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Putting social science to work.

Quantitative Data Tools for Service Sector Organizing

New Labor Forum

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Scholars concerned about the future of the labor movement often wonder how our research might benefit the workers and organizations on behalf of which we advocate. Strong labor organizations, we believe, are necessary for the passage of labor-friendly policies in the political realm and necessary to channeling any moments of worker militancy into durable political power for workers. Yet, our social science scholarship typically takes one of two forms: research aimed at policymakers in support of policies that might strengthen the hand of labor, but which are unlikely to get passed in the current political environment; or broader paeans about the importance of labor unions and labor militancy, reaching those already mostly likely to agree. “Here, we outline a different way for scholarship to be of use: using modern quantitative social science to strengthen existing labor organizations.”

The fundamental problem for a labor organization is persuading individual workers to commit to personally costly (and often risky) actions that yield collective benefits for workers within a workplace and for the labor movement as a whole. Such collective action is critical for workers since the labor movement will always have a hard time matching business in terms of money, technology, and influence with elites and politicians. Instead, labor’s power lies in its ability to mobilize large numbers of everyday people, whether to strike, sign petitions, canvass voters, or even target their pension investments (see “Capital Strategies for the Common Good: A Tool for Labor’s Revival” by Patrick Dixon in this issue). Despite being the source of organized labor’s power, bursts of worker collective action

are rare and difficult to sustain. What can be done to make such action easier in the current U.S. political climate, in which organized labor appears to have limited durable influence?

Despite being the source of organized labor’s power, bursts of worker collective action are rare and difficult to sustain.

Modern quantitative social science provides some new tools to address this challenge. These tools have been used to allocate scarce resources, for example, matching medical residents with hospitals, allocating food donations across food banks, assessing tactics in political campaigns, and evaluating anti-poverty initiatives in developing countries.¹

The same tools might also help with solving the collective action problems faced by workers and the labor movement.

The AFL-CIO has played a critical role in spreading a culture of rigorous, evidence-based political campaigning across the broader progressive movement through its creation of the Analyst Institute and Working America. Ironically, though, little of this innovation has made it into the realm of labor organizing, despite repeated calls to do so. And where labor organizations (especially alt-labor groups, like worker centers) are willing to experiment with new technologies, often they are not operating at the scale required to make best use of them.

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Data, Measurement, and Prediction

“What gets measured gets done,” a popular mantra in today’s policy world, has often been used by employers to impose ill-fitting metrics on employees who wind up filling out a lot of unnecessary forms. But it is also true that high-performing organizations generally have “key performance indicators” that are internalized throughout the organization.

Some nonprofits have such diffuse goals that quantitative indicators become impractical. But the labor movement is not one of them. Unions have very well-defined metrics as organizations, with the wage premium over the nonunion sector and the number of dues-paying members serving as two important and easy-to-measure indicators. In addition, new technologies have made it easier to measure intermediate outcomes in labor organizing, including various metrics of participation in labor actions and commitment to worker organizations.

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Take the example of participation at events or union meetings. Affixing unique barcodes or quick response (QR) codes on membership cards allows a union to systematically track attendance; stewards or picket captains can use their cell phones and a simple app to scan the cards of each participating member. In this way, every member interaction with the union, from health care to grievances to training, can be logged and attached to a member record in a centralized database.

A large, politically active union local in the service sector implemented such a card tracking system circa 2008 during contract bargaining. The idea was that, in the case of a strike, the strike captains could use a swipe machine to monitor who was and who was not on the picket line. This monitoring would therefore allow the union to effectively turn out its members onto picket lines. The union wound up not going out

on strike, but the members’ cards remained in use, generating a huge log of data for the union to use for all kinds of engagement initiatives, including phone banking and other electoral work, like Get Out the Vote (GOTV). Over subsequent years, measures of who attended various leadership development programs, who was a steward, and who contributed to the union’s political action committee (PAC) were added to the database, among other indicators. All of this resulted in a large comprehensive data set covering more than one hundred thousand members.

What can be done with this kind of member attendance and participation data? To begin, it can be used to map the internal flows of information and resources within a complex organization, making it legible and easier to manage from the top. But it can also be used for predictions that make educated and quantifiable guesses about how to foster and sustain collective action among members.

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While some may balk at unions mining worker data, this cat is already out of the bag. It is difficult to overstate the amount of individual data that can be simply purchased from digital vendors. Employers already share their worker data with payroll administration companies and anti-union consulting firms. If employers and right-wing organizations are already securing and leveraging highly detailed data on worker beliefs and practices, for unions not to use it means entering a high-stakes battlefield essentially unarmed.

