POSITION PAPER

Design as Advocacy and the Future of Work: Lessons from a Participatory Design Workshop on Reimagining Work

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"The further ahead in time we want to forecast, the further back in time we should look." –Brad DeLong, Assistant Secretary of the U.S. Treasury from 1993-1995

How might policymakers, business leaders and labor advocates engage with the difficult transitions related to the future of work in 30 years given the role of emerging technologies such as automation and robotics? According to a recent study by Frey and Osborne, 47% of jobs in the United States are believed to be "at risk" of computerization (2013). On the other hand, while it is highly likely that the majority of jobs will be reconfigured in some way due to automation and robotics, MIT's David Autor believes that accounts of technological displacement are widely overstated. Currently, it is still difficult for machines to perform tasks that require adaptability, common sense or creativity (Autor, 2014).

These debates on what is known as technological unemployment or technological displacement have dominated mainstream media and scholarly discourses around the future of work in recent years. This paper introduces the use of design methods such as codesign and participatory design as one means of engaging in debates around the future of work and building constituencies across multiple stakeholders including labor advocates, scholars, designers, practitioners and technologists. By drawing on theory and practice from fields such as science and technology studies and design, it is possible to reframe and critically engage with these debates in order to raise questions about the role of technology in society, the nature of the economy and the socio-political values that shape our current realities. In particular, we are interested in the ways in which design methods might be used to reveal counterintuitive findings about the relationship

between technology and work as well as the way it might be used to build coalitions around the future of work that can improve the socio-economic possibilities of disadvantaged communities including women, immigrants, African Americans, Latinos, youth and formerly incarcerated populations that face obstacles in terms of access to employment opportunities due to persistent structural inequalities.

Background

As historical accounts make clear, from the invention of early timekeeping devices to the steam engine and from the assembly line to automated warehouses, emerging technologies are likely to reconfigure work in many ways--including the quantity and quality of work, the type of work and industries as well as the creation of completely new job categories. For example, according to many accounts, between 34%[1] and 44%[2] of the current active workforce are contingent workers (a 70% increase since 2008 according to temporary placement firm Kelly Services), which might include job categories such as freelance, temporary, interns, part-time, self-employed, project-based, consultants, contract and independent workers. Over 40% of people are currently working or have worked as independent workers.[3]

In addition, technology platforms for managing and coordinating contingent work have given rise to new job roles such as Taskrabbits and (Amazon Mechanical) Turkers; Uber drivers, Air BNB hosts and eBay sellers; as well as cam girls and gold farmers. The Internet and other technology platforms has also created emergent forms of free and unpaid labor; such as, for example, the work that you do when you check yourself out online as well as increasingly at the grocery store, pharmacy or Apple Store. Recent scholarship has also considered the role of affective labor, immaterial labor and emotional labor.

New forms of work go hand-in-hand with new forms of payment. For example, people may be paid in points, credits and miles or they may be paid in micropayments, gift cards, discounts or free services. Lastly, raising funds on Kickstarter or winning a challenge, competition or hackathon may stand in as a form of payment for work.

Because of the wide variety of new job categories, emergent job titles and roles and new forms of payment, it is difficult to track and measure work today. Since the government has not tracked these modes of work since 2006, and because the current job categories cut across many of the earlier definitions, it is not possible to get good statistics. However, there are many independent studies that have attempted to understand the number of people that are working in these ways as well as their economic impact.

As of 2006, the GAO estimated that ⅓ of the US workforce or 42 million workers work independently (self-employed, independent contractors, temps, part timers, etc.) (cite). Similarly, another study by the Association for Enterprise Opportunity claims that 92% of all US businesses could be characterized as microbusinesses in that they have fewer than 5 employees, a total of 41.3 million jobs[4]. In February 2014, the Bureau of Labor Statistics reported_that 14.4 million Americans were self-employed in areas such as agriculture, which are shrinking, and others such as services, which are growing. Finally, by 2020, it is believed that roughly 50% of the private workforce will have spent time as independent workers at some point in their work lives.[5]

Technological changes go hand-in-hand with socioeconomic changes in what can be referred to as *socio-technical systems* that mutually shape one another (Pinch & Bijker, 1984). Socio-technical systems embed the values through their design, appropriation and use in what might be understood as *values in design* (Flanagan, Howe, & Nissenbaum, 2008; Friedman & Nissenbaum,

1996). Furthermore, the adoption and use of technology often interacts with society in multiple, multidirectional and counterintuitive ways, which makes "predicting the future" a difficult if not impossible task (de Sola Pool, 1977). Despite recent enthusiasm around Big Data -- the ability to amass and analyze large quantities of information -- it is equally (if not more) important to introduce more qualitative understandings of the ways in which work is currently being reconfigured as a means of teasing out the nuances of these socio-technical changes and what they mean for society.

