Partly due to the lack of effectiveness in these early tests and partly due to a new détente in workplace collective bargaining in the 1950s, personality testing dropped in popularity. Psychologists themselves became reluctant to participate because the new Labor-Management Reporting and Disclosure Act⁵⁹ required companies to disclose who they were hiring as consultants. This law led many academic psychologists to move away from anti-union industrial psychology for fear of negative publicity.⁶⁰

However, in the 1960s and 1970s a new breed of more sophisticated industrial psychologists, largely rooted in the business world itself rather than academia, reintroduced personality tests based on new behavioral and social science research and techniques. Nathan Shefferman, Sears' internal union-avoidance expert, was one of the first to introduce (and

55. 15 MARQ. L. REV. 110 (1931).

56. 29 U.S.C.S. § 158(a)(3) (2012).

57. Michael J. Zickler, *Using Personality Inventories to Identify Thugs and Agitators: Applied Psychology's Contribution to the War Against Labor*, 59 J. VOCATIONAL BEHAV. 149, 152 (2001).

58. *Id.* at 154–55.

59. 29 U.S.C.S. § 401 (2012).

60. Zickler, *supra* note 57, at 157–58.

launch a consulting firm around) basic kinds of surveys and aptitude tests designed to reveal union sympathies of potential employees, which his even more sophisticated successors further developed.⁶¹ His firm, and other consulting firms like his, came to not only help employers screen out potential union supporters, but also identify “hotspots” in a firm vulnerable to unionization and help structure the workplace to help maintain a union-free workplace, including detailed “psychological profiles” of likely union supporters and opponents.⁶²

One member of the leading new breed of psychologists specializing in union avoidance was Charles Hughes, who emerged from working in labor relations in Texas Instruments and IBM, both well-known for their dedication and sophistication in avoiding unionization (with the latter now running one of the largest personality-testing firms, Kenexa). Hughes’ Dallas-based Center for Values Research was established in 1974 dedicated to assisting “organizations that choose to be union free.” In the next decade, the Center for Values Research would train over 27,000 managers and survey a quarter of a million workers in developing its Employee Attitude Surveys (EAS) to help firms screen out likely union members, and boast, “We have never had a union free client become unionized.”⁶³

While most employers and consultants don’t detail exactly how they exclude pro-union employees in their hiring process, researcher Gregory Saltzman managed to persuade a Japanese “transplant” auto company to allow him to observe their hiring process and detailed the process and statistical analysis of who was hired and who was not in an academic case study.⁶⁴ Saltzman reported that part of the hiring process seemed designed to emphasize the employee’s lack of control in the workplace and thereby induce many workers with a union background to withdraw their applications altogether. Many did withdraw, but Saltzman also found that workers with union sympathies were rejected by the employer at rates that were statistically significant based on the testing results.⁶⁵ One telling example of the kind of question used as a proxy for measuring likely union sympathies was how potential employees responded to being shown a videotape of a woman asking to take a day off from work to see the doctor and being asked whether she should be

61. John Logan, *The Union Avoidance Industry in the United States*, 44 BRIT. J. INDUS. REL. 651, 653 (2006).

62. *Id.* at 661.

63. *Id.* at 661–64 (Hughes would admit later in his career that one client, an auto parts supplier was unionized by the UAW).

64. Gregory M. Saltzman, *Job Applicant Screening by a Japanese Transplant: A Union-Avoidance Tactic*, 49 INDUS. & LAB. REL. REV. 88 (1995).

65. *Id.* at 102.

allowed the day off.⁶⁶

The new sophistication in data analysis was on display in a 1979 U.S. Congressional oversight hearing held on the role of management consultants in union avoidance. Gone was the old focus on “maladjusted” personalities in favor of testimony noting that firms seeking to avoid unionization use pre-hire testing that “select employees who are least susceptible to unionization” outlining the “types” to avoid:

[I]f the employee holds office in several outside clubs, look at this as a potential red flag[,] . . . be skeptical of hiring . . . the youngest member of a family of more than one child[,] . . . [avoid] that person loving a challenge and always ready for competition[,] . . . [who] is adventurous, has a wide range of interests and is willing to try his hand at anything.⁶⁷

Beyond the more obvious questions acting as proxy for pro-union attitudes detailed above, these are the subtler correlations that delight data scientists but leave the anti-union animus in seemingly benign pre-hire questioning far less apparent.

While this pre-hire testing was concentrated overwhelmingly in the manufacturing sector in the 1970s and 1980s, new technology seems to have encouraged its spread at an increasingly rapid pace into service, retail and other sectors across the economy. New sources of data are increasingly combined with direct personality assessments with one company called Identified offering recruiters a pool of social media data on 500 million workers.⁶⁸

Given both the history and broad evidence of the use of such pre-hire testing as a proxy to accomplish illegal discrimination against applicants with pro-union sympathies, there are strong arguments for such tests to be prohibited unless employers can affirmatively demonstrate that their algorithms for hiring in no way involve such screening. Part V returns to the ways to recast and reinterpret current labor law to accomplish that goal.

66. *Id.* at 92.

67. Barbara Townley, *Selection and Appraisal: Reconstituting 'Social Relations'?*, in *NEW PERSPECTIVES ON HUMAN RESOURCE MANAGEMENT* 96–97 (John Storey ed., 1991).

68. Josh Bersin, *The Datafication of HR*, DELOITTE (Jan. 17, 2014), <https://dupress.deloitte.com/dup-us-en/deloitte-review/issue-14/dr14-datafication-of-hr.html>.

III. DATA-DRIVEN SURVEILLANCE: STIFLING SPEECH, SPEEDING UP THE CLOCK, AND LOWERING WAGES

For employees who do manage to get hired, data-driven surveillance increasingly ensures that wages and benefits are kept to the minimum and production sped up, with far less of the revenue generated from increased productivity being returned to the employees as compensation.

A. The Surveillance State at Work

Charles Hughes, who made a career of assisting corporate clients in screening out pro-union hires would argue that what distinguished U.S. workplaces from European counterparts was the unfettered management control they had over the workplace, where maintaining that control was both a core motivation for remaining non-union and a tool for doing so.⁶⁹ In addition, he argued for similar monitoring of existing employees to maintain that control, which new technology has made only more invasive.

A recent NLRB investigation⁷⁰ of alleged firings of union advocates during protests at Walmart in June 2013 generated 1000 pages of e-mails, reports, playbooks and charts on how sophisticated technological surveillance is getting. Walmart has a division called the Analytical Research Center (ARC) devoted to this internal surveillance, overseen by a former director of the Arkansas State Police before he joined Walmart in 2007. Additionally, Walmart hired an intelligence-gathering division of defense contractor Lockheed Martin, including a program LM Wisdom bills as a tool “that monitors and analyzes rapidly changing open source intelligence data . . . [that] has the power to incite organized movements, riots and sway political outcomes,” which among other things tracked buses moving caravans of participants in actions against the company.⁷¹

While billed as targeting potential illegal activity by employees, JPMorgan has been testing surveillance programs to track employee actions, including e-mails, chats, and telephone transcripts, which can be electronically analyzed to determine if employees are colluding or

69. Logan, *supra* note 61, at 663; see also Nicole B. Porter, *The Perfect Compromise: Bridging the Gap Between At-Will Employment and Just Cause*, 87 NEB. L. REV. 62 (2008) (discussion in Part VI on the lack of regulation of management decision-making by government in the U.S. versus Europe).

70. Wal-Mart Stores Inc., No. 16-CA-096240 (N.L.R.B. Jan 11, 2013), <https://www.nlr.gov/case/16-CA-096240>.

71. Susan Berfield, *How Walmart Keeps an Eye on Its Massive Workforce: The Retail Giant is Always Watching*, BLOOMBERG BUSINESSWEEK (Nov. 24, 2015), <https://www.bloomberg.com/features/2015-walmart-union-surveillance/>.

concealing illegal activity.⁷² Similar programs are being deployed across the financial industry, using technology designed for counter-terrorism and using it to analyze employee language as part of that surveillance.⁷³

These examples are merely the most advanced versions of routine technological monitoring that has become pervasive across workplaces. Office computers have become spies monitoring each worker's action: logging each email, tracking each web search or access to social media, measuring the speed of each keystroke. Every work cellphone performs a similar monitoring function, while delivering pinpoint location data on every step a worker makes. An American Management Association survey found that at least two-thirds of U.S. companies monitor their employees' Internet use, 45% log keystrokes and 43% track employee emails. Cash registers at McDonalds track whether each server sold the latest meal deal to customers, supermarkets record how fast each cashier scans grocery items,⁷⁴ and companies are even having employees wear "sociometric badges" that monitor each employee's conversations and analyzes how interactions match up with performance data.⁷⁵

Such monitoring no doubt assists employers in tightening their control over the social graph in the workplace and allows them to douse any "hot spots" of potential unionization before they flare into a full union drive, whether through positive co-optation or easing troublemakers out the door long before a union election might cast legal suspicion on the termination.

B. Data-Driven Speedups

In addition to employee surveillance, technology is also a means both to extract knowledge of what workers are doing and to speed up the production process to increase productivity and revenues, while potentially slashing wage costs. For example, Unified Grocers, a large wholesaler, used an electronic tasking system to cut payroll expenses at its warehouses by 25% even as it increased sales by 36%. Retailing

72. Hugh Son, *JPMorgan Algorithm Knows You're a Rogue Employee Before You Do*, BLOOMBERG TECH. (Apr. 8, 2015), <https://www.bloomberg.com/news/articles/2015-04-08/jpmorgan-algorithm-knows-you-re-a-rogue-employee-before-you-do>.

73. *Id.*

74. *The Rise of Workplace Spying*, WEEK (Jul. 5, 2015), <http://theweek.com/articles/564263/rise-workplace-spying>.

75. Frank Pasquale, *We're Being Stigmatized by 'Big Data' Scores We Don't Even Know About*, L.A. TIMES (Jan. 15, 2015), <http://www.latimes.com/opinion/op-ed/la-oe-0116-pasquale-reputation-repair-digital-history-20150116-story.html>; Peck, *supra* note 40 (Sandy Pentland and colleagues at the Human Dynamics Laboratory at MIT have created badges that zero in on 100 data points per minute about conversations: their length, the tone of voice, gestures of participants, how often people interrupt each other, the degree of empathy and extroversion shown, and more).

scanning at McDonalds or retail stores capturing speed of service for customers is used to drive ever higher turnover and sales, while keeping employment as lean as possible.⁷⁶

As one much talked about example, this kind of “telematics”—a neologism for telecommunications crossed with informatics—has been extensively deployed at United Parcel Service (UPS) with handheld devices as well as 200 sensors on each delivery truck monitoring everything from stop times to when and to whom a package was delivered. The result has been an increase in the number of stops in a day from eighty-five a decade ago to one hundred stops by 2015. The total number of daily package deliveries increased by 1.4 million between 2009 and 2013 as the telematics system was being rolled out, even as UPS reduced its number of drivers by 1,000 and overall UPS domestic employees by 22,000. Workers complain of a punishing pace and increased injuries.⁷⁷

The most prominent poster child for modern technology-driven speedups in the workplace is Amazon, whose automated warehouses and monitoring have become notorious. Workers are tracked minute-by-minute in its “fulfillment centers” in an extreme form of Taylorism where personal satellite navigation computers tell each worker the route they must travel to shelve goods and measure whether they meet speed targets. Output targets are relentlessly increased with laggards fired if they fail to meet the increased targets, even as the pace of work lowers the quality of the work experience and reportedly increases injuries.⁷⁸

C. Profiling of Workers Helps Companies Limit Wage Increases

While disruptive, such technological-driven increases in productivity and lowered employment would be nothing new if they were matched by higher wages reflecting the increased productivity. The most striking change in the modern economy is that gains in productivity do not seem to be matched by raises in pay.⁷⁹ One part of the explanation for this

76. Esther Kaplan, *The Spy Who Fired Me: The Human Costs of Workplace Monitoring*, HARPER'S MAG. (Mar. 2015), <http://harpers.org/archive/2015/03/the-spy-who-fired-me/>.

77. *Id.* (“If you go to one of these UPS facilities at shift-change time, you’d think you were at a football game, the way people are limping, bent over, with shoulder injuries, neck injuries, knee injuries,” said David Levin, an organizer with Teamsters for a Democratic Union.”).

78. Simon Head, *Worse than Wal-Mart: Amazon’s Sick Brutality and Secret History of Ruthlessly Intimidating Workers*, SALON (Feb. 23, 2014), http://www.salon.com/2014/02/23/worse_than_wal_mart_amazons_sick_brutality_and_secret_history_of_ruthlessly_intimidating_workers/.

79. The Economic Policy Institute has a section of their website devoted to articles highlighting the productivity-pay gap. *The Productivity-Pay Gap*, ECON. POL’Y INST. (Updated Aug. 2016), <http://www.epi.org/productivity-pay-gap/>; see also Anna Louie Sussman, *Inside the Fight Over Productivity and Wages*, WALL ST. J. (Sep. 8, 2015, 11:30 AM),

change may be that the pervasive surveillance technology gives employers greater insight not only into the work process, but also into the psyches of their employees—thereby giving employers the tools to know how to lower wages strategically without increasing costly unintended turnover costs.⁸⁰

Electronic workplace surveillance, e-mail and phone records, and web-surfing histories provide a trove of data useful for weeding out bad apples, influencing desired behavior, and negotiating pay. Companies have more opportunities than ever before to assess who is looking for a new job and who is not, who might leave a job, and who will stay no matter what.

One clear change is that the guaranteed, across-the-board annual raise is increasingly a thing of the past—one reason wages have stagnated overall in recent decades.⁸¹ For the decades before 2000, salaries went up about 4.0% a year, according to data by Aon Hewitt. As companies have recovered from the financial crisis, annual raises averaged only about 2.9% in 2014. Replacing across-the-board raises are targeted rewards and bonuses known as variable compensation. This form of compensation once accounted for only 3.9% of payrolls but now makes up 12.7% of compensation.⁸²

Companies are increasingly using data analysis to dole out those bonuses selectively only to the employees most likely to leave. A whole host of companies now scour employee's personal data, social media, and every other source of information on individuals to create comprehensive profiles of each worker. “[Data] has helped us determine, with ever-greater accuracy, an employee's probability of

<http://blogs.wsj.com/economics/2015/09/08/inside-the-fight-over-productivity-and-wages/>.

80. See Heather Boushey & Sarah Jane Glynn, *There Are Significant Business Costs to Replacing Employees*, CTR. FOR AM. PROGRESS (Nov. 16, 2012), <https://www.americanprogress.org/issues/economy/reports/2012/11/16/44464/there-are-significant-business-costs-to-replacing-employees/> (The Center for American Progress, a left-leaning think tank, aggregated thirty case studies from numerous research papers and found that the average cost to replace an employee is about 20% of that person's salary. For employees who make \$30,000 or less, the replacement cost is also lower, but the center estimates it's still about \$4,800. At a managerial level for someone making \$75,000, that turnover cost jumps to \$15,000).

81. Ben Leubsdorf & Jon Hilsenrath, *U.S. Workers Ask: Where's My Raise?*, WALL ST. J. (June 3, 2015), <http://www.wsj.com/articles/u-s-workers-ask-wheres-my-raise-1433385001> (“[A] Wall Street Journal analysis of Labor Department data points to persistent constraints on worker pay, even as the economy approaches full employment. The Journal found 33 U.S. metropolitan areas—from the small to the sizable—where unemployment rates and nonfarm payrolls last year returned to prerecession levels. In two-thirds of those cities—including Columbus; Houston; Oklahoma City; Minneapolis-St. Paul, Minn.; and Topeka, Kan.—wage growth trailed the prerecession pace.”).

82. Numbers are from Aon's survey of 1,064 organizations. Patricia Cohen, *One-Time Bonuses and Perks Muscle Out Pay Raises for Workers*, N. Y. TIMES (May 25, 2015), <http://www.nytimes.com/2015/05/26/business/one-time-bonuses-and-perks-muscle-out-pay-raises-for-workers.html>; see also Millie Dent, *Why Big Salary Raises May Be Gone for Good*, FISCAL TIMES (Aug. 26, 2015), <http://www.thefiscaltimes.com/2015/08/26/Why-Big-Salary-Raises-May-Be-Gone-Good>.

quitting,” related Will Wold, Credit Suisse’s Global Head of Talent Acquisition & Development, to one reporter. A whole range of new companies and software has been deployed to assist human relations departments to identify at an individual level which employees are thinking about making a move.⁸³ Or as Google’s President of People Operations told the *Harvard Business Review*, big data lets them “get inside people’s heads even before they know they might leave.”⁸⁴

Knowing which employees are likely to leave is critical in helping companies deploy efforts to retain them, but knowing which employees are *not* likely to leave is just as important, since it lets companies save money by slashing the annual salary bumps for that latter group. If employees are too in debt or worried about upcoming college costs for their kids or just psychologically wired against risking a job switch, companies can potentially use that information to reduce or even eliminate annual raises for them.