The democratic nature of unions might make some uses of data out-of-bounds, depending on what members are comfortable with. But it also makes it likely that members will trust legitimate unions with data that they will not entrust to employers or other organizations.

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In one recent research project, the four of us used the rich membership data from the local described above to predict who was already a steward and who already contributed to the union's PAC, generating for each member "predicted steward" and "predicted contributor" scores. These scores permitted us to identify members who were not stewards and did not contribute to the union's PAC but looked like they should be based on the characteristics of current stewards and contributors, such as race, age, and other forms of participation in politics and the union. Separately, the predicted steward score could be used by field reps to find potential stewards inside shops with no current steward and see whether those workers were interested.

Of course, unions have to figure out how best to apply this kind of research. In this case, despite the fact that the scores worked well at predicting contributions, the field reps could not easily transform their workflow to focus only on those individuals the algorithm suggested. The natural pattern of fieldwork was for the representative to show up at a particular shop and talk with whomever was on shift. From the union leadership's perspective, it was also impossible to monitor whether field reps used the scores at all. The work autonomy of the field representatives, and the unstructured nature of the relationship between reps and members, meant that a better use of prediction would not be to identify *individuals*, but instead single out *workplaces* for field reps to visit where there might be latent workplace leaders.

Social science prediction methods also carry promise for aiding with new organizing efforts, where there is a considerable amount of data already available. We have used data from unlikely sources, like Yelp reviews, to identify potential "hot shops" that are ready to organize (it turns out that places that are crappy to shop at tend to be crappy to work at as well).² Another example: the Occupational Safety and Health Administration (OSHA) tracks establishments with reported injuries or harms, which suggest

there is someone on the shop floor willing to report the employer and grievances about workplace conditions. The most useful data for these kinds of predictions are those that convey information about workers' attitudes and opinions as well as the specific establishments where they work.

Finally, data can also be used for research that shows why unions have something distinctive to offer in politics. For example, one open question is to what extent workplaces matter for political mobilization: Why are some workplaces hotbeds of mobilization and participation, while others are relatively quiet? One reason could be that some sites just attract workers who are already political. Another could be that workers are politicized by their co-workers.

How to determine which is the case? One way is to look at what happens to the same workers when they switch from a low-participation workplace to a high-participation one. If the different levels of participation are a fixed property of each worker, then they should not change, but if the workplace has an effect on the worker's participation, then the participation rate of the same worker should increase. Using data from a collaboration with the large service worker local, we tracked how PAC participation changes up for the same workers when they go from a workplace with \$10 average contributions to the union's PAC to one with \$50 average contributions. We found that workers increase their PAC by 60 percent of the difference between \$50 and \$10, that is, \$24, right when they move. In addition, it is telling that there is no change in their behavior in the years leading up to the transition or in the years after, suggesting that it was the switch itself that made the difference; workplace culture can change an individual's decision to participate. This is a broader lesson for why the Democratic Party should support unions: active workplaces also wind up mobilizing new workers.

Continuous Experimentation

An important tool in laboratory and social science is the randomized controlled experiment. Modern companies run literally thousands of experiments every day. Everything about a webpage's design, for example, is subjected to a

large number of “A/B” tests to see what works. These are short experiments with two options (A and B) that vary design details about a webpage and see how outcomes (like click-through rates or user experience surveys) change. These experiments can be run almost continuously, with results incorporated into design decisions and new experiments extremely rapidly.

Experiments on what works to get people to vote have been run since the 1920s,³ and a large literature has developed comparing mailers with face-to-face meetings and phone calls. Across eighty-five studies, for example, the average effect of a mailer was roughly a 0.75 percent vote increase per mailer.⁴ Working America has been a leader in adapting these experiments to its field operations from 2008 onward. In 2018, Joshua Kalla and David Brookman worked with Working America to run nine field experiments looking at whether political campaign messaging changed voters’ ultimate choices.⁵ (The answer is a surprising “no,” suggesting that turnout and candidate information matter more than variations in political messages.) But these sorts of RCTs are much less common within the context of labor organizations.

Theorizing Collective Action Problems

Besides offering new ways to learn from and use data, economics, political science, and sociology have useful theories of collective action. Here, we sketch some of the ways those disciplines think about collective action—and how they imply concrete ideas for raising mobilization levels.

We can generally think of two different types of collective action problems: free-rider problems and coordination problems.

- *Free-rider problem:* A free-rider—or public goods—problem is one in which every person is tempted to stay home so long as someone else does the work.
- *Coordination problem:* A coordination problem is one in which people tend not to participate when they do not know that others are also voluntarily participating.

Consider the decision to attend a protest. A part of you thinks, “What difference does it make if I go? I’ll just be one of thousands” (the

free-rider problem), whereas another part of you thinks, “None of my friends will be there, and I don’t want to single myself out” (the coordination problem).

