The Relationships of Workers to Work, Peers, and Others

HCI and CSCW have historically framed themselves around supporting work. While all artifacts have politics, the recent shift into computational labor systems has directly impacted the lives and livelihood of workers in new ways. So, it is important to understand: what will the future look like for the workers who use these systems?

The perspective of on–demand work

Who are the crowd workers and what draws them to crowd work? Early literature emphasized motivations like fun and spare change, but this narrative soon shifted to emphasize that many workers use platforms such as Amazon Mechanical Turk as a primary source of income [19, 14, 3]. Despite this, Mechanical Turk is a low-wage affair for most workers in the United States [14, 25, 11]. Thus, those who choose to opt out of the traditional labor force and spend significant time on Mechanical Turk are especially motivated by the opportunity for autonomy and skill variety [19]. While some carry attitudes of "pity the workers" toward Turkers, this frame is increasingly rejected by workers and designers as patronizing [15].

Workers' relationships with requesters are fraught. The unbridled power that requesters have over workers, and the resultant frustration that this generates, has motivated research into the tense relationships between workers and requesters [9, 36]. Workers are often blamed for any low-quality work, regardless of whether they are responsible [25, 27]. Some research is extremely open about this position, blaming unpredictable work on "malicious" workers [8] or those with "a lack of expertise, dedication [or] interest" [37]. Workers resent this position — for good reason. Irani and Silberman highlighted the information asymmetry between workers and requesters on AMT, leading to the creation of *Turkopticon*, a site which allows Turkers to rate and review requesters [16]. Dynamo then took this critique on information asymmetry and power imbalances a step further, designing a platform to facilitate Turkers acting collectively to bring about changes to their circumstances [36].

Researchers have also begun to appreciate the sociality of crowd workers. Because the platforms do not typically include social spaces, workers instead congregate off-platform in forums and mailing lists. There, Turkers exchange advice on high-paying work, talk about their earnings, build social connections, and discuss requesters [25]. Many crowd workers know each other through offline and online connections, coordinating behind-the-scenes despite the platforms encouraging independent work [10, 39]. However, the frustration and mistrust that workers experience with requesters does occasionally boil over on the forums.

The perspective of piecework

Early observers believed that workers were strongly motivated by the autonomy of working in the piecework model. Clark observed textile mill pieceworkers and reported, "When he works by the day the Italian operative wishes to leave before the whistle blows, but if he works by the piece he will work as many hours as it is possible for him to stand." However, the emergent trend contrasted with this early rhetoric, as when workers began instituting "The Fix", deliberately slow work to game efficiency experts [35]. Piece workers, Roy found, would form even more starkly antagonistic relationships with their managers.

Soon workers began resisting piecework regimes. The match–girls engaged in their famous strike of 1888, particularly pushing to abolish the fines that were taken out of their wages. Soon others followed suit, including women in the garment industry in Philadelphia who established collective bargaining rights [6] and national coal miners who effected an individual minimum wage in 1912 [34].

Many worker organizations began weighing in on (or, more precisely, against) piecework and the myriad oversights it made in valuing workers' time [18, 32]. As mounting attention increasingly revealed problems in piecework's treatment of workers, workers themselves began to speak out about their frustration with this new regime. Organizations representing railway workers, mechanical engineers, and others began to mount advocacy in defense of workers [18, 32]. Pieceworkers' relationships with their employers eventually developed a pattern of using laborer advocacy groups [23, 1, 26, 17]. Following the template of the match–girls, collective action grew to become a central component of negotiating with managers [13, 30].

Relative to the modern on–demand workers, there is a noticeable dearth of information on the inter–personal relationships among pieceworkers beyond the match–girls at the end of the 19th century. Nevertheless, we can offer some observations: primary sources indicate that labor organizations wished for workers to identify as a collective group, "not only as railroad employees but also as members of the larger life of the community" [18]. Doing this, Ostrom and others later argued, would facilitate collective action and perhaps collective governance [31, 13, 30]. Riis also contributed to this sense of shared struggle and endurance by documenting pieceworkers in their home–workplaces, literally bringing to light the grim circumstances in which pieceworkers lived and worked [33].

Comparing the phenomena

There was generally less written about work quality concerns for historical pieceworkers than there is in modern on–demand work. Why the difference? One possibility is that, through writing web scripts and applying them to many tasks, it is possible for a small number of spammers have an outsized influence. Another possibility: it was much harder for piece workers to move to a new location and get a new job — today, workers can simply accept a different task on Mechanical Turk. A third possibility: online anonymity breeds distrust [7], and where pieceworkers could be directly observed by foremen and known to them, online workers are known by little more than an account ID.

The relationship between workers and employers has also shifted: while historically the management of workers had to be done through a foreman (who necessarily had an intuitive — perhaps sympathetic — relationship with workers), the foreman of the 20th century has largely been replaced by algorithms of the 21st century [22]. The result of this change is that the agents managing work are now cold, logical, and unforgiving. Where a person might recognize that the "atten-

tion check" questions proposed by Le et al. and others ensure that malicious and inattentive workers are stopped [21, 29], some implementations of these approaches only seem to antagonize workers [27]. More than 30 years ago, Anderson and Schmittlein wrote: "When performance is difficult to evaluate, imperfect input measures and a manager's subjective judgment are preferable to defective (simple, observable) output measures" [2]. This frustration has only grown as requesters have had to rely on automatic management mechanisms. Only a few use the equivalent of human foremen [12, 20].

Relative to the mature state of collective action for pieceworkers offline, crowd workers have struggled to make their voices heard [36, 15, 16]. With workers joining and leaving the on–demand labor force continuously, and with many part-time members, it is extremely difficult to corral the group to make a collective decision [36]. However, even when they can, enforcement remains a challenge: whereas pieceworkers could physically block access to a site of production, online labor markets provide no facilities for workers to change the experience of other workers. This is a key limitation — without it, workers cannot enforce a strike.

Implications for on–demand work

The decentralization and anonymization of on–demand work, especially online crowd work, will continue to make many of its social relationships a struggle. While some workers get to know each other well on forums [25, 10], many never engage in these social spaces. Without intervention, worker relationships and collectivism are likely to be inhibited by this decentralized design. One option is to build worker centralizing points into the platform, for example asking workers to vote on each others' reputation or allowing groups of workers to collectively reject a task from the platform [38].

The history of piecework further suggests that relationships between workers and employers might be improved if employers engaged in more human management styles. Instead of delegating as many management tasks as possible to an algorithm, it might be possible to build dashboards and other information tools that empower modern crowd work foremen [20]. If the literature on piecework is to be believed, more considerate *human* management may resolve many of the tensions.

Reciprocally, crowd work may be able to inform piecework research in this domain. There exists far less literature about piece workers' relationships than there does today about on–demand workers' relationships. Two reasons stand out: first, modern platforms are visible to researchers in ways that the sites of piece work labor were not. Second, Anthropology stands on a firmer theoretical and methodological basis than it did at the turn of the 20th century. Malinowski, Boas, Mead, and other luminaries throughout the first half of the 20th century effectively defined Cultural Anthropology as we know it today; *participant–observation*, the *etic* and the *emic* understanding of culture, and *reflexivity* didn't take even a resemblance of their contemporary forms until these works [24, 4, 28]. On–demand labor today may give us an opportunity to revisit open questions in piecework with a more refined lens.