For example, recently, there has been considerable debate over disruptive innovation, which has dominated the discourses of Silicon Valley, business and entrepreneurship for the past several decades (Christensen, 2003; Lepore, 2014). With so many forces--venture capital funding, business school curriculums, even government programs--embracing disruption as a key characteristic of what it means to be successful in business and the economy, it should come of no surprise that our socio-technical systems have been aligned to design and build technologies and economies of disruption.

Few academic disciplines, policy arenas or professional fields are well equipped to engage in studying, predicting and forecasting the future. This essay explores the ways in which design methods -- specifically, codesign (Sanders & Stappers, 2008), game design (Flanagan & Nissenbaum, 2014) and prototyping -- can be used to open up speculative (DiSalvo, 2012b) questions and conversations around the future that would otherwise be difficult to broach. The future is a time and place that is created through the interaction between multiple, linked narratives. Who is included and/or excluded in these narratives depends to a certain extent on the political agency of diverse groups (Suchman, 2011). Specifically, how might we engage in shaping discourses (Latour & Weibel, 2005) and revealing disagreements and tensions (DiSalvo, 2012a) around the future that help to create opportunities for greater alliances and agencies among advocates and activists (including both labor advocacy and technology activism) as well as enable a critical engagement with emerging technologies?

With these questions in mind, we conducted a series of interviews that led to the creation of a codesign workshop with labor advocates in Chicago around the future of work. What follows is a description of the workshop and some of the initial findings that emerged from the project.

The Workshop

We had two aims in mind when we began this project. The first was to explore the ways design methods like prototyping could be used to help labor advocates create new alliances and different approaches to the opportunities and challenges they face in day-to-day organizing around the future work. The second was to use the past to examine the future. Both of these goals focused on helping labor advocates plan for the future, but early interviews with labor organizers and activists were revealing. For example, the challenges that labor advocates face are more immediate; for them, working for more equitable labor policies means planning through the next election cycle, not the next century. Additionally, continued struggles for living wages and other rights means that engaging with the ways new technologies are reconfiguring (and sometimes eliminating) labor is more abstract. These interviews informed our game design, and ultimately, we are hopeful that our reimagining work game helped open the door to longer term thinking and planning as well as new possibilities for partnerships between technologists, designers, labor advocates and workers.