McKinsey and Company lays out this logic in a report, *Retaining Employees in Times of Change*,⁸⁵ where they advocate that companies not waste pay increases and bonuses on employees who “would have stayed put anyway.” They detail how different companies use data analysis to identify the employees at risk of leaving the company in order to offer them a “mix of financial and nonfinancial incentives tailored to their aspirations and concerns.” In McKinsey’s analysis,

83. Credit Suisse, *How Big Data Can Improve People Practice*, FINANCIALIST (July 17, 2014), <https://web.archive.org/web/20160328135016/https://www.thefinancialist.com/how-big-data-can-improve-people-practices>; see also Peck, *supra* note 40 (“Dawn Klinghoffer, the senior director of HR business insights at Microsoft, told me that a couple of years ago, with attrition rising industry-wide, her team started developing statistical profiles of likely leavers”); Thomas H. Davenport et al., *Competing on Talent Analytics*, HARV. BUS. REV. (Oct. 2010), <https://hbr.org/2010/10/competing-on-talent-analytics> (providing case studies of companies using data analytics to address questions like “Why do employees choose to stay with our company?”); Nikelle Murphy, *How Your Boss Already Knows If You Want to Quit Your Job*, CHEAT SHEET (Sept. 11, 2015), <http://www.cheatsheet.com/business/big-data-is-already-predicting-when-youll-quit-your-job.html/?a=viewall> (“Ultimate Software, a human resources company, developed and released its UltiPro Retention Predictor in 2013. The software uses 50 key data points that predicts the likelihood of an employee staying with the company for the next year.”); Michael Lev-Ram, *A Way to Help HR Professionals Predict the Future*, FORTUNE (Nov. 7, 2014), <http://fortune.com/2014/11/07/workday-human-resources/> (Aneel Bhusri, co-founder and CEO of Workday, “points to a scenario in which an HR manager would be notified when an employee is likely to leave their job. The new Workday apps cull data from both internal systems and outside sources like LinkedIn—an employee who is thinking of leaving is likely to update his or her profile page, which would then trigger a notification to the HR professional using the software, along with some recommendations for how to reduce the risk that the employee quits (offer leadership training, for example).”).

84. John Boudreau, *Predict What Employees Will Do Without Freaking Them Out*, HARV. BUS. REV. (Sept. 5, 2014), <https://hbr.org/2014/09/predict-what-employees-will-do-without-freaking-them-out>.

85. Sabine Cosack et al., *Retaining Key Employees in Times of Change*, MCKINSEY & CO. (Aug. 2010), <http://www.mckinsey.com/business-functions/organization/our-insights/retaining-key-employees-in-times-of-change>.

such incentives need only be offered to 5% to 10% of the workforce; the rest can either be allowed to leave or those employees are unlikely to depart even if offered no or minimal raises.

McKinsey offers this bottom-line projection of savings using the case study of a European industrial company: when they applied such an approach, they were able to slash their annual budget for compensation increases by 75% compared to their previous approach.

McKinsey argues that good use of data analysis will allow companies to avoid hefty pay hikes even for the employees they want to retain. By tracking employee goals, companies can offer training and other non-financial incentives, promising longer-term prospects of career advancement in lieu of immediate pay hikes. Some of these employees may indeed end up with higher pay down the line to make up for the deferred pay raises but, because not everyone can advance to higher positions, many or even most of the targeted employees may end up deferring pay for empty promises of longer-term payoffs. Since the employees most likely to leave a firm for another are inherently more amenable to risk-taking, it's unsurprising that many would take such a chance—and McKinsey highlights a case study of a financial services firm eliminating all monetary rewards in favor of leadership development incentives and retaining all targeted employees.⁸⁶

McKinsey is not alone in promoting this new gospel of selective raises. Josh Bersin of Deloitte argues in *The Datafication of HR* that, similarly to McKinsey, most employees will stay put in a firm with much lower raises than traditional industry standards, so compensation packages should be focused mostly on the smaller set of high performers most likely to move to another firm.⁸⁷ Ironically, the biggest obstacle for the consulting firm in implementing their recommendations were top managers themselves who resisted eliminating across-the-board pay increases because this approach requires “a much more unequal distribution of compensation, which makes some managers very uneasy.” But, “[a]fter months of socialization . . . [and] over time they realized that data could make them smarter in their decisions.”⁸⁸

Carole Hathaway and coauthors at consultancy Towers Watson similarly summarizes the process: “It really comes down to segmentation and differentiation and presenting a bigger slice of the rewards pie to key members of staff that you want to secure for the long-

86. *Id.*

87. Bersin, *supra* note 68 (“[M]idlevel performers, who greatly enjoyed working at the company, would not leave even if their raises were as low as 90 percent of industry average” but higher performers needed unusually higher bonuses.)

88. *Id.* (“A vice president of HR for a financial firm told us: ‘The biggest challenge we had with our analytics findings was convincing our top executives that their gut feel was wrong.’”).

term.”⁸⁹ This language of “segmentation” and “differentiation” echoes the same process seen in financial and consumer marketing, where different people are offered vastly different financial products or see different prices in online stores based on data-driven profiling.⁹⁰ These consultants are highlighting how price discrimination—offering different prices for the same good to different targeted customers⁹¹—has dramatically increased in the workplace as variable pay is increasingly offered based not on actual job title or job performance but on employer psychological profiling of each employee.

This process is an extreme version of the compensation dynamics outlined by Freeman and Medoff, where, under an employment regime driven by the threat of employee “exit,” compensation becomes oriented to the most marketable employees. But where Freeman and Medoff emphasized an older regime favoring cash incentive over fringe benefits, which appealed to younger workers as a class,⁹² new data tools allow even more segmentation of the workforce to direct variable compensation to only a subset of that class who actually may be thinking about leaving. With employers knowing not just who are their most valuable workers but which employees themselves know their value, they can minimize their wage bill by cutting pay for employees who don’t know their value or are too timid to demand compensation in line with that value.

In response so these practices, Part V discusses strengthening the

89. Chantal Free et al., *How Do You Engage and Retain Employees in the Battle for Top Talent?*, WILLIS TOWERS WATSON (Mar. 2015), <https://www.towerswatson.com/en/Insights/IC-Types/Ad-hoc-Point-of-View/2015/03/Viewpoint-Strategies-for-engaging-and-retaining-top-talent> (“Most companies have their hands tied and simply cannot justify above market salaries, large pay rises and big bonuses in the current climate. The challenge is working out how to use a relatively small pot effectively to ensure sufficient recognition for those employees with the highest performance levels or those with critical skills where the market might be moving at a faster pace.”).

90. I explored the ways this segmentation leads to increasing economic costs to consumers in online markets in my article *The Costs of Lost Privacy: Consumer Harm and Rising Economic Inequality in the Age of Google*, 40 WM. MITCHELL L. REV. 849 (2014), highlighting this kind of segmentation based on consumer profiling and price discrimination; see also S. Salop & J.E. Stiglitz, *The Theory of Sales: A Simple Model of Equilibrium Price Dispersion with Identical Agents*, 72 AM. ECON. REV. 1121, 1122–23 (1982) (highlighting the lack of equilibrium price when firms can “differentiate between different groups in the population”).

91. See Nathan Newman, *The Costs of Lost Privacy: Consumer Harm and Rising Economic Inequality in the Age of Google*, 40 WM. MITCHELL L. REV. 849, 865–874 (2014) (discussing in detail the relationship of data-driven price discrimination in consumer markets and the ways it can increase inequality and economic losses for consumers); see also IAN AYRES, *SUPER CRUNCHERS: WHY THINKING-BY-NUMBERS IS THE NEW WAY TO BE SMART* 190 (2007) (Firms use data mining to set individualized prices even at traditional stores as firms become “more adept at figuring out how much pricing pain individual consumers are willing to endure and still come back for more.”); Jennifer Valentino-Devries et al., *Websites Vary Prices, Deals Based on Users’ Information*, WALL ST. J. (Dec. 24, 2012), <http://www.wsj.com/articles/SB10001424127887323777204578189391813881534>.

92. BENNETT & KAUFMAN, *supra* note 17, at 64–65.

ability of workers to exercise a “voice” alternative in collective bargaining to challenge both the intensity of employer tracking and these unequal compensation systems as one critical step in addressing the wage stagnation and rising inequality in pay we have seen.

IV. DISORGANIZING AND REORGANIZING WORK VIA DATA-DRIVEN MANAGEMENT

If variable pay is one way that data-driven management subjects workers to a marginal cost model in the workplace, the increase in variable hours and “on-demand” employment only deepens it. This includes not only the direct contracting relationships of new firms such as Uber but the ways that even traditional companies in sectors such as retail increasingly mimic a contracting model with their own employees, as each employee has to bid on shifts, sometimes even on a daily basis.⁹³

One study found that the category of jobs performed by part-time freelancers or independent contractors rose from twenty million in 2001 to thirty-two million by 2014.⁹⁴ Another study jointly conducted by the Freelancers Union and Elance-oDesk (now UpWork), the largest platform for hiring independent contractors, found that fifty-three million workers in the U.S. are involved in some aspect of freelancing, from working full-time as contractors to moonlighting outside a regular job to being a temporary worker.⁹⁵ Add in the full-time workers whose schedules are increasingly in flux, and the numbers of workers whose hours are not fixed around the traditional workweek has grown substantially.

A. Data Mining's Role in Rise of Freelancing and Variable Hours

Data analysis has been a key factor in calculating and managing those variable hours and the new employment relationships increasingly used to implement them. Amazon pioneered large-scale automated task management on the web in 2005 with its Mechanical Turk system, but was quickly joined by a host of other employers such as TaskRabbit, Homejoy, ODesk, and Uber. The evolution of these software-driven systems used for contracting has allowed companies to dispense with large sections of middle management, creating what some note is a

93. Kaplan, *supra* note 76.

94. Noam Scheiber, *Growth in the 'Gig Economy' Fuels Work Force Anxieties*, N. Y. TIMES (July 12, 2015), http://www.nytimes.com/2015/07/13/business/rising-economic-insecurity-tied-to-decades-long-trend-in-employment-practices.html?_r=0.

95. Sara Horowitz & Fabio Rosati, *53 Million Americans are Freelancing, New Survey Finds*, FREELANCERS UNION BLOG (Sept. 4, 2014), <https://blog.freelancersunion.org/2014/09/04/53million/>.

growing disparity between core firms with the employees writing the software (deemed Application Program Interfaces (APIs) in programmer language) and those completing tasks often hired formally as independent contractors.⁹⁶

While companies such as Uber may assert that the drivers hired to drive on their platform are not legally employees, the software employees use actually allows the core firms to direct the activities of workers more directly than was often allowed earlier. Researchers Alex Rosenblatt and Luke Stark have detailed the ways the software carefully monitors the 400,000 Uber drivers in the United States (and 1.1 million globally as of April 2016) and how algorithmic systems and consumer feedback substitute software for traditional management functions. Drivers may be able to log into the app when they want, but once they do, the company sets the fares passengers pay and rates that drivers are paid and direct drivers to which customers they are to pick up. Drivers who refuse customers too often are rated downwards and deactivated on the system. Consumer feedback is used to continually ratchet up pressure on drivers who face deactivation if they do not stay ahead of other drivers.⁹⁷ In many ways, these data analytics systems give top management deeper control of line workers' minute-to-minute actions than traditional layers of middle management did in the past.⁹⁸

If “non-employees” are tightly managed via software, the flipside is that software is increasingly used to put traditional employees in the position of bidding for job shifts. Retail workers especially have found that they are being “turned into day laborers” in the words of advocates like the Fair Workweek Initiative.⁹⁹ Involuntary part-time employment among retail workers skyrocketed from 644,000 in 2006 to 1.6 million by 2010. A 2012 report found that only 17% of retail employees had a regular schedule—and only 29% of retail employees reported that their hours held steady week to week.¹⁰⁰ Speeding this process are

96. Anthony Wing Kosner, *Google Cabs and Uber Bots Will Challenge Jobs 'Below The API'*, FORBES (Feb. 4, 2015), <http://www.forbes.com/sites/anthonykosner/2015/02/04/google-cabs-and-uber-bots-will-challenge-jobs-below-the-api/#12a081f42470>.

97. Alex Rosenblatt, *The Truth About How Uber's App Manages Drivers*, HARV. BUS. REV. (Apr. 6, 2016), <https://hbr.org/2016/04/the-truth-about-how-ubers-app-manages-drivers> (Upwork uses a similar consumer-driven system to monitor its dispersed system of freelancers, where contractors on the site are required to allow the company to randomly collect screenshots of their computers every ten minutes to share with customers); see Kaplan, *supra* note 76.

98. SIMON HEAD, MINDLESS: WHY SMARTER MACHINES ARE MAKING DUMBER HUMANS (2014) (arguing that “Corporate Panoptics systems” create a far tighter system of business control than older mass production regimes, while giving the illusion of freedom for workers who don't see middle management around them).

99. Kaplan, *supra* note 76.

100. Stephanie Luce & Naoki Fujita, *Discounted Jobs: How Retailers Sell Workers Short*, RAP & CUNY MURPHY INST. 8 (2012), <http://retailactionproject.org/wp-content/uploads/2012/03/7->

“workforce management systems” run by companies like Kronos (the same company running personality hiring tests for many companies), which combines in-store sales data with workforce data to optimize schedules to reduce overstaffing at any hour of the day. The introduction of the software has coincided, according to accounts of advocates against the system, with the elimination of full-time work at store after store.¹⁰¹ A key feature of the systems is that the employees willing to be available at any time are the most likely to get a full forty hours of work, while those workers with family or other obligations limiting their availability will be slotted for fewer overall hours each week.¹⁰² As with variable pay, this redirects pay in the workplace from the median worker towards the younger, more time-flexible workers who are able to accommodate the demands of on-demand employment markets.

B. Reorganization of Workplace Shifts Risks and Costs onto Workforce

A number of analysts have noted how these systems shift risk and job search costs onto workers.¹⁰³ Full-time employment puts the risk of temporary drops in customer demand on the company, which must pay employee salaries whether they have work for them to do or not, while the increasing shift to on-demand part-time scheduling puts that financial risk of no pay in event of low demand on the employees. And whatever the posted pay on various “gig-economy” sites, author Sarah Kessler notes in a detailed recounting of her experiments using various sites like TaskRabbit and Fiverr that the low pay was only compounded by wasted time posting profiles and bidding on different jobs.¹⁰⁴ Adding to the indignity of down time is that companies benefit from the data generated by workers in their systems even when those workers aren’t on the clock. Even as Uber drivers wait for a pickup request from the Uber app, the company tracks their movement to improve their algorithms understanding traffic patterns; such data assists the company

75_RAP+cover_lowres.pdf; see also Perry Stein, *D.C. Advances Labor Bill That Would Tell Businesses How to Schedule Employees*, WASH. POST (June 23, 2016), https://www.washingtonpost.com/local/dc-politics/dc-advances-labor-bill-that-would-tell-businesses-how-to-schedule-employees/2016/06/23/ef3781e2-3967-11e6-9ccd-d6005beac8b3_story.html (In Washington, D.C., a survey found that 40% of workers had seen their schedules changed at least once per month, 50% of the time with less than a two-day notice).

101. *Id.*

102. Kaplan, *supra* note 76.

103. Scheiber, *supra* note 94 (“In the past, firms overstaffed and offered workers stable hours,” said Susan N. Houseman, a labor economist at the W. E. Upjohn Institute for Employment Research. “All of these new staffing models mean shifting risk onto workers, making work less secure.”).

