A Constructive-Critical Approach to the Changing Workplace and its Technologies

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Abstract. Implementation of technical systems into work practices can result in shifting the balance of power in terms of what is visible and what is hidden (Suchman 1994; Star & Strauss 1999) and in fundamentally changing the nature of work itself (Bannon 1994). Sometimes these changes can have unpredictable and even adverse effects on the stakeholders involved (Clement & Wagner 1995). ECSCW as a venue has not shied away from pointing out that there is politics to sociomaterial processes we observe and study (Bannon & Bødker 1997; Bjørn and Balka 2007). As work computerization begins to involve the digitization of work practices, however, more thorny political questions emerge. The workplace changes when the spheres of private life and work are blurred as sensors are attached to the employee in the workplace for tracking movement (Gorm & Shklovski 2016; Møller et al. 2017), when the workplace as a fixed physical location is dissolved as in the case of turning homes into "pop-up co-working places" (Rossitto et al. 2017), in the "sharing economy" (Zade & O'Neil 2016), in online labor platforms such as Amazon Mechanical Turk (Irani and Silberman 2013), or when workplace data-collection is management- rather than worker-centric resulting in employee exploitation (Dombrowski 2017). The challenge for CSCW research is to study the changing workplace and affect the nature of collaborative work with the aim of improving the design of computational systems, while attending to and perhaps improving the *conditions for work*.

New questions for CSCW-studies?

The early successes of computerization have given way to increasing digitization of work that has resulted in changing and at times unstable conditions for work. Whether through workplace movement tracking (Møller et al. 2017) or systems to account for invisible work (Bossen & Foss 2016; Stisen & Verdezoto 2017), the relationship between the workplace and the employee is constantly re-negotiated with employees having less influence regarding the various potential kinds of outcomes.

Workplace tracking requires greater data collection so that the work carried out takes on the new dimension of data production as a necessary process (Møller & Vikkelsø 2012). For example, as medical systems require high quality medical data, clerks have had the scope of their work expanded without any changes in pay or benefits (Pine et al. 2016). Where tracking might benefit employers to subtly pressure employees into untenable work-practices, the lack of tracking can enable different kinds of injustices towards the most vulnerable and marginalized (Dombrowski et al. 2017).

The discussion at the CSCW 2017 panel on Social Justice and Design (Fox et al. 2017) brought up the question of whether CSCW research has always been on the side of management, focused on extracting greater value from employees rather than working towards better and more just conditions of work (Irani 2017). How do we, as researchers, determine when we are working towards actual progress and social change and when we are shoring up a system that is fundamentally broken for workers and marginalized groups? How do we balance critique of increasingly precarious and difficult work conditions with pragmatic approaches to action?

In this panel, we argue that a key challenge for CSCW researchers is to ensure that our scholarship results in computational systems development that productively integrates critical perspectives on data-driven work practices and the conditions of work, hence *constructive-critical*.

Concrete examples

ECSCW has always been at the forefront of asking the hard questions and pointing to the difficult issues that are worth study (Clement & Wagner 1995; Bannon & Bødker 1997; Bannon, Schmidt & Wagner 2011) and it is time to ask such questions again. In complex research sites where labour politics, technology, and work practices intertwine, a focus on the artefacts and their uses can suddenly become the safe option, allowing researchers to gloss over the injustices enabled by the technical systems and enacted by the employees they may observe. When studying the use of computational systems, we might consider not only how to

ensure that complex tasks are eased and carried out with efficiency, but also the human costs that such increases in efficiency may produce.

The goal of this panel is to discuss the possibilities of studying the political implications of technologies in the workplace and address what it means to build systems aimed to interrupt and underscore the politics of new digital labour practices. ECSCW can and should become the central venue for a conversation about how to make workplace and other technologies to support not only collaboration and efficient work practices but also "a life worth living" (Dreyfuss 2017). The panel consists of researchers whose work has encountered and explored the politics of the changing workplace.