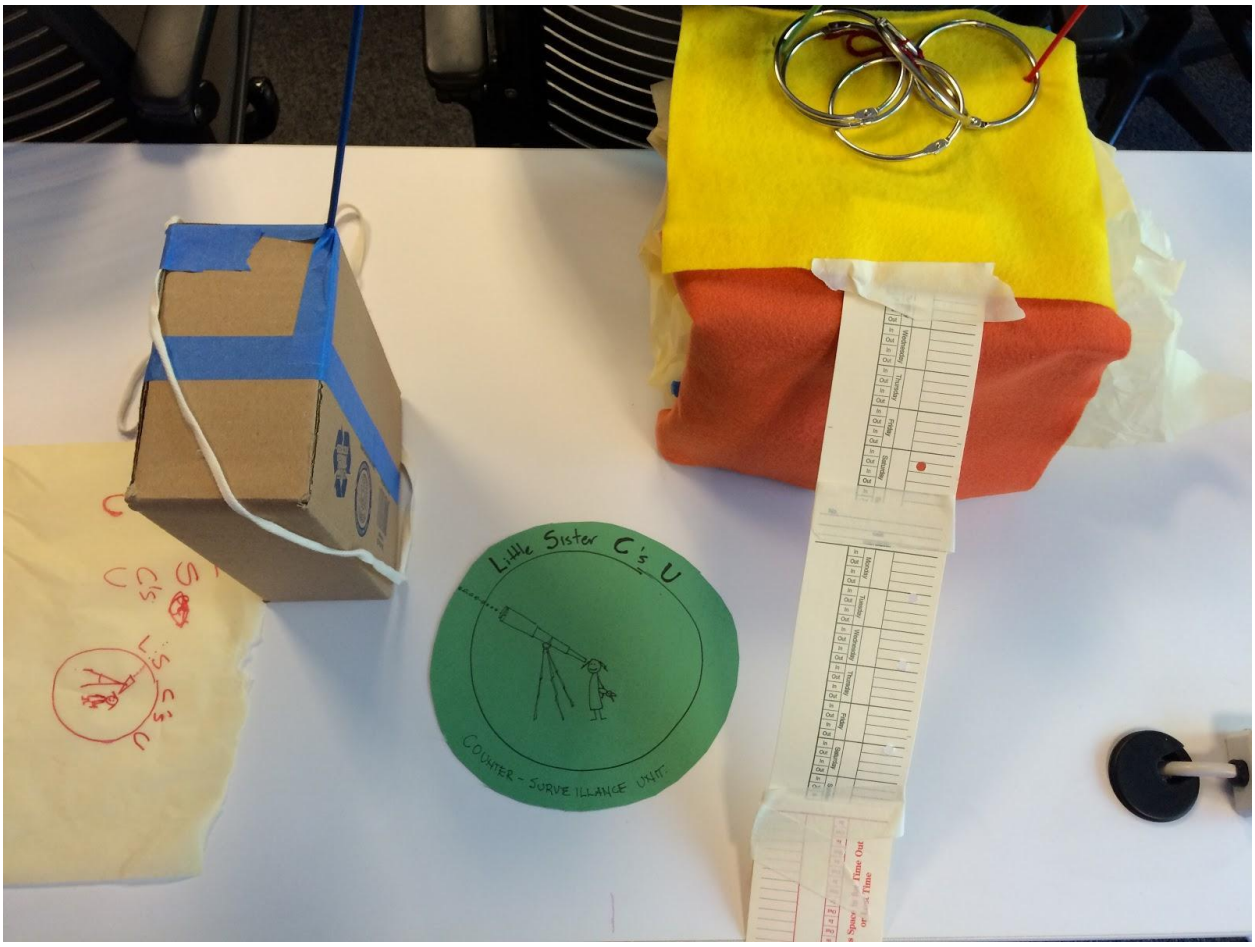
On Friday, September 19th, we held a workshop -- or, more accurately, a gameshop -- on the future of work. Approximately 30 people, including labor organizers and advocates, foundation administrators, scholars, technology experts, and designers, gathered at the Institute for Design at Illinois Institute of Technology in Chicago for the event, which was part of a three month project on the future of work supported by the Open Society Foundations. We played with the ways technology and labor are intertwined throughout history, and imagined new scenarios in the past, present, and future in the hopes of using factual and counterfactual histories to think in new ways about the future.

The day was structured into two parts. First, we drew inspiration from cultural probes (Gaver, Dunne, & Pacenti, 1999), reflective design, meaningful play, and critical games to create a board game in which participants created imagined interventions into labor history. Players traveled across a game board that took the form of a timeline to engage with historical technologies throughout several eras. In ancient Greece, for example, they were presented with information about devices for measuring time such as the water clock; in the late industrial era, they examined the assembly line; in the present, they focused on technologies associated with the automated warehouse; and in the future, they played with ideas surrounding robots and artificial intelligence. Each turn, teams moved through time and were tasked with creative actions like "design a corporate logo" and "plan a collective action" within the designated time period and technology. Their particular space on the board provided them with a perspective from which to approach the task. They might, for instance, land on "child factory worker, England" in the era of the steam engine.

Teams gathered around a game board in the shape of a timeline that spanned almost 3000 years. The board was divided into 5 eras, and each era explored labor in terms of set of technologies.

Teams drew inspiration from quotes, images, and information cards in each era, but their task (action card) asked them to create something new, and allowed them to depart from the historical timeline.