104. Sarah Kessler, *Pixel & Dimed: On (Not) Getting by in the Gig Economy*, FAST CO. (Mar. 18, 2014), <https://www.fastcompany.com/3027355/pixel-and-dimed-on-not-getting-by-in-the-gig-economy>.

in managing their workforce and even may be a financial asset for future data sharing with municipalities and other companies.¹⁰⁵

One other impact on employee management made by data analytics is the increasing destruction of traditional paths of promotion as the option for promotion for line workers to middle management. One Silicon Valley analyst describes a world of “above the API” jobs where core employees build apps and manage the system and an army of “worker bees below the software layer [who] have no opportunity for on-the-job training that advances their career,” such that “compassionate social connections don’t pierce the software layer either.”¹⁰⁶

This reorganization of workplace relationships is in some ways not surprising in light of much of the scholarship on the question of why hierarchical firms arose during the industrial revolution. Economist Ronald Coase was an intellectual pioneer in highlighting the “transaction costs” driving the decision to replace market relationships with hierarchical management, with many of those costs involving the time and resources to find information and negotiate contracts.¹⁰⁷ Oliver Williamson, working in the Coasian tradition, later outlined more detailed reasons why incomplete information by companies is a key driver of hierarchy as a way to reduce risk. In particular, the need to maintain surveillance to avoid “shirking, embezzlement and quality shading” in market exchanges creates a workforce overseen by middle management rather than relying on market exchanges with independent craftsmen.¹⁰⁸ Workers in turn gain stability in employment, especially when they develop skills tied to a particular employer whose value will be hard to transfer to an alternative company.¹⁰⁹

It is, in fact, the expanded surveillance and control which new data analytics affords that allows the widespread replacement of formal, middle-management hierarchy with direct contracting relationships as with Uber or quasi-market relationships as with bidding for job shifts in retailers.¹¹⁰ With control of information overwhelmingly shifting into the hands of employers, employers unsurprisingly choose the contracting structure to gain a structural or legal advantage for firm

105. Jay Cassano, *How Uber Profits Even While Its Drivers Aren't Earning Money*, VICE MOTHERBOARD (Feb. 2, 2016), <http://motherboard.vice.com/read/how-uber-profits-even-while-its-drivers-arent-earning-money>.

106. Peter Reinhardt, *Replacing Middle Management with APIs*, REIN.PK (Feb. 2015), <http://rein.pk/replacing-middle-management-with-apis>.

107. Ronald Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386, 389–90 (1937).

108. OLIVER E. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM: FIRMS, MARKETS, RELATIONAL CONTRACTING* 212 (1985).

109. *Id.* at 243.

110. Julia Tomassetti, *Does Uber Redefine the Firm? The Postindustrial Corporation and Advanced Information Technology*, 34 *HOFSTRA LAB. & EMP. L. J.* (forthcoming).

leadership, thereby also preventing employee collective action seeking greater share of transaction surpluses. As legal scholar Noah Zatz argues, too often the assumption is that legal rules reflect some underlying economic structure but, in fact, employers use their power to “substitute contracting for employment and thereby reduce the threat of unionization.”¹¹¹ As the next section explores in its conclusion, the question is whether existing labor law is flexible enough to allow employees to similarly choose labor union structures that can rebalance power and control of information across the multiple legal firm and contracting structures that technology now allows.

V. REMAKING LABOR LAW IN A DATA-DRIVEN WORLD

If the information advantages of employers in wage negotiations are currently so large, the question is the best route to reestablishing greater parity in that power relationship. Most efforts in this regard in recent decades have focused on legislative attempts to restrict employer access to employee information through banning a successive set of tools used by employers, including banning or restricting use of medical exams,¹¹² polygraph tests,¹¹³ genetic information,¹¹⁴ credit reports,¹¹⁵ criminal background checks,¹¹⁶ video surveillance,¹¹⁷ and mandatory disclosure of social media passwords.¹¹⁸

While no doubt preventing a range of specific discriminatory actions against individuals, this “negative rights” approach of restricting employer information has often been ineffective even on its own terms.

111. Noah D. Zatz, *Beyond Misclassification: Tackling the Independent Contractor Problem Without Redefining Employment*, 26 ABA J. LAB. & EMP. L. 279, 280 (2011).

112. This flows largely from the American with Disabilities Act. See EEOC v. Flambeau, Inc., 131 F. Supp. 3d 849 (W.D. Wis. 2015) (the EEOC alleged a company’s requirement to participate in a wellness program or face termination of their health insurance violated the ADA).

113. Employee Polygraph Protection Act, Pub. L. No. 100-347, 102 Stat. 646 (1988).

114. Genetic Information Nondiscrimination Act of 2008, Pub. L. No. 110-233, 122 Stat. 881 (2008).

115. 15 U.S.C.S. § 1681b (Lexis, Lexis Advance through Pub. L. No. 114-243).

116. See Michelle Natividad Rodriguez & Beth Avery, *Ban the Box: U.S. Cities, Counties, and States Adopt Fair Hiring Policies*, NAT’L EMP. L. PROJECT (June 1, 2016), <http://www.nelp.org/publication/ban-the-box-fair-chance-hiring-state-and-local-guide/> (highlighting twenty-four states and one hundred cities that have adopted rules around screening employees based on criminal records).

117. See *Privacy Rights in Connecticut*, ACLU OF CONN. (May 2013), www.acluct.org/wp-content/uploads/2013/08/privacy-rights.pdf (States vary in any protection granted here, but Connecticut is typical for laws that exist in prohibiting video surveillance in locker rooms and bathrooms but allows monitoring otherwise as long as employees are given notice).

118. *State Social Media Privacy Laws*, NAT’L CONF. ST. LEGIS. (July 6, 2016), <http://www.ncsl.org/research/telecommunications-and-information-technology/state-laws-prohibiting-access-to-social-media-username-and-passwords.aspx> (highlighting twenty-five states with laws restricting access by employers to social media of employees).

Data analysis gives employers so many additional proxies for banned tools that employers can often achieve whatever exclusions from their workforce or internal surveillance they desire. Additionally, because this approach has generally done nothing to enhance employee knowledge for use in wage negotiations, it seems to have also done little to stem the wage stagnation noted at the beginning of the article.

A. How Labor Law in Recent Decades Ignored Danger of Information Asymmetry

Current federal labor law has language that, if interpreted in ways that recognize the current information asymmetry in employer–employee relations, would provide tools to employees that could positively increase their knowledge both to demand greater pay and to reshape the workplace into one that better respects employee dignity. This approach would likely be more successful than purely negative statutory restrictions on employer behavior.¹¹⁹ Federal labor law at its heart is designed to strengthen information parity; as the National Labor Relations Board wrote in 1936 in the wake of the passage of the Wagner Act, “Interchange of ideas, communication of facts peculiarly within the knowledge of either party . . . [are] of the essence of the bargaining process.”¹²⁰ This is the principle that drives requirements during union elections for employers to provide lists of employees and their contact information,¹²¹ just as it requires them to provide unions with broad details of a company’s current wage data during collective bargaining negotiations.¹²²

In recent decades, along with a general set of decisions undermining labor power,¹²³ the principle that labor law is designed to create some degree of informational parity between workers and firm management

119. See Part VI of this article for more on why this collection action approach is more likely to be effective than new individual privacy rights for employees.

120. *S.L. Allen & Co.*, 1 N.L.R.B. 714, 728 (1936).

121. *Excelsior Underwear Inc.*, 156 N.L.R.B. 1236 (1966) (requiring release of employee names and addresses of employees to union during union organizing drives).

122. *NLRB v. F.W. Woodworth Co.*, 352 U.S. 938 (1956) (holding that the right to general wage information in workplace stems from section 8(d) focus that collective bargaining takes place with respect to wages, hours, and other terms and conditions of employment.)

123. For a broad outline of court interpretations of the NLRA that weakened labor power, see Julius Getman, *The National Labor Relations Act: What Went Wrong; Can We Fix It?*, 45 B.C. L. REV. 125 (2003). Notable Supreme Court decisions cited include *Fireboard Paper Prods. Corp. v. NLRB*, 379 U.S. 203, 223 (1964), *First Nat’l Maint. Corp. v. NLRB*, 452 U.S. 666, 676–80 (1981) (removing the issue of plant closings from the bargaining table and removing other areas involving capital investment from the bargaining requirement), and early decisions like *NLRB v. Mackay Radio & Tele. Co.*, 304 U.S. 333, 345–46 (1938) (recognizing an employer’s right to hire permanent replacements for striking employees).

has been ignored repeatedly and undermined by the courts and by the NLRB (at least until some recent positive changes under the Obama administration, discussed below). Most symbolic of this modern judicial apathy towards information disparity in the workplace was the Supreme Court's 1992 *Lechmere, Inc. v. NLRB*¹²⁴ decision, which overturned a decision by the NLRB¹²⁵—notably a relatively conservative Board with a majority of appointees by Ronald Reagan—which had given union organizers the right to hand out leaflets and talk to workers in the public parking lot of a multi-store shopping plaza.

Noting that state property rights gave *Lechmere* the right to exclude the organizers from its property, the Court decision written by Justice Clarence Thomas framed the union's need for access as purely a marketing challenge that the Court had little obligation to facilitate:

The Board's conclusion in this case that the union had no reasonable means short of trespass to make *Lechmere*'s employees aware of its organizational efforts is based on a misunderstanding of the limited scope of [union access to employer property under the NLRA] Such direct contact, of course, is not a necessary element of "reasonably effective" communication; signs or advertising also may suffice. In this case, the union tried advertising in local newspapers; the Board said that this was not reasonably effective because it was expensive and might not reach the employees Whatever the merits of that conclusion, other alternative means of communication were readily available. Thus, signs (displayed, for example, from the public grassy strip adjoining *Lechmere*'s parking lot) would have informed the employees about the union's organizational efforts Access to employees, not *success* in winning them over, is the critical issue—although success, or lack thereof, may be relevant in determining whether reasonable access exists.¹²⁶

There is no sense that the union formation and collective bargaining process is anything more than a one-way publicity operation by the union, so "direct contact" with workers is not necessary despite a prime part of informational access to workers being the ability to hear from the employees about their concerns and identify the leadership networks in a particular workplace. Nowhere does the Court acknowledge that imposing a massive cost on communication, such as needing to resort to newspaper advertising rather than much less costly and direct leafletting,

124. 502 U.S. 527 (1992).

125. *Lechmere, Inc.*, 295 N.L.R.B. 92 (1989).

126. *Lechmere*, 502 U.S. at 540–41.

would severely increase information disparities in employer-union conflicts. This decision came in the exact period when more employers were tightening their own surveillance and information-gathering operations among their employees, increasing their control of the workplace social graph even as the Supreme Court was severely undercutting labor unions' ability to engage with employees to create a counter-institution for organizing and bargaining purposes.

The *Lechmere* decision reflected how far the Court had travelled in a generation. In 1968, in *Amalgamated Food Employees Union v. Logan Valley Plaza*, the Court had declared that a grocery workers union had not just a statutory right but a constitutional right under the First Amendment to communicate on company property in areas otherwise open to the public because employer restrictions on that right would "substantially hinder the communication of the ideas which petitioners seek to express."¹²⁷ Within eight years, changes in the composition of the Court would lead to a decision expressly overturning *Logan Valley* and eliminating the right under the Constitution for union access in such retail spaces, but leaving it to the NLRB to develop statutory rules on when such access was required under the National Labor Relations Act.¹²⁸ It was that compromise developed by the Reagan administration NLRB between property rights and employee rights¹²⁹ that *Lechmere* overturned with a finding that property rights would be dispositive in all but a few exceptions.

The Court's indifference towards the communication rights of unions in *Lechmere* is in sharp contrast to its solicitation for employer communication rights in *Chamber of Commerce of United States v. Brown*,¹³⁰ which in 2008 struck down a state law that had limited use of public money by government contractors to hire "union avoidance" consultants as violating employer free speech rights under the NLRA. Despite the fact that the state law applied only to government-provided funds, not any private revenue a contractor might generate, the Court ruled that state limitation on use of any funds to oppose unionization would undermine Congressional intent "favoring uninhibited, robust, and wide-open debate in labor disputes"¹³¹ (quoting a 1974 decision that notably appeared nowhere in the majority opinion in *Lechmere*).

127. *Amalgamated Food Emps. Union v. Logan Valley Plaza*, 391 U.S. 308, 323 (1968).

128. *Hudgens v. NLRB*, 424 U.S. 507, 520-21 (1976).

129. *Jean Country*, 291 N.L.R.B. 11, 19 (1988) ("[O]ur ultimate concern . . . is the extent of impairment of the Section 7 right if access should be denied, in balance with the extent of impairment of the private property right if access should be granted.").

130. 554 U.S. 60, 62 (2008).

131. *Id.* at 68 (quoting *Letter Carriers v. Austin*, 418 U.S. 264, 272-73 (1974)).

B. Recent NLRB Decisions Protecting Technology-Based Worker-to-Worker Communications

Despite that fact that there were seventy-five years of precedents protecting the right of workers to communicate with one another about wages and work conditions via conversation¹³² and on leaflets,¹³³ it took two decades after email was introduced to many workplaces for the National Labor Relations Board to extend those rights to email, social media and online “blogs”—overruling precedents that had left workers subject to dismissal for a stray email or blog criticizing their boss or work conditions.¹³⁴

In a series of recent decisions, the NLRB ruled that employer policies prohibiting employees from posting on social media when the speech involves terms and conditions of employment unlawfully restricts employees’ section 7 rights.¹³⁵ The Board also protected employees’ rights to use camera and other recording devices to get evidence supporting those speech rights.¹³⁶ These decisions culminated in the 2014 *Purple Communications* Board ruling which upheld employee rights to communicate with one another using corporate email systems regarding work conditions,¹³⁷ overruling the 2007 *Register Guard* NLRB decision which had upheld a company’s complete ban on non-

132. *Republic Aviation Corp. v. NLRB*, 324 U.S. 801, 803–04 n.10 (1945) (creating presumption that a ban on oral solicitation on employees’ nonworking time was “an unreasonable impediment to self-organization,” and any restriction on such activity must be justified by “special circumstances” making the restriction necessary in order to “maintain production or discipline”).

133. *Stoddard-Quirk Mfg. Co.*, 138 N.L.R.B. 615 (1962) (striking down rule banning distribution of union literature in nonworking areas of company premises).

134. *In re the Guard Pub. Co.*, 351 N.L.R.B. 1110 (2007); *Guard Pub. Co. v. NLRB*, 571 F.3d 53 (D.C. Cir. 2009).

135. *Costco Wholesale Corp.*, No. 34-CA-012421, 2014 WL 6472003 (N.L.R.B. Nov. 19, 2014); *see also* *Bettie Page LLC v. Design Tech. Holding LLC*, No. 14-cv-00394-SEB-TAB, 2015 U.S. Dist. LEXIS 44648 (S.D. Ind. Jan. 28, 2015) (Employees posted messages on Facebook critical of manager; after manager fired all three employees, the ALJ ruled for employees and the NLRB affirmed with back pay for the employees); *Hispanics United of Buffalo, Inc.*, No. 03-CA-027872, 2012 NLRB LEXIS 852 (N.L.R.B. Dec. 14, 2012) (Employees posted critical remarks of a fellow employee on their Facebook page from a home computer, with other employees joining in. All were fired for “bullying” coworker but the ALJ reinstated terminated employees with back pay and benefits, since employees were discussing terms and conditions of employment.).

136. *See* *Whole Foods Market, Inc.*, Nos. 01-CA-096965, 2015 NLRB LEXIS 949 (N.L.R.B. Dec. 24, 2015); *Rio All-Suites Hotel & Casino*, No. 28-CA-060841, 2015 NLRB LEXIS 663 (N.L.R.B. Aug. 27, 2015) (finding that employer rules broadly prohibiting recording in the workplace on employees’ own time and in nonwork areas are impermissible); *see also* *T-Mobile USA, Inc.*, Nos. 02-CA-115949, 2016 WL 1743244 (N.L.R.B. Apr. 29, 2016) *enforced* *T-Mobile USA, Incorporated v. NLRB*, No. 16-60284 (5th Cir. July 25, 2017) (striking down company rule against using cameras or other recording materials at work was violation of the law).

137. *Purple Comm., Inc.*, Nos. 21-CA-095151, 2014 NLRB LEXIS 952 (N.L.R.B. Dec. 11, 2014).

business use of corporate email systems.¹³⁸

Strikingly, the decision focused intently on technology's role in shaping the modern workplace. Criticizing the Board dissenters' argument that workers could just use their own private email, the Board majority wrote: "work email networks came about—and thrive—exactly because they facilitate communication among the employees in particular work forces. Employees do not share all of the same private media options, due to the cost and variety of those options. . . ."¹³⁹ The Board wrote a nuanced description of the fractured modern workplace where colleagues often do not share the same worksite or even the same shift where the only link is the workplace email system:

Employees may also be virtual strangers to each other, separated by facility, department, or shift. They may have no regular face-to-face contact with each other at work, and no practical way to obtain each other's email addresses, social media account information, or other information necessary to reach each other individually or as a discrete group (as distinct from the general public) by social media, texting, or personal email.¹⁴⁰

For further support the Board cited to the growing email use at work¹⁴¹ and the rise in telework where many coworkers never meet face to face.¹⁴² The Board criticized both the *Register Guard* majority and the *Purple Communications* dissenters for ignoring these changes in the workplace and failing "to adapt the Act to the changing patterns of industrial life."¹⁴³

The Board rejected the relevancy of the *Lechmere* string of cases because *Purple Communications* focused only on the right of employees to use corporate email, not the rights of non-employee access to corporate email systems,¹⁴⁴ which may be left to a future decision. While the Board also noted the complications for employees and employers of when exactly "non-work" time exists on the job where this

138. *In re the Guard Pub. Co.*, 351 N.L.R.B. 1110 (2007), *enforced in relevant part, remanded sub nom.* *Guard Publishing v. NLRB*, 571 F.3d 53 (D.C. Cir. 2009).