These kinds of problems have been studied extensively by social scientists. One recent experiment, done with both Hong Kong student protesters and German political party activists, showed clear evidence for the free-rider problem.⁶ Basically, researchers asked people whether they would go to a protest or canvass for votes, and also asked how many other people would show up. They then gave a random set of participants information about what everybody said (e.g., three hundred people said they were going) and then measured actual participation in the protest or canvass. In both cases, people who found out that more than their guessed number of participants were going went less and people who found out that less than their guessed number of participants were going went more. This suggests that people are willing to free-ride on the attendance of others, attending less when they find out that more people than they expected are going.

But there is evidence supporting the coordination hypothesis, too. Felipe Gonzalez, a Chilean economist, looked at attendance in the 2011 Chilean student protests, using the fact that absenteeism from high school classrooms indicated protest attendance and measuring friendship networks using data showing whether students shared classrooms in the past. He found that the more of your friends attended a protest, the more likely you were to go.⁷

Our current working model for political collective action is that it is a free-rider problem among strangers, but a coordination problem among friends and colleagues. When you think about the whole mass of people going, you just count yourself as one more body. But when you think about your friends and co-workers going, you think that you do not want to miss out on interacting with them and having the shared experience. When workers identify with their co-workers and co-union members, that gives a lever for mobilization that the labor movement has unique access to: people who identify with their co-workers and union will engage in collective action because all of their co-workers and co-union members are doing it.

If this underlying idea is right, labor unions have three tools at hand: tools to solve coordination problems, tools to solve free-rider problems, and tools to transform the latter into the former (and vice versa, but that is less important because coordination problems are cheaper to solve).⁸

To solve free-rider problems, the simplest solution is selective benefits: you give something *only* if people contribute. For example, union health benefits, legal aid, and training programs that are only available to members can encourage them to continue to pay dues in right-to-work states. Making some benefits (e.g., Union Plus discounts) available to early signers of union cards or National Labor Relations Board (NLRB) petitions, or people willing to risk workplace action, might thus encourage collective action. For members, points-based systems to reward activist effort probably work and are already used for rewarding shop stewards, for example. Of course, these kinds of selective benefits can backfire when framed poorly or in inappropriate contexts, discouraging more activist-oriented people and weakening the ideological basis of solidarity. The best kinds of selective incentives are those that reinforce social identities: for instance, professional development opportunities offered to teacher union members both incorporate a valuable material service and underwrite teachers' sense of membership in a professional community of their peers.⁹

The important thing for coordination problems is information; individuals need to think that lots of people in their social circle will value the fact they are participating (possibly because they are participating themselves). This might mean helping small groups of friends know which of their friends are going (like event organizers on Facebook do) or making sure people bring at least one other person to an event. People might underestimate the support for participation among their colleagues, so giving people credible information about this support for a given activity among their colleagues and friends can be very important. For example, political scientist Gwyneth McClendon¹⁰ randomized email messages to a lesbian, gay, bisexual, and transgender (LGBT) list about the time and date of a protest, with some messages promising that participants' names would be

published in the newspaper, others inviting participants to post pictures on Facebook, and still others just sending the logistical information. Both of the first two messages raised participation by a sizable amount.

One way to overcome coordination problems with economic incentives is to adopt what are called "assurance contracts" or "joint commitment contracts," where people agree to participate if more than the critical number agree (like the online fundraising platform Kickstarter). Then, once the critical number of people have signed up, everyone has to go to get some sort of reward. One could imagine some kind of recognition being given out to everyone who commits to attending a picket or rally, but the recognition is only given if more than a critical number go.

Understanding Social Networks

We might think of social networks as tools for transforming free-rider problems into coordination problems. Networks of friends and co-workers map how information and influence percolate through a workplace and who is likely to exhibit empathy and solidarity with whom. This brings us back to the bedrock of organizing, which is understanding and navigating existing networks of members or potential members. Veteran organizers often describe approaching the most productive or senior member of the shop early, with the understanding that converting this person to the union will have the biggest "ripple effect" on the rest of the shop. To quote union organizer and campaign strategist Jane McAlevey: "In hotly contested districts, building a supermajority means identifying the neighbor, congregant or family member who can help hold or move undecided or shaky voters (strangers simply can't do this) and making sure the conversations are happening."¹¹

Networks of friends and co-workers map how information and influence percolate through a workplace ...

Can data help with this, by identifying the workers who are central in workplace friendship and production networks—and then leveraging those ties for labor action? To answer this question, we have worked with the same union

local to identify potential strike captains in anticipation of an upcoming contract negotiation. Because the local maintains robust attendance records for everything from card collection to GOTV to strikes, we were able to incorporate a network measure in addition to a standard demographic approach.