In the second part of the workshop, teams used lo-fidelity prototyping (with materials such as string, cardboard boxes, metal mesh, felt and blue tape) to build on some of the ideas that were proposed during the game play. In particular, we asked teams to review the action sheets that they had created in the game and consider the most unexpected and counterintuitive ideas that they had created in order to design an object, prototype, experiment or platform. Groups were asked to consider how the historical concepts that they created could be adopted to present and future situations and also how they might consider and represent questions of race, class, gender, economic status and industry in their prototypes.



A prototype of a workers' surveillance system that monitors working conditions, environment, and employers' surveillance systems and provides a printout indicating the safety and privacy of the worker. The prototype was called "Little Sister C's U."

Key Findings

In preparation for the workshop, we conducted eleven one-hour interviews in order to learn more about the ways in which labor advocates organize and plan for the future as well as the ways in which they consider the role of technology in their day-to-day organizing. The interviews illustrated that that on-the-ground activism is driven by a range of temporal constraints including quarterly activities, election cycles, annual funding and, sometimes, longer term strategies. The historical nature of the game that we created allowed workshop participants to extend and expand their time horizons, opening a generative temporal space in which they could engage in embodied interactions with the complex relationships between work, technology and socio-economic histories. The game challenged participants to engage with pressing questions about labor advocacy historically such as: What should fair compensation be? How much vacation time is necessary? What kinds of demands should workers have?

Our second finding is that engaging in counterfactual histories—the creation of fictional artifacts, events, narratives and experiences—is a way of broadening the conversations of labor advocacy organizations in the future. By rewriting history, workshop participants were able to open up a generative space of engagement that created a sense of agency and alternative possibilities.

Furthermore, the shared experience of participating in the game and workshop can be mobilized as a way of building trust, exposing tensions between diverse perspectives and weaving connections between different stakeholders engaged in the formation of policy agendas for labor advocacy.

Our third finding relates to the role of hands-on engagement with physical prototypes as a means of generating and building on ideas. Specifically, several participants observed that while they were brainstorming about the prototype that they were planning to build their group discussion was circular and that they were "just talking" as individuals whereas when they began prototyping, they felt that they were actually creating something together. Thus, the introduction of tangible materials--a ball of string, a blank cardboard box—allowed for a different set of ideas and possibilities to emerge from the group.

Our fourth finding relates to the ways in which labor advocacy organizations understand and engage with technology. Our interviews illustrated that it is difficult to conceptualize the role of broad technological changes such as automation and robotics in particular industries. For some, technology is not an issue that is on their agenda or considered at all vis a vis their advocacy work and, thus, it is hard to imagine how workers or intermediary organizations might have agency in contributing to the design and shaping of technologies around alternative sets of values. However, for the most part, labor advocates engage with communication technology such as the Internet and social media as a tool for their outreach efforts.

Finally, our follow up interviews indicate that the game and workshop have the potential to be much more than a pedagogical activity. In particular, labor advocates emphasize that design methods show potential as alternative ways of engaging directly with their constituencies in order to build a shared understanding of the challenges that individuals—especially, those who are most isolated and disadvantaged--are facing in their everyday work contexts.

Conclusion

In recent years, there has been great interest in using alternative approaches such as design methods in many sectors of the economy and public life in order to reframe issues, generate ideas and form communities. This project offers one example of the ways in which design methods—in particular, game design and participatory design—might be mobilized for the purpose of reframing the prevalent narratives around automation and robotics and bringing people together in order to generate critical questions and technological literacies that are necessary to engage in and shape debates around the future of work.

Acknowledgments

This position paper was produced as a part of the Future of Work Project, an inquiry supported by the Open Society Foundations that is bringing together a cross-disciplinary and diverse group of thinkers to address some of the biggest questions about how work is transforming, and what working will look like 20–30 years from now. The project is exploring how the transformation of work, jobs, and income will affect the most vulnerable communities, and what can be done to alter the course of events for the better.

The views and opinions expressed in this position paper are solely those of the author(s). These views and opinions do not necessarily represent those of the Open Society Foundations.

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Notes

[1] See https://www.freelancersunion.org.
[2] See http://www.kellyservices.com/Global/The_Talent_Project_iPad_App/
[3] See http://www.mbopartners.com/state-of-independence
[4] See http://www.microenterpriseworks.org
[5] See http://www.mbopartners.com/state-of-independence