139. *Purple Comm., Inc.*, 2014 NLRB LEXIS 952, at *23 n.18.

140. *Id.*

141. *Id.* at *28 n.23 ("[B]y 2018, business email will account for over 139.4 billion emails sent and received per day.").

142. *Id.* at *23 n.18.

143. *Id.* at *34 n.33 (citing to *Hudgens v. NLRB*, 424 U.S. 507, 523 (1976) (citing *NLRB v. J. Weingarten, Inc.*, 420 U.S. 251, 266 (1975))).

144. *Purple Comm., Inc.*, 2014 NLRB LEXIS 952, at *56–57 nn.61–62 (also noting that *Lechmere* and its string of cases were based on access to physical property, where court-mandated access is far more disfavored than access to non-real property).

right could be used, they took that as one more indication of how the “blurring of the line between working time and nonworking time” . . . [actually reflects] “far broader developments in technology . . . and the structure of current workplaces” (which enable not only the performance of personal business during working time but also the performance of work during nonworking time).¹⁴⁵

The management bar widely and loudly denounced the *Purple Communications* decision. Commentators claimed that “*Purple Communications* represents a tectonic shift.”¹⁴⁶ One lawyer from Reed Smith LLP complained, “the NLRB once again elevated employee-protected activity over employer property rights,” and “an employer’s communication system may also become an incredibly effective tool used to recruit members to form or join class action cases.” Another lawyer from Fisher & Phillips said of the case: “Emboldening unions with the ability to organize by proxy via email represents a further erosion of the rights of employers to *police the virtual world*.”¹⁴⁷ These commentators are right to be worried; the very fear of losing the court protection of employer rights to police the virtual world has, as demonstrated in this article, been a keystone of limiting workers’ rights and economic equality over the last generation.

Given the composition of the Supreme Court in 2014, many management bar commentators optimistically argued that the “dissenting views serve as a potential preview to how a more conservative federal appeals panel (or, ultimately the Supreme Court) might analyze the issue in future appeals.”¹⁴⁸ Whatever the current Court and NLRB does, there is an opportunity in the future for the NLRB to build on the ground of *Purple Communications* and its antecedents to directly challenge the technology-driven abuses stemming from employee pre-hire screening, surveillance, wage and benefits determinations, and the structure of the workplace outlined earlier in this article.

145. *Id.* at *208.

146. Philip Gordon & Noah Lipschultz, *NLRB Creates Right to Use Corporate E-Mail to Organize and to Complain About Work: Ten Key Implications for Employers*, LITTLER INSIGHT (Dec. 15, 2014), <https://www.littler.com/nlr-creates-right-use-corporate-e-mail-organize-and-complain-about-work-ten-key-implications>.

147. Joel Barras & Steve Bernstein, *Lawyers Weigh in on NLRB Employer Email Ruling*, LAW360 (Dec. 11, 2014), <http://www.faegrebd.com/webfiles/Lawyers%20Weigh%20In%20On%20NLRB%20Employer%20Email%20Ruling.pdf> (emphasis added).

148. Gordon & Lipschultz, *supra* note 146.

C. Stopping Pre-Hire Exclusion of Pro-Union Employees

Employers may need to evaluate more carefully which questions they ask on pre-hire employment tests in light of EEOC investigations¹⁴⁹ and various other statutory laws against pre-employment discrimination.¹⁵⁰ In contrast, the subtler screening-out of pro-union agitators will take both more intensive investigations by the NLRB and some rejuvenation of NLRA doctrine on the right of workers to information during collective bargaining to stop the practice.

For groups of workers who win an election and begin collective bargaining, one place to start will be demanding access to the hiring and promotion algorithms used by their employer where there are suspicions that pre-hire tests are used in biased ways. The right of unions to demand information from employers is a key tool provided for under the National Labor Relations Act, and it could be an even greater weapon in rebalancing information inequality in the workplace. This power emanates from section 8(a)(d) of the Act imposing a duty on employers to bargain in good faith.¹⁵¹ From the Act's inception, the NLRB included an employer duty to furnish relevant information as part of good faith bargaining¹⁵² which was recognized explicitly by the Supreme Court in 1956.¹⁵³

Even though union negotiators have a presumptive right of access to basic information on the operations of a company relevant to a union contract such as seniority lists, insurance policies, rates of pay, information on holidays, and information on benefits,¹⁵⁴ court decisions in recent decades have disfavored automatic access to data on many

149. Weber & Dwoskin, *supra* note 44; Press Release, *supra* note 43.

150. See Ian Byrnside, *Six Clicks of Separation: The Legal Ramifications of Employers Using Social Networking Sites to Research Applicants*, 10 VAND. J. ENT. & TECH. L. 445, 451 (2008) (noting that employers are increasingly monitoring job applicants' social media pages and observing that this leads to a gray area of the law, as employers have previously faced legal ramifications for using certain methods to investigate an applicant's criminal history or financial status). Byrnside also notes that employers wanting to explore a potential employee's credit history will have to comply with specific requirements under the Fair Credit Reporting Act and employment decisions based on criminal records must be "consistent with 'business necessity' and [must] not have a disparate impact on a certain class of applicants"; see also Stephen F. Befort, *Pre-Employment Screening and Investigation: Navigating Between a Rock and a Hard Place*, 14 HOFSTRA LAB. & EMP. L. J. 365, 401-02 (1997) (noting that more than half of all states have enacted statutes similar to the Employee Polygraph Protection Act, many with restrictions even more stringent than those established by federal law).

151. 29 U.S.C. § 158(d) (2012) ("[T]o bargain collectively is the performance of the mutual obligation of the employer and the representative of the employees to meet at reasonable times and confer in good faith with respect to wages, hours, and other terms and conditions of employment.").

152. S.L. Allen & Co., 1 N.L.R.B. 714, 729 (1936).

153. NLRB v. Truitt Mfg. Co., 351 U.S. 149 (1956) (requiring a company to supply information on the financial condition of the company to substantiate claim that it could not afford pay raises).

154. Dyncorp/Dynair Servs., Inc., 322 N.L.R.B. 602, 602 (1996).

hiring and promotion policies, even as companies have ramped up use of algorithmic decision-making in those areas. The seminal Supreme Court decision in this area was *Detroit Edison Co. v. NLRB* in 1979¹⁵⁵ which overturned an order by the NLRB for a company to disclose to a union during bargaining the texts of standardized tests that the employer was using to decide on promotions. The union had wanted to evaluate the tests in arbitration to determine their suitability for that purpose, but the Supreme Court sided with the employer's argument that this might undermine the tests' usefulness for the future if not kept confidential. While the NLRB argued the union's need for the information outweighed the potential harm for the employer, Justice Potter Stewart representing the majority stated that employer's business interest trumped the union need: "The Board has cited no principle of national labor policy to warrant a remedy that would unnecessarily disservice that [business] interest."¹⁵⁶

Detroit Edison has come to stand for a more general principle of restriction on union access to information during collective bargaining, where the Court rejected any "absolute rule" relating to disclosure of information,¹⁵⁷ forcing unions to make case-by-case arguments to get access to employer information that indirectly bears on work conditions, pay, and methods employers use for determining each. For example, unions seeking information on potentially toxic or unsafe conditions at work have been limited if that information is covered by trade secret law, forcing the unions to bargain over getting the information rather than receiving it as of right—i.e., workers may have to sacrifice future wage demands as a tradeoff to find out if chemicals they are handling are potentially poisoning them.¹⁵⁸ Courts have even used the *Detroit Edison* standard to reject requests for information on the wages of non-union workers to assess the comparative fairness of wages for bargaining-unit workers.¹⁵⁹

155. 440 U.S. 301, 319 (1979).

156. *Id.* at 315.

157. *Id.* at 318.

158. *Minn. Mining & Mfg. Co.*, 261 N.L.R.B. 27, 32 (1982); *Borden Chem. Div.*, 261 N.L.R.B. 64 (1982), *enforced*, 711 F.2d 348 (D.C. Cir. 1983).

159. Where the NLRB ruled an employer had to furnish the union with wage information of non-union workers, the Sixth Circuit overruled the Board and found that the employer had confidentiality interests in wage data and "it became incumbent upon the Union to demonstrate that its need for the materials outweighed the hospital's interest in maintaining the confidentiality of the records." 6 F.3d 1139, 1144 (6th Cir. 1993). Similarly, when the Board held that an employer violated the Act by refusing to furnish the union with copies of its collective bargaining agreements covering other plants, the Eighth Circuit reversed the Board and held that employer's refusal to provide what was described as burdensome information was not a per se refusal to bargain. *NLRB v. Wachter Constr., Inc.*, 23 F.3d 1378 (8th Cir. 1994), *denying enforcement of* 311 N.L.R.B. 215 (1993). *See also* *I. Appel Corp.*, 308 N.L.R.B. 425, 440 (1992) ("When a union seeks information concerning the bargaining unit itself, the

Most relevant to this discussion, in the 1999 *GTE Southwest*¹⁶⁰ decision, the Board found that interview-testing information may involve important business interests and the union had to bargain over even getting access to the information about a “structured interview” that decided whether employees could become a “customer care advocate.” The company refused to provide information regarding “the grading criteria, copies of valuations by panel members, or allow a viewing of the test/testing material,” arguing this would compromise the validity of the tests.¹⁶¹ The administrative judge in the case had found that the union had handled confidential information in the past without violating employer interests and directed the union in this case not to disclose information to anyone not involved in the grievance.¹⁶² While the full Board agreed that the union had interests in access to the information, it still held that business interests trumped those interests and put the onus on the union to bargain for access to the information with the employer.¹⁶³

The Obama NLRB seemed willing to reverse or at least distinguish new cases in ways more favorable to disclosure to the union side. In a case involving a union’s request for data on applicant scores on a combined aptitude and personality test administered by the Post Office for new positions in its San Juan, Puerto Rico, facility,¹⁶⁴ the NLRB ordered that scores be released to the union without identifying which employees received which grades, in order to enable the National Postal Mailhandlers’ Union Local 313 to investigate whether the test takers might have been hired improperly ahead of veteran employees.¹⁶⁵

information is presumptively relevant and will be ordered disclosed without any showing of relevance by the union unless the employer rebuts the presumption [of relevance].); *E.I. Du Pont de Nemours & Co. v. NLRB*, 744 F.2d 536 (6th Cir. 1984). In this context, information is relevant if there is a “probability that the desired information [is] relevant . . . and that it would be of use to the union in carrying out its statutory duties and responsibilities.” *DuPont*, 744 F.2d at 538 (quoting *NLRB v. ACME Indus. Co.*, 385 U.S. 432, 437 (1967)); *General Motors Corp. v. NLRB*, 700 F.2d 1083, 1088 (6th Cir. 1983). Where, as here, the union seeks to obtain information that does not relate to the bargaining unit for which it is exclusive representative, the presumption of relevance is lost. *DuPont*, 744 F.2d at 538. Instead, “the burden is upon the union, and in this case upon the General Counsel, to establish relevance without the benefit of any presumption.” *Id.* (citing *NLRB v. Rockwell-Standard Corp.*, 410 F.2d 953, 957 (6th Cir. 1969)).

160. *GTE Southwest Inc. & Comm. Workers of America*, 329 N.L.R.B. 563, 565 (1999).

161. *Id.* at 566.

162. *Id.* at 567.

163. *Id.* at 564.

164. *U.S. Postal Serv. and National Postal Mailhandlers’ Union, Local 313, NPMHU, No. 24–CA–010805*, 2013 NLRB LEXIS 313, at *4 (N.L.R.B. May 2, 2013) (“The test measures each applicant’s cognitive skills as well as certain personal characteristics—conscientiousness, interpersonal skills, professional service orientation, self-management, and ability to deal with work pressures. Passing scores range from 70 to 100 points.”).

165. *Id.* at *18–19.

Notably, the decision was on remand from a decision of the First Circuit¹⁶⁶ which, in light of *Boston Edison*, ordered the NLRB to ensure that an initial decision in favor of the union fully took into consideration the confidentiality interests of the employer and test takers.¹⁶⁷ The decision, while ostensibly following *Boston Edison*, in many ways calls for a significant reevaluation of the case law established in its wake and for the Supreme Court potentially to overrule the original decision in favor of a standard mandating more disclosure by employers.¹⁶⁸

The follow-up NLRB decision involving USPS test scores directly addressed how a collective-action frame around informational parity in the workplace conflicts with a narrower, individual-privacy approach. While the Board assumed that the test result data would be dealt with confidentially, “the union’s need to see the scores in order to determine whether the USPS had broken its collective bargaining agreement with workers outweighed any damage that could be inflicted on the test takers through the publication of their scores.”¹⁶⁹ The Board specifically rejected the need for the union to gain the consent of the test takers as “unreasonable,” because the union needed complete information to evaluate the test taking system and individual workers might refuse “considering the unveiling of the numbers could cause them to lose seniority.”¹⁷⁰

This is in line with a number of other recent NLRB decisions where the need to enforce collective rights overrode attempts by the employer to assert that imagined individual-privacy rights of other employees should block worker assertion of rights under the NLRA. In one case, the Obama Board reversed precedent and ordered an employer to share witness statements obtained during an employer investigation of workplace misconduct during pre-arbitration discovery.¹⁷¹ In another recent case, the Board rejected an employer assertion of employee

166. NLRB v. U.S. Postal Serv., 660 F.3d 65 (1st Cir. 2011).

167. *Id.* at 71 (“An employer may legitimately refuse to furnish relevant information, such as psychological test results, if it has a well-founded concern for employee privacy that outweighs a union’s need for the information.”) (citing *Detroit Edison Co. v. NLRB*, 440 U.S. 301, 314–15, 317–20 (1978)); NLRB v. U.S. Postal Serv., 888 F.2d 1568, 1572 nn.3–4 (11th Cir.1989) (noting that certain types of employee information “need not be disclosed, even though relevant” to a union, such as “psychological test results”) (citing *Detroit Edison*, 440 U.S. at 318).

168. *U.S. Postal Serv.*, 2013 NLRB LEXIS 313.

169. Dan Prochilo, USPS Must Give Employee Test Scores to Union, NLRB Finds, Law360 (May 6, 2013), <https://www.law360.com/articles/438542/usps-must-give-employee-test-scores-to-union-nlr-b-finds>.

170. *Id.* The Board did try to distinguish this situation from *Detroit Edison* in arguing that publicity of top test results would not negatively affect anyone’s view of the applicants’ abilities. *U.S. Postal Serv.*, 2013 NLRB LEXIS 313, at *9. In *Detroit Edison*, the Court emphasized the need for consent for any test information to be shared with the union. *Detroit Edison*, 440 U.S. at 317–19.

171. *American Baptist Homes of the West*, No. 32-CA-063475, 2012 NLRB LEXIS 846 (N.L.R.B. Dec. 15, 2012), *overruling* *Anheuser-Busch, Inc.*, 237 N.L.R.B. 982 (1978).

privacy to justify prohibiting use of recording equipment at work, a rule which was being used to block union activists from documenting violations of their rights.¹⁷²

The Obama Board seemed to be building a case for the perversity of courts and prior Boards, citing a privacy interest in employers withholding information about individual employees from a union representative, where the employer controls that information only because they extracted it from a worker on the threat of not being hired, or fired, or not being promoted if they did not disclose that information. While the Obama Board argued for union representatives to share responsibility for not distributing such information more broadly, it also highlighted the need for union access to information, even without the consent of individual employees affected, in order to protect collective rights in the workplace and ensure that unions have accurate aggregated data on workplaces for bargaining or other purposes.

Union requests that probe deeper into the algorithms driving exclusion of new hires to find out if they are designed to illegally screen out pro-union leaders likely face the additional complication of needing access to third party company data from employment screening companies like Kronos. Such firms claim such data is proprietary and Kronos, for example, has opposed the EEOC's efforts in a civil lawsuit to require the company to disclose internal validity studies and other information about the assessments.¹⁷³ Given the role of such testing in hiring and firing decisions, the goal would be to treat the testing companies as "joint employers"¹⁷⁴ and require disclosure of such information to the union. This would be consistent with the approach the EEOC has taken with third-party staffing firms that administer pre-employment tests before placing workers at a main employer.¹⁷⁵

Employees face a particular challenge when seeking to use these potential rights to information about pre-hire exclusions of pro-union

172. T-Mobile USA, Inc., Nos. 02-CA-115949, 2016 NLRB LEXIS 313, at *16-17 (N.L.R.B. Apr. 29, 2016) (rejecting rule as not narrowly tailored to avoid unlawful harassment) (citing Whole Foods Market, Inc., Nos. 01-CA-096965, 2015 NLRB LEXIS 949 (N.L.R.B. Dec. 24, 2015) (“[F]inding employer’s interests in preserving employee privacy, protecting confidential information, and encouraging open communication insufficient to justify broad and unqualified prohibition on recording.”)).