People vote much more when promised they will have to answer the question, “Did you vote?”

Specifically, we measured the networks of co-attendance at union events—when workers attended an event together. While a simple tally of member turnout can be useful, we used the additional information about event co-attendance to understand the impact of one’s own attendance on other workers. That is, we looked to see which workers’ attendance was most strongly connected to the attendance of other workers. Who were the workers who tend to draw in others to attend events? Adding this “centrality” measure to the mix, we found it had the largest effect on predicting whether a member is a strike captain. (The second largest predictor was an indicator for whether a worker tended to be someone who others identified as an important source for workplace help and advice.) Our network predictions permitted the union to identify latent workplace leaders, especially those workers who exhibit a subtle influence in their workplace, which might be difficult to detect by field reps covering many shops.

Insights from Psychology and Behavioral Economics

Another relevant observation for organizing comes from political psychology and behavioral economics, most often deployed in marketing and GOTV operations. For example, in the GOTV literature, researchers have shown that “voting to tell others” is an important motivation for voting: people vote much more when promised they will have to answer the question, “Did you vote?”

The voting literature has found that social pressure, pride, shame, and gratitude can all

induce voting behavior. For example, a mailer that includes a possible voter’s own and his or her neighbors’ voting histories, and promises to mail records of future voting behavior to neighbors, generated the largest increases in voting we have seen in the literature (but also annoyed subjects considerably). Mailers thanking people for voting also generated sizable increases in voting. These basic insights about social pressure remain gold standard tactics for campaign mobilization in elections.

The applications of these ideas to labor organizing might seem obvious, but note that voting is a civic duty most people feel a (sometimes weak) obligation to discharge. Many of the interventions that work for voting involve cueing the social norm of voting and might not generalize easily to a context like labor organizing where the social norm either does not exist or indeed is anti-union.

Social psychology has looked at the factors changing norms via media representations or leadership.¹² In particular, very central people in networks can alter the norms for the people they are connected to by changing their own behavior and demonstrating a new norm. Media representations of new patterns of behavior also can be effective, from soap operas to movies. For example, one experiment on reporting corruption in Nigeria showed people a video drama in which the characters reported corruption, whereas others viewed the same drama with those scenes deleted. People who saw the first version were then more likely to report corruption when sent a hotline text messaging number. This supports the idea that showing favorable media portrayals of union activities could be helpful (providing you can get them on the air).

Building New Norms of Experimentation in the Labor Movement

Whether or not any of these ideas work in a labor organizing context is unknown, but there are plenty of practices inside labor organizations that look like social norms, and learning how to build norms of activism and engagement would be highly valuable to labor organizations.

How to find out? Once again, this is why building a culture of experimentation, working closely with organizers to turn their intuitions into systematic ideas about what works and then systematically testing them with randomized trials, will have such a high payoff. The payoff from a well-executed media experiment is greater than all the analysis of data collected from ad hoc or one-off efforts to summarize “what works.” But such a culture of experimentation may be harder to nurture and sustain in unions for several reasons.

None of this is to suggest that the tools and strategies outlined here will be a magic bullet that can overcome structural economic and political obstacles to worker power.

First, unions are often longstanding organizations with established cultures, and frontline workers (e.g., field reps) have a lot of autonomy. Those who have been doing things the same way for years may be difficult to persuade to do otherwise. Second, the fact that unions are often made up of a number of decentralized locals makes standardizing data and practices across the union difficult. Third, while coordination among a few large individual donors could help drive cultures of experimentation in political campaigns and progressive grassroots organizations, the more diffuse (and democratic) funding structure of unions precludes such a top-down approach. Finally, there are far fewer academics whose work brings them into contact or partnership with labor organizations than with electoral campaigns or businesses, where there is a now a longer tradition of experimentation and research collaborations. Despite these obstacles, our own experience with research partnerships gives us hope for the possibilities we have outlined.

None of this is to suggest that the tools and strategies outlined here will be a magic bullet that can overcome structural economic and political obstacles to worker power. There will likely be no resurgence of organized labor in the United States without a revival of American traditions of collective action and solidarity,

significant investments in organizing by unions, extensive government regulation, and big electoral wins by the Democratic Party at the local, state, and national levels.

Nevertheless, we think these tools and methods might be useful at every stage of such a resurgence: they might be incorporated into those campaigns aimed at securing labor law reform and, in case of its passage, might be incorporated into the organizing drives that result from it. When we see upswells of insurgent energy, as we have recently seen with strikes among teachers, gig workers, and others, we might explore how the tools outlined here might help translate such energy into lasting institutional power.

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Notes

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