Airi Lampinen: 'Flexible' forms of work may detach professional activities from traditional office premises and enable performing them anytime or anywhere (Gordon, 2002). As an example of grassroots efforts to organize nomadic work, we might consider Hoffice (Home + Office), a co-working methodology and network that encourages people to open up their homes as pop-up workplaces, with the help of online platforms. The goal here is to bring about the comforts of a structured place and time for work and to nurture a sense of community in the midst of isolating professional lives. Yet, the purported freedom of working from anywhere has been questioned (Gregg, 2013), and recent research illustrates how reasons for engaging in nomadic work range from choice to opportunity and obligation (de Carvalho et al., 2017). Examining grassroots efforts like Hoffice can reveal visions about desirable conditions for work while also highlighting the significant challenges in pursuing them without sustained structural support.

Six Silberman: Currently employed at Industriegewerkschaft Metall, the German Metalworkers' Union, Silberman's job is to organize German crowd workers. He was the lead writer of the "Frankfurt Paper on Platform-Based Work" (crowdwork-igmetall.de), a declaration of principles for fair working conditions and labor-management cooperation in online labor platforms drafted collaboratively by unionists and researchers in seven countries. Silberman also supports the ongoing evolution of the "Crowdsourcing Code of Conduct" (crowdsourcing-code.de), a self-regulation initiative developed by German platform companies, and is responsible for the next version of FairCrowdWork.org, a site that rates labor platform working conditions. Silberman uses design fiction to explore how information systems could be part of more democratic organizational and political-economic configurations. His fiction includes work on how GROUP and CSCW researchers could collaborate with "platform cooperativists" to increase democratic participation in the governance of online platforms (Silberman 2016a, 2016b) and work on future directions for reputation systems (Silberman 2017).

Lynn Dombrowski: Dombrowski's work tackles the difficult questions of computerization of low-wage work, precarity, and social justice (Dombrowski et al. 2017; Dombrowski et al. 2016). She points out that while low wage

occupations in retail, hospitality, and custodial services are often inundated by technology in the workplace, these sites are often dismissed as non-technical by CSCW. Yet, such work practices are just as regulated, shaped, and controlled by technology (*e.g.,* computerized work scheduling systems that control their time; keycards that track workers' location and movement; timekeeping systems that document their work hours). In this context, employers often use technologies to their advantage at the expense of vulnerable populations. The question of what is the role of computational systems in the management and manipulation of work conditions looms large.

Naja L. Holten Møller: Møller's work highlights how conditions of the traditional workplace are changing for employees across architectural design and healthcare. Here, sensor technologies warrant a change and are an interesting case to discuss in terms of how to balance stakeholder interests. Møller demonstrates the complexity of decisions that designers must make when data tracking in search of workflows is explored as a tool for architectural design of hospitals (Møller et al. 2017); thus, requiring of healthcare practitioners that they take on extra work when agreeing to produce data in and through their daily work. Data from tracking are interpreted to get a better understanding of workflows at the expense of privacy in work. Can sensors attached to the employee for a short period of time be considered 'fairly repaid' (Vertesi and Dourish 2011) when the purpose is to design a better future workplace? The central question is, how do we balance agendas of data tracking of employees in work against the development of new 'tools' for things such as architectural design. How do we support employees in boundary management (Palen and Dourish 2003) in this particular case?

Irina Shklovski: Computational systems in the workplace have been called upon not only to support work as practice but also to hold that practice to account. As Light, Shklovski and Powell (2017) point out: "Higher efficiency, more distraction and greater streamlining may mean fewer cracks through which people can fall in the short-term, but it also silences the critical chorus who would bring other ideas to try." In other words, striving for workplaces made efficient through technological means may result in obvious short-term gains with significant long-term drawbacks. Having every move made visible or quantified for the sake of easing collaborative output or using gamification to ensure particular levels of performance on rote tasks can come at the expense of a sense of dignity (Margalit 2009). In 1987, Robert Kraut asked whether "technology can be introduced into the workplace to exploit its usefulness without exploiting its users" and the question still stands (Kraut 1987).

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