173. Weber & Elizabeth, *supra* note 44.

174. See Part V.E below for the board’s broadened doctrine on joint employer.

175. Phyllis Karasov, *Why Employers Should Be Concerned about the NLRB General Counsel’s McDonald’s Decision*, LARKIN HOFFMAN (Sept. 4, 2014), <http://www.larkinhoffman.com/media/why-employers-should-be-concerned-about-the-nlr-general-counsels-mcdonalds-decision> (EEOC guidelines treat such staffing agencies as joint employers and can hold the staffing firm liable if they use “the results of a [pre-employment] test that it administers directly or on a client’s behalf to exclude an individual with a disability, where the use of such results is not job-related and consistent with business necessity.”).

workers: in that they need to vote for a union (or have it recognized by an employer) before they can invoke them as part of a collective bargaining process—a potential catch-22 situation. One solution, however, might be to win recognition in a subgroup of employees within a much larger firm. This is an easier task, and, again, something the Obama Board was more willing to allow.¹⁷⁶ Employees could then use that initial bargaining unit to demand information about pre-hire or current promotion and retention tests to determine if employers are using algorithms to illegally screen pro-union employees.

The other option might be to challenge an election result as tainted by potential illegal exclusions resulting from such tests, and ask for the Board to conduct its own investigations into the algorithms used in screening employees at the firm. With the threat of back-pay orders for potentially millions of excluded employees (given the volume of applications at larger employers and testing companies), a tough NLRB investigation might induce cooperation from some players in exchange for reducing potential liability. All of this is likely to be strategies for a future Board since it is obviously unclear how many of the Obama precedents will be honored by the Trump Board or upheld by the current Supreme Court.

D. Reducing and Regulating Workplace Surveillance

A revived labor law in the future could also significantly restrict workplace surveillance, including more indirect forms using employees' personal data that have become increasingly popular.

One reality of the long-term weakness in labor law enforcement is how brazen union avoidance lawyers are in advocating for what clearly is illegal surveillance, even under current NLRB case law. For example, after the NLRB passed new rules speeding up elections and reforming the union certification process,¹⁷⁷ management lawyers were out in force publicly urging increased surveillance of workplaces to forestall unionization. Joel Barras at Reed Smith urged employers through an article on *Forbes.com* to “monitor employee morale and search for the early signs of a union organizing attempt.”¹⁷⁸ Timothy Davis at Constangy, Brooks, Smith & Prophete told employers they need to

176. *Macy's Inc.*, No. 01-RC-091163, 2014 NLRB LEXIS 559, at *3 (N.L.R.B. July 22, 2014) (following the precedent of *Specialty Healthcare & Rehabilitation Ctr. of Mobile*, 357 N.L.R.B. 934 (2011), *enfd. sub nom.* *Kindred Nursing Centers East, LLC v. NLRB*, 727 F.3d 552 (6th Cir. 2013)).

177. *Representation Case Rules Effective April 14, 2015*, NLRB, <https://www.nlr.gov/what-we-do/conduct-elections/representation-case-rules-effective-april-14-2015> (last visited Nov. 23, 2016).

178. Joel S. Barras & John A. DiNome, *New Year, New Rules, New Union-Avoidance Strategies*, *FORBES* (Jan. 12, 2015), <http://www.forbes.com/sites/theemploymentbeat/2015/01/12/new-year-new-rules-new-union-avoidance-strategies/#62e9aa843bf5>.

figure out whether “workers trust the employer more than the union,” and to “conduct employee and management surveys” as part of a general system of preempting union support before an election is called.¹⁷⁹

That management lawyers and consultants make these statements publicly is remarkable given a long string of case law making any polling of employees about their support for unionization illegal. Such activity is seen as chilling employees’ exercise of their section 8(a)(1) rights, “because[, as the 9th Circuit said,] of its natural tendency to instill in the minds of employees fear of discrimination on the basis of the information the employer has obtained.”¹⁸⁰ Or, as the Board said in another case, polling is largely prohibited because employers “cannot discriminate against union adherents without first determining who they are.”¹⁸¹

Early on, the Board viewed all interrogation by an employer as unlawful per se, but in the face of judicial pushback, it created the 1954 Blue Flash rule,¹⁸² which it further clarified in *Struknes Construction Co.*¹⁸³ The rule states that internal polling is illegal unless solely used to determine if a union claim of a majority¹⁸⁴ was valid, conducted by secret ballot, and no pattern of coercive or illegal activity was involved. Notably, the criteria in the anti-polling rule apply in any workplace where no union election is scheduled: i.e., almost all of the time. If, however, there is an election scheduled, polling is completely banned because the Board argues it would not “serve any legitimate interest of the employer.”¹⁸⁵ The rules for conducting such polling and the *Struknes* standard have been sustained by the Supreme Court, with Justice Scalia, no less, noting the Board had reasonably found “that employer polling is . . . ‘unsettling’ to employees, and so has chosen to limit severely the circumstances under which it may be conducted.”¹⁸⁶

179. Allen Smith, *Union Avoidance: Timelines Shrink and Trust Matters*, SOC. FOR HUM. RESOURCE MGMT. (June 29, 2015), <https://www.shrm.org/hr-today/news/hr-news/Pages/Union-Avoidance-Timelines-Shrink-and-Trust-Matters.aspx#sthash.RvkzM0h9.dpuf>.

180. *NLRB v. West Coast Casket Co., Inc.*, 205 F.2d 902, 904 (9th Cir. 1953)

181. *Cannon Elec. Co.*, 151 N.L.R.B. 1465, 1468–69 (1965) (note that questions to ascertain union sympathies of employees is not treated by the Board or the courts as falling under an employer right to free speech under section 8(c) since the “purpose of interrogation is not to express views but to ascertain those of the person interrogated.”); *Struksnes Constr. Co., Inc.*, 165 N.L.R.B. 1062, 1062 n.8 (1967); *NLRB v. Lorben Corp.*, 345 F.2d 346 (2d Cir. 1965).

182. *Blue Flash Express, Inc.*, 109 N.L.R.B. 591, 594 (1954).

183. *Struksnes Construction Co. Inc.*, 165 N.L.R.B. 1062, 1063 (1967); see also *William Walters Inc.*, 179 N.L.R.B. 709 (1969), enforced, 1971 U.S. App. LEXIS 11618 (7th Cir. 1971); *Tom Wood Pontiac, Inc.*, 179 N.L.R.B. 581 (1969), enforced, 447 F.2d 383 (7th Cir. 1971).

184. The rule existed especially for situations where employers had a good faith belief that a union no longer represented the majority of workers and could no longer qualify as the exclusive bargaining agent for the workplace.

185. *Struksnes*, 165 N.L.R.B., at 1063; see also *Fontana Bros.*, 169 N.L.R.B. 368 (1968).

186. *Allentown Mack Sales & Serv., Inc. v. NLRB*, 522 U.S. 359, 364–65 (1998).

The Board and the courts have made clear that polls that even indirectly elicit information on union sympathies are illegal, such as asking whether temporary employees should be able to vote in an upcoming representation election¹⁸⁷ or whether an employee intended to strike,¹⁸⁸ because answers on the question correlated with union sympathies. Notably, such polling, even with indirect questions, does not only threaten individual retaliation. It also, even with results anonymized by department, still illegally helps the company in its anti-union campaign: “[b]y departmentalizing the voting, the Company could best gauge areas of Company strength and identify enclaves of Union support.”¹⁸⁹

Yet even as management consultants tell clients that they cannot directly ask employees about their union sympathies, they counsel use of data analysis on alternative employee surveys to elicit the same information. As the top partners in one labor relations consulting firm wrote to potential clients:

Vulnerability [to unionization] is identified from an interpretation of employee perceptions or issues [in a survey], and by the selection and examination of certain questions that are believed to identify union sentiment or risk. These questions usually relate to topics such as pay, benefits, the quality of first-line supervisors, the integrity of senior management, fairness in application of policies and procedures, and the respondent’s willingness to recommend the employer to friends or family Once problem-resolution efforts are in place, repeat mini-surveys should be conducted to track progress in high-risk locations.¹⁹⁰

Such algorithmic correlations potentially violate every part of the *Struknes* rule, from identifying individuals’ union sympathies to assisting anti-union campaigns in isolating and containing “enclaves of Union support” with which companies can more easily deal.

At a minimum, the NLRB should build on its earlier case law to

187. *Midwest Regional Joint Board, etc. v. NLRB*, 564 F.2d 434, 438 (D.C. Cir. 1977); *see also Burns Int’l Sec. Servs.*, 225 N.L.R.B. 271, 274 (1976), *enforcement denied* 567 F.2d 945 (10th Cir. 1977).

188. *Contractor Servs., Inc.*, 324 N.L.R.B. 1254, 1255 (1997).

189. *Midwest Regional Joint Board, etc. v. NLRB*, 564 F.2d 434, 445 (D.C. Cir. 1977).

190. Frank Merrick and Thomas Grimes, founding partners of The Mickus Group, outlined the use of such “vulnerability assessments” in *Assessing Your Risk of Unionization*, MICKUS GROUP (Oct. 15, 2009), <http://www.mickusgroup.com/files/Assessing%20Your%20Risk%20of%20Unionization%20-%20Workforce%20Management%20Magazine%20On-Line%20-%20FM%20&%20TG%20Fall%202009.pdf>.

declare such “vulnerability surveys” as clear section 8(1)(a) violations. Management consultants claim, however, that they can identify union sympathies based on a wide range of questions and information, so it can reasonably be argued that employers should be barred from tracking any personal information about their employees, whether through in-house surveys or through third party data that they might be able to acquire, because any such tracking is likely to amount to the equivalent of illegal polling under the *Struknes* standard.

That the Board is moving in this direction is a repeated fear expressed by the management bar—see the earlier comment cited about the “erosion of the rights of employers to *police the virtual world*.”¹⁹¹ Or as another management consultant Mark Carter worried in the wake of *Purple Communications*:

[T]he NLRB’s decision will deter employers from monitoring employee email traffic. Employers legitimately review employee email to insure that the workplace is free from discrimination and to make sure employees are being productive. The decision leaves no doubt that employer monitoring of email that is “out of the ordinary” can itself be illegal surveillance of protected communications. It will not be long before the Agency begins to scrutinize electronic privacy policies in the same fashion as it did social media policies after the first social media complaints were issued.¹⁹²

Carter was reacting to the Board’s decision in *Purple Communications*, which specifically noted that employers retained full authority to monitor email for harassment or for unproductive use of work time, but stated such monitoring will be “lawful so long as the employer does nothing out of the ordinary, such as *increasing its monitoring during an organizational campaign* or focusing its monitoring efforts on protected conduct or union activists.”¹⁹³ Essentially, any kind of additional monitoring advocated by management consultants during an organizing campaign could be a violation of the law.

A reasonable extension of this approach would be to prohibit sharing any personal data that might reveal protected conduct or union sympathies collected by management with outside management

191. Bernstein, *supra* note 147.

192. *Id.*

193. *Purple Comm., Inc.*, Nos. 21-CA-095151, 2014 NLRB LEXIS 952, at *67 n.74 (citing *Eddyleon Chocolate Co.*, 301 N.L.R.B. 887, 888 (1991) (quoting *Metal Industries, Inc.*, 251 N.L.R.B. 1523 (1980))) (emphasis added).

consultants.¹⁹⁴ The Board could require companies wanting to avoid liability for illegal discipline based on misuse of surveillance also to maintain a strict legal separation between the narrow set of managers monitoring email and collecting any data about employees versus management involved in more general oversight and discipline of the workforce who would be barred from viewing any personal information beyond the employee's actual work performance.

While employers may argue for the benefits of more extensive information gathering of employee views to promote a harmonious workplace, it is reasonable to argue that, in light of the danger of *Struknes* violations, any surveillance beyond the minimal needed to prevent harassment and deter slacking should require collective bargaining to ensure that such leeway is not abused. Unions in collective bargaining should have a section 8(a)(d) informational right to know what data is being collected about current employees, how algorithms are structured, what keywords are being used, and the rules for discipline based on the results—and have a chance to bargain over those rules. Management following procedures developed under a collective bargaining agreement would thereby largely protect workplace surveillance from Board sanction. Like job safety and other general work conditions, “privacy” is far more a “public good” more likely to be properly valued in a collective bargaining “voice” situation, individual workers largely ignore such issues when individually bargaining for compensation in non-union workplaces where “entry” and “exit” or the only options.

The payoff from preventing employers from screening the “troublemakers” who might push for collective action and protecting the ability of workers to communicate in the workplace without employer sanction is a chance for collective action to raise wages and improve work conditions. The impact of helping to reverse the decline in unionization will likely have a significant impact on economic inequality in the economy, given that union members make higher wages than nonunion workers in comparable jobs, are 28.2% more likely to be covered by employer-provided health insurance, and are

194. Such a rule could be explicitly added to any future revival of the “Persuader Reporter” rules issued by the Obama Department of Labor that required better tracking of activities by outside consultants involved in labor relations. Office of Labor-Management Standards (OLMS), *Form LM-10 Employer and Form LM-20 Consultant Persuader Reporting under the LMRDA*, U.S. DEP’T OF LAB. (Nov. 17, 2016), <https://www.dol.gov/olms/regs/compliance/ecr.htm>; Preliminary Injunction Order, *Nat’l Fed’n. of Indep. Bus. v. Perez*, No. 16-cv-00066-C (N.D. Tex. June 27, 2016), ECF No. 85 (U.S. District Court for the Northern District of Texas issuing a nationwide preliminary injunction against the persuader rule on June 27, 2016). For more discussion of the rules, see John A. Logan, *Labor Dept.’s New Reporting Rule for Anti-Union Consultants is Long Overdue*, HILL (Mar. 24, 2016), <http://thehill.com/blogs/pundits-blog/labor/274189-labor-depts-new-reporting-rule-for-anti-union-consultants-is-long>.

53.9% more likely to have employer-provided pensions.¹⁹⁵

The Board can assist in this cause by applying a loosened standard for union access to employer algorithms and strategies used in setting bonuses and other compensation in the workplace, as was discussed in regard to hiring algorithms above. As highlighted by Freeman and Medoff, this would push contracts towards the interests of the median employee and likely increase benefits such as health care and pensions,¹⁹⁶ while reducing bonus payments. The economic logic that management consultants such as McKinsey and Deloitte outlined of denying bonuses to productive, long-term employees if they are unlikely to leave the firm¹⁹⁷ highlights why median workers so disfavor bonuses in union contracts.¹⁹⁸

More broadly, by increasing information parity between employees collectively and their employers, the result will likely lead to greater economic equity and a mix of wages, benefits, work conditions and other “public goods” in the workplace, including privacy protections. This would better reflect the overall interests of employees than in either a classic economic model based on a marginal worker’s “exit” or a “rights-consciousness” litigation approach to rein in individual employment harms.

E. Overcoming the Fractured Workplace

Increased information sharing can only help workers’ ability to bargain collectively both for the diversity of needs in the workplace and for the interests of the median worker to a certain extent. This ability will remain severely limited if workers cannot overcome the fractured nature of the modern workplace where they are divided across multiple firms and are supposedly independent contractors. While collective bargaining in the United States traditionally has been overwhelmingly

195. Lawrence Mishel, *Unions, Inequality, and Faltering Middle-Class Wages*, ECON. POL’Y INST. 3 (Aug. 29, 2012), <http://www.epi.org/publication/ib342-unions-inequality-faltering-middle-class/> (“[E]stimates of the union wage premium computed to reflect differences in hourly wages between union and nonunion workers who are otherwise comparable in experience, education, region, industry, occupation, and marital status.”).

196. See FREEMAN & MEDOFF, *supra* note 17, at 27.

197. Cosack et al., *supra* note 85; Bersin, *supra* note 68.

198. For examples of union opposition, see John Rosales, *Pay Based on Test Scores?*, NAT’L EDUC. ASS’N., <http://www.nea.org/home/36780.htm> (last visited Feb. 25, 2017) (“[Variable pay] plans can pit employee against employee, especially when there’s a quota for merit increases.”); see also Thomas Lemieux et al., *Performance Pay And Wage Inequality* 15 (Nat’l Bureau of Econ. Res., Working Paper No. 13128, May 2007), <http://www.nber.org/papers/w13128.pdf> (making economic analysis of how performance pay increases wage inequality in firms and how “unionization rate . . . is much lower among performance-pay workers”).

structured around single firm and even single plant agreements,¹⁹⁹ the current NLRB has increasingly argued that the firm is not always the appropriate unit to reflect workers' joint interests in collective bargaining.

Part of this change is a purely ideological rejection of conservative precedents established by earlier Board majorities. Another part is an explicit response to changes in the modern workplace, due to both the expansion of subcontracting relationships and the use of technology and data analytics by firms that increases their control of work by employees who are nominal subcontractors or hired through independent contracting relationships. In its high-profile decision in 2015, *Browning-Ferris Industries*,²⁰⁰ which expanded the basis for finding a "joint-employer" relationship of a firm with workers formally employed by a subcontractor where those workers may directly bargain with the main employer, the Board noted statistics showing a rise in use of contingent workers, especially those employed in temporary agencies.²⁰¹ This growth was, in the words of the Board, "reason enough to revisit the Board's current joint-employer standard," because the Board's responsibility is "to adapt the Act to the changing patterns of industrial life."²⁰²

The NLRB ruled that where the main company "dictates the essential nature of the job, and imposes the broad, operational contours of the work," there is a dual layer of control over employees even where a subcontractor may make specific personnel decisions or oversee job

199. Harry C. Katz, *The Decentralization of Collective Bargaining: A Literature Review and Comparative Analysis*, 47 INDUS. & LAB. REL. REV. 3 (1993) (comparing the traditionally centralized bargaining modes of Sweden and Australia across multiple firms, with the moderately centralized examples of Germany and Italy and the decentralized approaches in the United Kingdom and United States). A more recent study by the European Central Bank noted that where the rest of Europe engaged in a range of sectoral, regional and national union agreements, in the Czech Republic, Estonia, Hungary, Poland, Lithuania, Luxembourg, the UK, and the US, "the company level is [the] dominant [level of wage bargaining] and wage bargaining systems are highly decentralized." *Institutional Features of Wage Bargaining in 23 European Countries, the US and Japan* 16 (European Central Bank, Working Paper Series No. 974, Dec. 2008), <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp974.pdf>.

200. No. 32-RC-109684, 2015 NLRB LEXIS 672 (N.L.R.B. Aug. 27, 2015).

201. The Board cited to the Bureau of Labor Statistics survey of 2005 which "indicated that contingent workers accounted for as much as 4.1 percent of all employment, or 5.7 million workers." *Browning-Ferris*, 2015 NLRB LEXIS 672, at *50 (citing Bureau of Lab. Stat., *Contingent and Alternative Employment Arrangements, February 2005*, U.S. DEPT. OF LAB. (July 27, 2005), <https://www.bls.gov/news.release/conemp.nr0.htm>). The Board noted that, "[a]s of August 2014, the number of workers employed through temporary agencies had climbed to a new high of 2.87 million, a 2 percent share of the nation's work force." *Browning-Ferris*, 2015 NLRB LEXIS 672, at *50 (citing Steven Greenhouse, *The Changing Face of Temporary Employment*, N.Y. TIMES (Aug. 31, 2014), <http://www.nytimes.com/2014/09/01/upshot/the-changing-face-of-temporary-employment.html>).

202. *Browning-Ferris*, 2015 NLRB LEXIS 672, at *52 (citing *NLRB v. J. Weingarten, Inc.*, 420 U.S. 251, 266 (1975)).

performance on a day-to-day basis.²⁰³ In the decision, the Board argued it was returning to an earlier standard endorsed by the Supreme Court in 1964,²⁰⁴ thereby rejecting subsequent Board and lower court decisions that had wrongly narrowed the standard for finding joint-employer status.²⁰⁵ Instead, the Board argued that joint-employer status would exist as long as the “putative joint employer possesses sufficient control over employees’ essential terms and conditions of employment to permit meaningful collective bargaining,” including situations where a main company, as in this case, chooses not to exercise decision-making on a day-to-day basis but holds “reserved authority” contractually with rights to control if they wish or the ability to exercise control indirectly.²⁰⁶

Browning Ferris involved a more traditional industrial company where an on-site subcontractor was acting largely as a temp agency supplying and managing workers, but many observers see it as the prelude to an upcoming decision on whether McDonalds is a dual employer for employees at its franchises.²⁰⁷ The key issue there is whether the data technology underlying McDonalds’ coordination of its far flung economic network of suppliers and franchisees constitutes

203. *Id.* at *67.

204. *See* The Greyhound Corp., 153 N.L.R.B. 1488, 1495 (1965), *enforced*, 368 F.2d 778 (5th Cir. 1966). Critically, the Supreme Court as part of the overall proceedings declared that “whether Greyhound ‘possessed sufficient control over the work of the employees to qualify as a joint employer with’ the cleaning contractor—was ‘essentially a factual issue’ for the Board to determine.” *Boire v. Greyhound Corp.*, 376 U.S. 473, 481 (1964). The Supreme Court reversed a district court injunction against the Board proceeding, rejecting Greyhound’s argument that the Board was acting in excess of its powers under the Act, given the exclusion of independent contractors from the statutory definition of “employee.” *Browning-Ferris*, 2015 NLRB LEXIS 672. The Board also cited to *Franklin Simon & Co., Inc.*, 94 N.L.R.B. 576, 579 (1951) (finding joint-employer status where “a substantial right of control over matters fundamental to the employment relationship [was] retained and exercised” by both department store and company operating shoe department).

205. The *Browning-Ferris* Board majority traced the change to a Third Circuit 1982 decision involving *Browning Ferris*, *NLRB v. Browning-Ferris Industries, Inc.*, 691 F.2d 1117, 1124 (3d Cir. 1982), where the Third Circuit seemed to narrow the joint-employer standard, although the real damage according to the *Browning-Ferris* decision was when the 1984 Board interpreted that standard and radically narrowed joint-employer status in two cases, *Laerco Transp.*, 269 N.L.R.B. 324 (1984), and *TLI, Inc.*, 271 N.L.R.B. 798 (1984), *enforced mem.*, 772 F.2d 894 (3d Cir. 1985). In those older decisions, the Board had limited joint-employer status if any supervision of subcontractor employees was “limited and routine.” A later decision, *AM Property Holding Corp.*, 350 N.L.R.B. 998, 1001 (2007), *enforced in relevant part sub nom.*, 647 F.3d 435 (2d Cir. 2011), would further specify that joint-employer status required control to be direct and immediate.

206. *Browning-Ferris*, 2015 NLRB LEXIS 672, at *6–7.

207. Ben Gitis, *The NLRB’s New Joint Employer Standard, Unions, and the Franchise Business Model*, *American Action Forum*, AMERICAN ACTION FORUM (Apr. 26, 2017), <https://www.americanactionforum.org/research/nlrbs-new-joint-employer-standard-unions-franchise-business-model/#ixzz4pE4Ls6tx>; Sophie Quinton, *Big Chains Don’t Want To Be Considered Employers of Franchise Workers*, *STATELINE* (Mar. 15, 2017), <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2017/03/15/big-chains-dont-want-to-be-considered-employers-of-franchise-workers>.

control sufficient to make it a joint employer.²⁰⁸ The explosion of franchising as one of the critical drivers in allowing central firms to escape liability for labor law violations adds to the focus on the case.²⁰⁹ As discussed earlier, the pre-employment testing system run by McDonalds and used by 90% of its franchisees is a key part of the debate on whether McDonalds is a joint employer,²¹⁰ but the analysis extends to a wide range of ways companies use technology and data to manage franchisees. When discussing the McDonalds case in one speech, Obama's NLRB General Counsel Richard Griffin made clear that it is precisely the data technology used by central firms to monitor franchisees and their employees that will determine the Board's final decision:

Now there are all kinds of ways that franchisors, in real time, can keep track of everything happening at the franchisee level. So for example, there are programs where a national franchisor . . . has on its mainframe computer real time information about every franchisee's gross sales, and at the same time they have real time information about the minute-by-minute labor costs going on [at a] particular franchisee. And they have programs that run algorithms that say once these costs get to a certain percentage of these [other] costs, you gotta start sending people home. That type of involvement in the hours and terms and conditions of employment . . . goes beyond protecting [the franchisor's brand], and in those instances where those things are present, we think the franchisor ought to be named and held responsible as a joint employer.²¹¹

Essentially, the argument suggested that, where technology replaces middle management in employment decisions, the controller of the underlying technology should be treated as a joint employer because collective bargaining over use of that technology is of obvious shared interest by all workers it impacts.

The same principle could be in play as Uber drivers or other "gig-

208. Office of Public Affairs, *NLRB Office of the General Counsel Issues Consolidated Complaints Against McDonald's Franchisees and their Franchisor McDonald's, USA, LLC as Joint Employers*, NLRB (Dec. 19, 2014), <https://www.nlr.gov/news-outreach/news-story/nlr-office-general-counsel-issues-consolidated-complaints-against>.

209. Scheiber, *supra* note 94 ("In the 1960s . . . only a small fraction of United States motels were franchised . . . As of 1986, the franchised figure was 68 percent worldwide for the top hotel chains, like Hilton and Marriott. By 2006, it was 78 percent [W]ages have fallen since 2000, and labor law violations are rampant.")

210. Letter from Goldsmith to Kearney, *supra* note 38.

211. Doug Berry, *NLRB's General Counsel Provides a Glimpse of His Thinking on "Joint Employer"* *Standard*, ZORBLOG (Nov. 11, 2014), <http://www.zorbloglaw.com/2014/11/nlrbs-general-counsel-provides-a-glimpse-of-his-thinking-on-joint-employer-standard/>.

economy” contractors begin filing petitions with the NLRB to form unions.²¹² They will face a slightly different legal issue because federal labor law bars independent contractors from protection under the NLRA altogether.²¹³ The test for who counts as an independent contractor, however, does not consider a worker’s formal tax status but rather follows an agency law test with its own legal principles and tracks the joint-employer test.²¹⁴ One notable part of the *Browning Ferris* decision is the argument by the Board that the joint-employment doctrine and whether a person is an independent contractor should be examined under a more unitary legal analysis of agency law.²¹⁵ This indicates that any doctrine finding that use of data analytics as a management tool creates a joint-employment relationship is likely also to find that supposed-independent contractors governed by similar technology will be treated as employees under the NLRA as well. States have been making their own parallel investigations of Uber independent-contractor status under separate but related standards under state minimum wage and overtime law.²¹⁶

Another lawsuit has argued that if Uber’s technology is not a means of managing employees, then it is actually a tool for orchestrating price

212. In February 2016, the first group of Uber drivers, 600 drivers who make pickups at LaGuardia Airport in New York City, formally filed a petition with the NLRB for representation. See Conor Skelding, *Union Files to Represent Uber Drivers Serving LaGuardia*, POLITICO (Feb. 3, 2016), <http://www.politico.com/states/new-york/city-hall/story/2016/02/union-files-to-represent-uber-drivers-serving-laguardia-030906>.

213. The National Labor Relations Act defines “employee” to “include any employee . . . [but not] any individual having the status of an independent contractor.” 29 U.S.C. § 152(3) (2012). This language dates from amendments made in 1947 to the original law. For more on the changing legislative definition of employee, see Ellen Dannin, *Not a Limited, Confined, or Private Matter—Who is an “Employee” Under the National Labor Relations Act*, 59 LAB. L.J. 5 (2008).

214. Noah Zatz has noted the torturous history of using such agency law as a test for independent contractors. Zatz, *supra* note 111, at 281 (“It takes only a modest dose of legal realism to be skeptical that much more is at stake here than the verbal formulations with which arguments and decisions are crafted. This point runs in two directions. First, the agency law test for employee status itself is notoriously vague and indeterminate, not to mention being tied to ongoing development in the common law.”).

215. *Browning-Ferris Industries of California, Inc.*, No. 32-RC-109684, 2015 NLRB LEXIS 672, at *55 (N.L.R.B. Aug. 27, 2015) (“The Board’s joint-employer doctrine is best understood as always having incorporated the common-law concept of control . . . [T]he Board properly considers the existence, extent, and object of the putative joint employer’s control, in the context of examining the factors relevant to determining the existence of an employment relationship.”). The Board cites to the Supreme Court noting the similar challenge of determining whether an independent contractor relationship is valid. *NLRB v. United Ins. Co.*, 390 U.S. 254, 258 (1968) (noting the “innumerable situations which arise in the common law where it is difficult to say whether a particular individual is an employee or an independent contractor”).

216. Charlotte Garden, *What Would a Merrick Garland Confirmation Mean for the Future of Gig Work?*, ATLANTIC (May 11, 2016), <http://www.theatlantic.com/business/archive/2016/05/supreme-court-gig-work/482115/> (the highest profile lawsuits ended with settlements that paid out \$100 million to 385,000 drivers in California and Massachusetts but did not require Uber to treat them as employees in the future).

fixing across independent businesses. One example is the allegedly predatory “surge” pricing during times when there is no effective competition, and is therefore, as the lawsuit alleges, a means to illegally fix prices among competitors. This, in the words of the Supreme Court, would be the “supreme evil of antitrust.”²¹⁷ Due to the fact that setting a coordinated price across the platform is one of the key functions of the Uber app, it does seem that the company almost has to choose between having legal liability under labor law as an employer or being an illegal price-fixing conspiracy under antitrust laws.

Even if the NLRB found that Uber or other “gig-economy” workers lacked organizing rights under the NLRA, some local and state governments are moving to step in to provide collective bargaining rights under local law. The City of Seattle has already enacted an ordinance²¹⁸ allowing contract drivers to organize and bargain for agreements on pay and working conditions under its existing taxi regulations.²¹⁹ Legislators in California have introduced a more comprehensive “1099 Self-Organizing Act,” which would create a framework for a wide range of workers classified as independent contractors to negotiate collectively.²²⁰ There is some precedent for such statutes, particularly in multiple states giving independent doctors’ offices the right to negotiate collectively rates and conditions of work with Health Maintenance Organizations (HMOs).²²¹ There are strong

217. *Verizon Comm., Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 408 (2004); *accord Goldfarb v. Va. State Bar*, 421 U.S. 773, 782 (1975) (“[A] naked agreement was clearly shown, and the effect on prices is plain.”). The plaintiff also cited to the recent Second Circuit decision finding a price fixing conspiracy by Apple and book publishers to raise prices of e-books: “horizontal price-fixing conspiracies traditionally have been, and remain, the ‘archetypal example’ of a *per se* unlawful restraint on trade.” *United States v. Apple, Inc.*, 791 F.3d 290, 321 (2d Cir. 2015). Memorandum of Law In Opposition To Defendant Travis Kalanick’s Motion To Dismiss at 8, *Meyer v. Kalanick*, No. 15-cv-09796-JSR (S.D.N.Y. Feb. 2, 2016), ECF No. 33 (“Plaintiff, a user of Uber drivers’ services, brings federal and state antitrust claims against Defendant Travis Kalanick, Uber’s founder and CEO, for orchestrating this price-fixing scheme.”).

218. Seattle, Wash., Ordinance CB 118499, Ordinance Relating to Taxicab, Transportation Network Company, and For-Hire Vehicle Drivers (Sept. 2, 2015).

219. Daniel Beekman, *Seattle First U.S. City to Give Uber, Other Contract Drivers Power to Unionize*, SEATTLE TIMES (Dec. 14, 2015); <http://www.seattletimes.com/seattle-news/politics/unions-for-taxi-uber-drivers-seattle-council-votes-today/>.

220. Julia Carrie Wong, *California Bill Seeks to Bring Collective Bargaining to Gig Economy Workers*, GUARDIAN, (Mar. 11, 2016), <https://www.theguardian.com/us-news/2016/mar/11/california-bill-collective-bargaining-gig-economy-workers-uber-lyft>. The settlement of misclassification claims also led to agreements by Uber to allow non-union “associations” of drivers to be formed. Caroline O’Donovan, *Teamsters to Organize California Uber Drivers Association*, BUZZFEEDNEWS (Apr. 22, 2016), https://www.buzzfeed.com/carolineodonovan/teamsters-to-organize-uber-drivers-in-california?utm_term=.qxM0ZA7Py#.gp35z7lGL.

221. ALASKA STAT. §§ 23.50.010-23.50.099 (West 2004); N.J. STAT. ANN. §§ 52:17B-196 – 52:17B-209 (West 2004); 1 TEX. ADMIN. CODE §§ 58.1–58.6 (West 2000). New Jersey legislators proposed the “Health Care Provider Joint Negotiation Act,” S. 1098, 209th Leg. (N.J. 2000), ftp://www.njleg.state.nj.us/20002001/S1500/1098_11.HTM.

legal arguments that such laws would survive both preemption under federal labor law and under antitrust law based on the principle that “state action immunity” exempts business combinations regulated by state law from antitrust action.²²²

In the area of “on-demand” scheduling, state and local governments are proposing a number of measures²²³ requiring sufficient notice before shift changes and other rights to limit employer flexibility to change schedules. Many of the proposals include provisions that impose mandatory rules on scheduling for firms, but allow them to negotiate more flexible rules if there is a collective bargaining agreement in place²²⁴ on the assumption that with more parity of power and information under a union, employee interests can be protected where more flexibility is allowed—one approach where state and local governments have some significant power to encourage collective bargaining.²²⁵

In a number of other cases, the NLRB has further added to workers’ ability to aggregate their voices—or not aggregate, as they choose—in ways they feel best reflect their collective interests. Under the joint-employer doctrine, the Board declared illegal a move to replace a subcontractor after its employees unionized with non-union in-house staff,²²⁶ thereby putting unionized workers in subcontractors on a more equal footing with core staff employees. A recent case allows temporary workers and regular staff workers to jointly organize a bargaining unit without permission to do so from the employer²²⁷ as case law had previously required.²²⁸ The Board has also been increasingly

222. See Elizabeth Kennedy, *Freedom from Independence: Collective Bargaining Rights for Dependent Contractors*, 26 BERKELEY J. OF EMP. & LAB. L. 143 (2005) for a thorough analysis of the legal issues involved.

223. For examples, see A.B. 357, The Fair Scheduling Act of 2015, 2015-16 Sess., Reg. Sess. (Ca. 2015); S. 1772, 114th Cong. § 1 (2015); and B21-0512, Hours and Scheduling Stability Act of 2015, Council of D.C. (D.C. 2015).

224. S. 1772, 114th Cong. § 1 (2015). A provision reads, “This Act shall not apply to any employee covered by a bona fide collective bargaining agreement if the terms of the collective bargaining agreement include terms that govern work scheduling practices.”

225. Such mandatory state rules combined with opt outs where a collective bargaining agreement are in place were endorsed by the Supreme Court in *Fort Halifax Packing Co. v. Coyne*, 482 U.S. 1, 22 (1987) (“Maine has sought to balance the desirability of a particular substantive labor standard against the right of self-determination regarding the terms and conditions of employment. If a statute that permits *no* collective bargaining on a subject escapes NLRA preemption. . . surely one that permits such bargaining cannot be preempted.”).

226. CNN America, Inc. & Team Video Services, LLC, Nos. 05-CA-031828, 2014 NLRB LEXIS 710, at *1–2 (N.L.R.B. Sep. 15, 2014) (finding CNN has an illegal anti-union animus in terminating a contract with a subcontractor and deliberately excluding those employees from opportunities to be hired in house out of that animus).

227. Miller & Anderson, Inc., No. 05-RC-079249, 2016 NLRB LEXIS 498 (N.L.R.B. July 11, 2016).

228. *Oakwood Care Center*, 343 N.L.R.B. 659 (2004) had itself overturned a 2000 decision, *M.B.*

flexible in allowing smaller groups of workers within firms to organize bargaining units, including a 2014 Board decision certifying a bargaining unit of only cosmetics and fragrance counter workers at a single Macy's store.²²⁹ The upshot is that, instead of companies largely being able to choose which workers are allowed to collectively bargain together based on the corporate structure chosen by a firm, the NLRB is increasingly allowing workers to decide how to group themselves within and across firm boundaries.

The significance of this series of decisions has not gone unnoticed. Labor leaders have hailed them, while the employer-funded Competitive Enterprise Institute in a report entitled *The NLRB Joint-Employer Cases: An Attack on American Business* wrote that they “decimate the ‘bright-line’ clarity of the past 30 years of law in this area” and threaten “the survival of America’s popular franchise system.”²³⁰ The report also notes that businesses have depended on separating employees into contractors and subcontractors because labor law prevented subcontractors from using “economic weapons” such as strikes, protests, and pickets against main employers, which *Browning-Ferris* could end.²³¹

The irony is that the Obama Board cited the data technology that facilitated the subcontracting and fracturing the workplace to justify its expanded joint-employer doctrine. This in turn could lead over time to far more sector-wide collective bargaining agreements than in the past, reflecting the technology-facilitated, increasingly sector-wide dominance by core firms.²³²

Sturgis, Inc., 331 N.L.R.B. 1298 (2000), which had allowed temporary and permanent staff to organize together in the same unit without employer permission.

229. Macy's Inc., No. 01-RC-091163, 2014 NLRB LEXIS 559 (N.L.R.B. July 22, 2014).

230. ALOYSIUS HOGAN, COMPETITIVE ENTER. INST., *THE NLRB JOINT EMPLOYER CASES: AN ATTACK ON AMERICAN BUSINESS* 1–2 (June 2015), <https://cei.org/sites/default/files/Aloysius%20Hogan%20-%20The%20NLRB%20Joint-Employer%20Cases%20-%206-4-15.pdf>.

231. *Id.* at 2, 15.

232. Xiaohui Gao et al., *Where Have All the IPOs Gone?*, 48 J. OF FIN. & QUALITATIVE ANALYSIS 1663 (2013) (researchers noting that IPOs have dropped from an average of 311 per year during 1980–2000 to only 102 per year during 2001–2009, and ascribe decline to changes in the “economies of scope” in the marketplace, including more “winner-take-all” markets); see also Noah Smith, *Tech Fuels the Winner-Take-All Economy*, BLOOMBERG (Mar. 17, 2016), <https://www.bloomberg.com/view/articles/2016-03-17/the-internet-powers-the-winner-take-all-economy>.

VI. WHY A “COLLECTIVE-ACTION” APPROACH BEATS AN INDIVIDUAL
“RIGHTS-CONSCIOUSNESS” LITIGATION APPROACH TO DEALING WITH
WORKPLACE SURVEILLANCE

One reasonable question to raise against the program laid out in this article is that the unionized sector is now only a minority of firms,²³³ and, even if the NLRB was willing to implement all the labor law changes suggested here and union membership grew, historically unions never covered more than a third of workers in the United States. In light of this question, the case for a focus on legislation protecting individual rights to privacy in the workplace is that these laws would apply to every worker, not just those protected by a union.

Ifeoma Ajunwa, Kate Crawford, and Jason Schultz note the decline of unions as one reason for their legislative proposals to protect workers from surveillance in their article *Limitless Worker Surveillance*.²³⁴ They specifically cite to an older U.S. Office of Technology Assessment (OTA) publication, *The Electronic Supervisor: New Technologies, New Tensions*, which “noted that because of declines in unionization, employees had little power to object to what they considered ‘unfair or abusive monitoring.’”²³⁵

As this section will argue, focusing on strengthening collective action around workplace surveillance is ultimately the more effective avenue for many reasons, even for employees in non-union firms. First, a growing number of unionized firms with strengthened ability to challenge surveillance will set standards that will spill over to non-union sectors. Second, enacting new legislation strong enough to challenge employer power is a far greater political challenge than strengthening existing federal labor law. Third, even if individual worker-privacy legislation was enacted, lack of enforcement will likely make its protections empty for most employees. Fourth, as documented in this article, the social nature of much information means that individual rights will not empower workers to challenge many of the problems stemming from workplace surveillance. Finally, individual litigation cannot deal with the often-conflicting interests of different groups in the workplace as effectively as negotiations and democratic debate over collective bargaining agreements.

233. Bureau of Lab. Stat., *Union Members—2016*, U.S. DEPT. OF LAB. (Jan. 28, 2016), <http://www.bls.gov/news.release/pdf/union2.pdf> (just 11.1% of workers were in unions in 2016).

234. Ifeoma Ajunwa et al., *Limitless Work Surveillance*, 105 CAL. L. REV. 735 (2017).

235. *Id.* at 6 (citing U.S. CONG., OFFICE OF TECH. ASSESSMENT, OTA-CIT-333, *THE ELECTRONIC SUPERVISOR: NEW TECHNOLOGY, NEW TENSIONS* (Sept. 1987), <https://www.princeton.edu/~ota/disk2/1987/8708/8708.PDF>).

A. Threat of Union Success Sets Standards in Non-Union Firms

Many—if not most—workplace benefits are common in the economy because non-union employers created them to keep unions out of their workplace. This so-called “threat” effect of unions fundamentally shaped the American workplace throughout the last century.²³⁶ Even in the 1920s and early 1930s, when unionization rates were lower than they are today,²³⁷ the mere rising threat of industrial unions led General Motors to introduce a health insurance plan in 1926. Following suit, other companies in the industries most threatened by new unions—auto, paper, and rubber—disproportionately introduced health care coverage.²³⁸ “This strategy of using benefits to quell unionism was widely promoted in the contemporary literature on union avoidance,” recounts scholar Frank Dobbin.²³⁹

This “threat effect” of unions has not been eliminated. As a report by the Economic Policy Institute details, contemporary union workers gain a wage and benefits premium somewhere on the order of 28% above the non-union rate, but non-union workers in more highly unionized industries also see a premium in pay.²⁴⁰ In fact, because there are more non-union workers in such industries, the aggregate wage increases due to the threat effect of unions is almost as high among non-union workers collectively as among unionized employees. More broadly, the Economic Policy Institute describes how “unions have set norms and established practices that become more generalized throughout the economy, thereby improving pay and working conditions for the entire workforce.”²⁴¹

To the extent that NLRB decisions strengthen unions’ ability to collect information on abusive uses of data analytics in workplace surveillance, establish new protections against data abuse, and strengthen unions’ ability to expand into new sectors, union standards

236. See Frank R. Dobbin, *The Origins of Private Social Insurance: Public Policy and Fringe Benefits in America, 1920-1950*, 97 AM. J. OF SOC. 1416 (1992); Matthew Walters & Lawrence Mishel, *How Unions Help All Workers* (Econ. Policy Inst., Briefing Paper No. 143, Aug. 26, 2003), http://www.epi.org/publication/briefingpapers_bp143/; Henry S. Farber, *Nonunion Wage Rates and the Threat of Unionization*, 58 INDUS. & LAB. REL. REV. 335 (2003).

237. GERALD MAYER, CONG. RES. SERV., RL32553, UNION MEMBERSHIP TRENDS IN THE UNITED STATES (Aug. 31, 2004).

238. Dobbin, *supra* note 236, at 1430 (“As early as 1928, the paper and rubber industries reported unusually high rates of health insurance coverage, and by 1935 autos, paper, and rubber reported rates that were nearly double the average and at least 13 percentage points higher than the next highest manufacturing industry.”).

239. *Id.* at 1430; see also Walters & Mishel, *supra* note 236, at 10 (“For example, the average nonunion worker in an industry with 25% union density had wages 7.5% higher because of unionization’s presence.”).

240. Walters & Mishel, *supra* note 236, at 10.

241. *Id.* at 8.

opposing variable pay or unstable scheduling or abusive productivity surveillance are likely to spread to more non-union workplaces out of fear by employers that not following some of the union workplace-based practices will increase the likelihood of union election victories in their firms.

B. Passing Strong Legislation Protecting Individual Rights Against Surveillance is Unlikely

Much of the literature on individual-workplace-surveillance legislation is an endless parade of stories on the failures of past legislation and how new technology inevitably bypasses prohibitions contained in older legislation.²⁴² Ajunwa, Crawford, and Schultz note that almost all legislation does little more than guarantee notice of surveillance, meaning “the laws merely give employers a legal safety net to avoid litigation simply by posting a notice of surveillance, and it ignores employees’ dignity rights.”²⁴³ Even state laws, such as one in California restricting location-tracking of workers, are almost always merely default rules that employees can waive contractually—which they usually do facing the pressure at-will employees face in taking a job.²⁴⁴

Ajunwa et al. argue that mandatory privacy protections not waivable by individual contract are necessary and they propose some models, but they do not fully grapple with why most other pieces of workplace-privacy legislation have lacked mandatory rules. The reality is that, aside from the National Labor Relations Act and the Fair Labor Standards Act, which were both enacted at the height of labor power under the New Deal, almost no other individual employment laws significantly restrict how employers may manage their employees and no major amendment strengthening the NLRA has overcome filibusters

242. Dorothy Glancy, *At the Intersection of Visible and Invisible Worlds: United States Privacy Law and the Internet*, 16 SANTA CLARA COMP. & HIGH TECH. L. J. 357, 359 (2000) (U.S. privacy laws as seen as “piecemeal” or “fragmented”); Corey A. Ciocchetti, *The Eavesdropping Employer: A Twenty-First Century Framework for Employee Monitoring*, 48 AM. BUS. L. J. 285, 293–94 (2011) (Electronic Communications Privacy Act largely useless in today’s workplace environment since technology has advanced to a point that almost no transmissions are covered by the statute); Karin Mika, *Privacy in the Workplace: Are Collective Bargaining Agreements a Place to Start Formulating More Uniform Standards?*, 49 WILLAMETTE L. REV. 251, 274 (2012) (“Legislation relating to employee monitoring is a hodge-podge of statutes that do not directly apply to the technologically advanced way that most communications are made today.”).

243. Ajunwa et al., *supra* note 234, at 758 (quoting Alexandra Fiore & Matthew Weinick, *Undignified in Defeat: An Analysis of the Stagnation and Demise of Proposed Legislation Limiting Video Surveillance in the Workplace and Suggestions for Change*, 25 HOFSTRA LAB. & EMP. L. J. 525, 542–43 (2008)).

244. *Id.* at 762 (“[T]he solution for preventing intrusive and unreasonable worker surveillance cannot lie in contractual law.”).

in the U.S. Senate.²⁴⁵ The U.S. notably lacks workplace regulations common in other nations, from just-cause termination rights,²⁴⁶ to mandated vacation time,²⁴⁷ to federal paid leave.²⁴⁸ The strongest U.S. employment laws, Title VII of the Civil Rights Act and other anti-discrimination laws modeled on it, largely require employers to apply the same treatment to all employees without limiting what treatment may be so even-handedly applied.

As this article has detailed, challenging the use of data and surveillance in the workplace requires challenging core management decision-making, including how people are hired, how raises are allocated, and how firms are structured. Therefore, new legislation to accomplish those goals via individual privacy rights seems unlikely. Even limited legislation restricting employer prerogatives will likely face the same massive business opposition faced by other popular legislation in recent years that sought to regulate the workplace, such as paid sick days legislation. Years of political mobilization in support of legislation requiring paid sick days for employees has led to only a handful of states and cities enacting the protections because of the overwhelming business efforts lobbying against it.²⁴⁹ Building on existing labor law, therefore, which requires three-out-of-five votes on the NLRB and a supportive set of court appointees willing to defer to the Board's decisions, is a challenging but likely more successful route to policy change around workplace surveillance.

C. Likely Lack of Enforcement of Individual Workplace Privacy Rights

Even if a strong individual workplace privacy law could be enacted, it is worth noting that their provisions would likely be empty for many employees due to lack of enforcement, given the experience of workers

245. Taylor E. Dark III, *Prospects for Labor Law Reform*, PERSPECTIVES ON WORK (2009), <http://www.taylordark.com/TDexcerpt.pdf>.

246. Nicole B. Porter, *The Perfect Compromise: Bridging the Gap Between At-Will Employment and Just Cause*, 87 NEB. L. REV. 62, 64 n.8 (2008) (“[T]he ‘whole of the European Community, Scandinavia, Japan, Canada, and most of South America’ have just cause protections for their employees . . .”).

247. REBECCA RAY ET AL., CTR. FOR ECON. & POLICY RES., NO-VACATION NATION REVISITED I (May 2013), <http://cepr.net/documents/publications/no-vacation-update-2013-05.pdf> (“The United States is the only advanced economy in the world that does not guarantee its workers paid vacation.”).

248. Danielle Kurtzleben, *Lots of Other Countries Mandate Paid Leave. Why Not The U.S.?*, NPR (Jun. 15, 2015), <http://www.npr.org/sections/itsallpolitics/2015/07/15/422957640/lots-of-other-countries-mandate-paid-leave-why-not-the-us> (“[T]he U.S. stands virtually alone in not mandating paid leave of any type for its workers.”).

249. Bryce Covert, *Paid Sick Days Have Momentum—but the Opposition Might Have More*, NATION (Nov. 7, 2003), <https://www.thenation.com/article/paid-sick-days-have-momentum-opposition-might-have-more/> (The opposition to paid sick days legislation “is fueled with support, and money, from enormous business interest groups.”).

under other individual employment legislation. Anti-discrimination lawsuits are successful almost exclusively for litigants who were fired unfairly, or, less commonly, not hired at all, meaning that the litigants have no ongoing employment relationship with the defendant-employers. Those currently employed generally find that the anti-retaliation provisions of the law are too easy for employers to circumvent given the many reasons an employer may find to terminate a disfavored employee.²⁵⁰

Rights against surveillance are more like minimum wage rights: ongoing demands by current employees to restrict employer behavior. The reality of the Fair Labor Standards Act, however, includes massive under-enforcement of wage and hour claims, with evidence showing, for example: the majority of New York City restaurants are out of compliance;²⁵¹ 50% of day laborers suffer wage law violations; 60% of nursing homes violate the law;²⁵² and poultry processing has a 100% noncompliance rate.²⁵³

The problem of under enforcement of claims made by current employees does not apply just to low-income workers. Sexual harassment claims, which generally require exhausting internal complaint processes, are also notoriously hard to litigate because victims fear to raise concerns while employed.²⁵⁴

In fact, it is often only if a union is in place or a union assists employees in bringing a statutory claim that current employees bring minimum wage or other statutory claims. “Without the security a union offers, individual workers are much less likely to come forward to complain about or enforce their rights,” writes Catherine Ruckelshaus, General Counsel at the National Employment Law Project.²⁵⁵ Other

250. Deborah L. Brake & Joanna L. Grossman, *The Failure of Title VII as a Rights-Claiming System*, 86 N.C. L. Rev. 859, 864 (2008) (“Title VII leaves employees unprotected from significant retaliatory harms . . .”).

251. Remy Kharbanda & Andrea Ritchie, *Behind the Kitchen Door: Pervasive Inequality In New York City’s Thriving Restaurant Industry*, ROC-NY (2005), http://rocunited.org/wp-content/uploads/2013/04/reports_bkd-ny.pdf.

252. *Nursing Home 2000 Compliance Fact Sheet*, WAGES & HOURS DIV., U.S. DEP. OF LAB. (2000), <https://www.dol.gov/whd/healthcare/surveys/nursing2000.htm>.

253. Rebecca Smith et al., *Low Pay, High Risk: State Models for Advancing Immigrant Workers’ Rights*, NAT’L EMP. L. PROJECT (Nov. 2003), http://nelp.3cdn.net/7b8d8fb5f789354038_2pm6iy9w4.pdf.

254. L. Camille Hébert, *Why Don’t “Reasonable Women” Complain About Sexual Harassment*, 82 IND. L. J. 711, 725 (2007) (women find it hard to prove sexual harassment since they fear reprisals); Louise F. Fitzgerald et al., *Why Didn’t She Just Report Him? The Psychological and Legal Implications of Women’s Responses to Sexual Harassment*, 51 J. OF SOC. ISSUES 117, 122–23 (1995) (studies indicate employees reporting sexual harassment faced lower job evaluations, denials of promotions, transfer, and loss of employment, and that the employees making the most assertive responses, including filing formal claims, suffered the more negative outcomes).

255. Catherine K. Ruckelshaus, *Labor’s Wage War*, 35 FORDHAM URB. L. J. 373, 384 (2008). She

studies have found that union membership is a key determinant in whether employees file for unemployment insurance, Family and Medical Leave Act, or Occupational Safety and Health Act claims.²⁵⁶

The point is that the seeming-universality of individual-employment rights is undercut by their widespread under-enforcement. Thus, a focus on collective action via strengthened labor law to defend against workplace surveillance is likely to protect a far larger number of workers in practice.

*D. Challenging Information Asymmetry in Workplace Requires
Collective Rights and Negotiation*

Ultimately, the goal is not only to diminish slightly the overwhelming informational advantage of employers, but also to give workers collectively the ability to share in data controlled by their employer. This will generally create an even informational playing field upon which workers can negotiate for their fair share of the productivity advances from new technology, including from the use of data collection in the workplace that serves real productivity purposes. While some advocates promoting individual privacy rights support procedural rights for individuals to see the data collected about them and challenge the fairness of how that data is used,²⁵⁷ this is a far cry from collectively examining the underlying algorithms or being able to collectively negotiate changes in how hiring, compensation, and firm structure decisions are made.

To accomplish that goal, a purely negative individual rights approach inevitably will be both ineffective and insufficient. It will be ineffective because, while legislation or court rulings are likely to block the data collection that seems most intrusive or subject to abuse, such as collection of genetic information, it will fail to keep up with the myriad ways employers will be able to aggregate other data that will point to any underlying medical condition or other characteristic that more direct data collection would have revealed.²⁵⁸ The indirect indicators of

also cites to union-supported projects that assist workers to file lawsuits and protect them during the process). *Id.* at 391–93.

256. Walters & Mishel, *supra* note 236, at 11–12.

257. Kate Crawford & Jason Schultz, *Big Data and Due Process: Toward a Framework to Redress Predictive Privacy Harms*, 55 B.C. L. REV. 93, 126–27 (2014); Danielle Keats Citron & Frank Pasquale, *The Scored Society: Due Process for Automated Predictions*, 89 WASH. L. REV. 1, 20–22 (2014).

258. Reports of Target figuring out that a customer was pregnant from their overall purchasing history is a much-discussed example of this use of data analysis, just as the proliferating versions of predictive consumer scoring methods illustrate. Herb Weismann, *Big Data Knows You're Pregnant (and That's Not All)*, CNBC (Apr. 9, 2014), <http://www.cnbc.com/2014/04/09/big-data-knows-youre-pregnant-and-thats-not-all.html>; see also Valentina Zarya, *Employers Are Quietly Using Big Data to*

potential union support or likelihood of leaving a firm, detailed in Part II and III, are just part of the myriad forms of data advantage firms will seek in ensuring that they reduce their employees' ability to bargain for a greater share of the production surplus from their work.

So much of data is only useful in aggregated form and in relation to other data, so individuals cannot know what data employers are collecting about them is valuable. Strengthening workers' abilities to engage in collective action means in the information age a greater ability for them to evaluate that aggregate data and invest themselves in collectively aggregating the data that will level the playing field. Tightening the laws on use of data by employers is one part of that goal, but labor law opens up a more dynamic process of workers collectively using that and other data to match employers at the bargaining table.

E. Collection Action Can Better Balance Multiple Interests than a "Rights-Consciousness" Litigation Approach

Other scholars have highlighted the ways modern compensation schemes can disfavor the interests of loyal employees less likely to leave a firm, but the solutions proposed actually highlight the advantages to strengthening collective action over a "rights-consciousness" approach.²⁵⁹ For example, scholars Laura Wexler, Jonathan Klick, and Jonah Gelbach in their article *Passive Discrimination* have emphasized the potential Title VII discrimination in firms favoring volatile bonus schemes over regular pay increases, because "women appear to require a larger premium to accept a given increase in income volatility than do men."²⁶⁰ Whatever the cause of this differential,²⁶¹ its existence creates a potential for employers to screen out women in a discriminatory way by offering a "highly volatile compensation package."²⁶² The same factors could obviously also constitute age discrimination and the authors note litigation attempts in the past to target cuts in fringe benefits as constituting disparate impact discrimination under the

Track Employee Pregnancies, FORTUNE (Feb. 17, 2016), <http://fortune.com/2016/02/17/castlight-pregnancy-data/>.

259. See LICHTENSTEIN, *supra* note 8.

260. Jonah B. Gelbach et al., *Passive Discrimination: When Does it Make Sense to Pay Too Little?*, 76 U. CHI. L. REV. 801, 817 (2009).

261. The authors cite to a number of evolutionary biology explanations, although that seems a problematic basis for asserting progressive policy. See LOUISE BARRETT, ROBIN DUNBAR, & JOHN LYCETT, HUMAN EVOLUTIONARY PSYCHOLOGY 114–18 (2002) (suggesting that male risk-taking may be a method for advertising strong genes). For a formal model, see Eddie Dekel & Suzanne Scotchmer, *On the Evolution of Attitudes towards Risk in Winner-Take-All Games*, 87 J. ECON. THEORY 125, 126 (1999) (emphasizing the selection advantages of male risk-taking in animal groups in which the dominant male mates with all (or most) of the females).

262. Gelbach et al., *supra* note 260, at 818.

ADEA.²⁶³

The problem is that groups seen as disadvantaged under the civil rights laws may have sharply different preferences in wage versus benefit packages; as the authors note, there is evidence that black workers on average prefer immediate cash wages, so a large pension plan could constitute disparate impact discrimination against them.²⁶⁴ Even if courts were willing to entertain a more expansive view of disparate impact discrimination in light of the problems of data analytics,²⁶⁵ the potentially heterogeneous and competing claims on discriminatory impact add a challenge to any litigation (and where, for example, do black women get placed in these competing preference models?). Glebach et al. lay some hope that courts could use “statistics and subjectivity in determining how to value the packages and when different group valuations rise to the level of disparate impact.”²⁶⁶ They recognize this flies in the face of the reluctance of courts to interpret the law broadly²⁶⁷ and in fact, to the extent any discrimination is intentional, “targeted litigation and legislative approaches may just encourage employers to devise a new sorting mechanism” to achieve whatever ends they desire²⁶⁸—acknowledging the sophisticated information advantage employers have.

In place of courts substituting statistics or their own subjective sense

263. Judge Richard Posner rejected the plaintiffs’ argument in a case of across-the-board cuts in fringe benefits because of the business adversity facing the company. *Finnegan v. Trans World Airlines, Inc.*, 967 F.2d 1161, 1164 (7th Cir. 1992) (finding that disparate impact applies only to “policies that gratuitously—needlessly—although not necessarily deliberately, excluded black or female workers from equal employment opportunities . . . [whereas the policies here] are an unavoidable response to adversity.”).

264. Gelbach et al., *supra* note 260, at 815–17 (citing John T. Warner & Saul Pleeter, *The Personal Discount Rate: Evidence from Military Downsizing Programs*, 91 AM. ECON. REV. 33 (2001) (studies on high discount rates by blacks versus whites)); Emily C. Lawrance, *Poverty and the Rate of Time Preference: Evidence from Panel Data*, 99 J. POLIT. ECON. 54, 72 (1991) (inferring time preference rates from trends in household food consumption).

265. Pauline Kim highlights how data models produce biased outcomes that resemble disparate impact cases. Pauline Kim, *Data-Driven Discrimination at Work*, WM. & MARY L. REV. (2017). She builds on work by Solon Barocas and Andrew Selbst, who highlighted the ways choices made during data mining can have adverse impact on protected groups. Solon Barocas & Andrew D. Selbst, *Big Data’s Disparate Impact*, 104 CALIF. L. REV. 671 (2016).

266. Gelbach et al., *supra* note 260, at 847 (“When evaluating compensation packages and other fringe benefits, they would have to decide the role of statistics and subjectivity in determining how to value the packages and when different group valuations rise to the level of disparate impact. As mentioned above, such assessments can be difficult for courts, but they already do much statistical work in assessing conventional disparate impact and pattern-and-practice claims. Such expansion would address both intentional and unintentional passive discrimination cases.”).

267. *Id.* (“As briefly mentioned above, the judiciary may greet attempts to expand the scope of disparate impact suits or to limit the potential defenses with skepticism and hostility. Courts have tended to interpret Title VII in a stingy manner, have been reluctant to expand Title VII, and in recent years have retrenched as to ‘what constitutes an actionable employment discrimination claim.’”).

268. *Id.* at 850.

of group preferences, the advantage of the “voice” model in setting the wage–benefits mix or the use of surveillance in the workplace is that employees communicate their individual preferences to each other and to the employer and embody it in a collectively approved contract that responds to democratic pressure from all voices in the work unit.²⁶⁹ And to further complicate the analysis above on *Passive Discrimination*, private-sector unionization rates for African-Americans have exceeded those for whites for decades²⁷⁰ and black approval of unions is higher than by whites.²⁷¹ Therefore, in practice, African Americans disproportionately favor unionized workplaces that tends to have higher benefits than non-union ones. Potentially explaining this contradiction is Freeman and Medoff’s point that a union contract creates a credible enforcement mechanism for promises of future pay such as a pension.²⁷² African Americans with a credible belief that (and historic experience with) the likelihood of long-term promises being broken may therefore favor cash in hand versus the uncertainty of a larger deferred payout in a non-union context. Thus, workers have higher overall compensation, including a pension, with a union contract to enforce that promise—one more way a “voice” and a collective-action approach may lead to higher overall compensation.

VII: CONCLUSION: WORKPLACE DATA MINING AND RISING ECONOMIC INEQUALITY

The growing power of data analysis has played a key role in undercutting the collective power of workers and likely played a significant factor in the wage stagnation of recent decades and the divergence between productivity gains and wage gains.

While every recession disrupts the workplace and imposes temporary losses for working families, Levy Institute Economist Pavlina Tcherneva, working with data from Thomas Pickety and Emmanuel Saez, has detailed that with each recession, most increased wealth generated during each recovery went to the bottom 90% of the

269. Karin Mika has noted as well the differing privacy desires of different workers and how “different work situation may require different rules regarding employee monitoring and that although an overarching federal statute might be preferable, it would be difficult for a federal statute of this nature to cover many of the unique situations that occur in many blue collar situations.” Mika, *supra* note 242, at 272.

270. Jake Rosenfeld & Meredith Kleykamp, *Organized Labor and Racial Wage Inequality in the United States*, 117 AM. J. OF SOC. 1460 (2012).

271. *Favorable Views of Business, Labor Rebound*, PEW RES. CTR. (June 27, 2013), <http://www.people-press.org/2013/06/27/favorable-views-of-business-labor-rebound/> (blacks approve of unions at a 69% rate, whites at 46% rate).

272. Kuhn, *supra* note 29.

population in the form of higher wages. In the immediate post-war period, we have seen more and more of that wealth going exclusively to the wealthiest 10% to the point where the current recovery has seen the lower 90% actually losing income during a recovery—an unprecedented event—even as the income of the wealthiest Americans has soared.²⁷³ One extreme example of this increasing wage stagnation has been that median earnings of male workers aged thirty to forty-five without a high school diploma fell 20% between 1990 and 2013 (adjusted for inflation).²⁷⁴

This change has notably coincided with the increasing deployment of information technology across the economy. The rise of big data has given companies more complete information about their employees, allowing employers to know who they hire and know what those they hire think, believe, and want—giving those companies an advantage in every negotiation over pay and benefits. As this article has outlined, this process systematically shifts income from workers to employers and shareholders, a likely significant part of rising inequality over the last few decades. Alternative explanations of recent rises in economic inequality, such as globalization, anti-union political attacks by corporations, automation, or rising returns to education, seem incomplete because those factors have been at play in many cases for a couple of centuries.

Technology has been disruptive for centuries, but in past rounds of technological destruction, after any initial pain of unemployment and skills redeployment, workers organized to demand a share of the new wealth created by the new machines even as consumers benefitted from lower prices. What is new about information technology is that it increases corporate knowledge about the bargaining process itself, allowing companies to profile workers and consumers to extract knowledge about what those workers and consumers know in order to help companies win each moment of bargaining over price, conditions of employment, and exchange. Whatever portion of that inequality can be attributed to the deployment of this technology itself, this data advantage in bargaining inevitably exacerbates other causes often cited such as globalization, attacks on unions, shifts in skill sets needed in the modern workplace, and automation. Former World Bank Chief

273. Ryan Cooper, *How the Rich Devoured the American Economy*, In *One Chart*, WEEK (Sept. 25, 2014) <http://theweek.com/speedreads/445620/how-rich-devoured-american-economy-chart>.

274. Steven Greenhouse, *Low-Wage Workers Are Finding Poverty Harder to Escape*, N.Y. TIMES (Mar. 16, 2014) <http://www.nytimes.com/2014/03/17/business/economy/low-wage-workers-finding-its-easier-to-fall-into-poverty-and-harder-to-get-out.html> (pointing to the cause as fewer manufacturing jobs where low skills paid better but also “changing norms” in the workplace due to less union power pushing cutting labor costs; researchers found that it’s not just shifts to low-wage job classifications but downward trends in pay in existing sectors.).

Economist Joseph Stiglitz has argued that “the result from the new information economics is that issues of efficiency and equity cannot easily be delinked,”²⁷⁵ which highlights the need to increase informational parity in the workplace and reduce employer control of data as a means to promote greater economic equality.

Employers have systematically used greater control of data about workers’ desires and preferences to systemically tilt each bargaining phase in the workplace in their favor, so ensuring greater informational parity is a key route to greater economic equality. The National Labor Relations Board has taken steps that, if built upon in the future, could reverse many of the worst practices by employers that have undermined workers’ “voice” in setting wage and work conditions. If workers can in turn reengineer the bargaining process to restore information parity with employers, we can hope to see a return to a time when employees receive their full share of productivity gains in the economy.

275. Stiglitz, *supra* note 20, at 479.