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Mechanical Turk
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Abstract: This entry describes Amazon Mechanical Turk (AMT), its uses, and how the systems have been analyzed from economic, managerial, and sociological perspectives on work. I also suggest MT as a diagnostic system for understanding labor processes of entrepreneurial outsourcing, speculative innovation, and 'big data' industries.

Keywords: Work, Management, Occupations, and Organizations, technology, capitalism, Internet, labor

Mechanical Turk (AMT) is website that serves as an online marketplace matching freelance data processing workers with large volumes of information processing tasks, including audio file transcription, images captioning, and marketing surveys. The majority of workers are located in the United States (47%) and India (34%) and can receive money from Amazon in dollars and rupees, respectively. Remaining workers (19%) earn Amazon gift cards. Among the most active AMT workers, nearly 58% already have a bachelor's degree or higher (Clickhappier 2014).

The design of AMT emerged to address the information technology industry's need to process large amounts of unstructured data — photographs, natural language texts — that form the lifeblood of internet industries, from social media to surveillance. Amazon designed the site, dubbed "artificial artificial intelligence," to address the shortcomings of artificial intelligence in processing fast changing cultural data (Irani 2015a). To organize an influx of retailer uploaded images and text, Amazon engineers developed a website to allow people to process the data in small or large batches, with their own computers and from their own homes. In 2006, Amazon made the system available for other requesters – AMT parlance for employers – with similar work. Requesters interacted with workers through anonymizing spreadsheets

and or through automated algorithms built on AMT's Application Program Interfaces (API). Where requesters might have tried to write computer code to process data, now they could call a human pool through similar but much simpler acts of coding. AMT allows programmers to substitute data processing workers for artificial intelligence to enable semi-automated computational systems (Irani 2015a; Nardi & Ekbia 2014).

MT was initially celebrated by media and business scholars as massively distributed networked production that made new kinds of informational goods possible (e.g. Wikipedia and YouTube) (Brynjolfsson & McAfee 2014; Shirky, 2010; Benkler, 2006). That may be true, but in more mundane ways than initially imagined. Social science disciplines – themselves producers of information products –have turned to AMT for a source of inexpensive and quickly accessed *experimental subjects*. Computer Science and Information Science fields have evolved subfields and conferences called "Human Computation" to prototype new ways of managing these digitally-accessible workforces and integrating them into novel computer systems.

Economists have analyzed AMT as an "online labor market" (Benson et al. 2015; Horton 2010). Horton compares AMT to third party intermediaries such as temp agencies; unlike temp agencies, digital platforms like AMT provide payment transfer infrastructure and search technology that enable workers to browse and choose their own jobs (2010). This literature focuses primarily on the information and value transfer in the design of such markets, including considerations such the availability of hourly wage information for workers, fees collected by platform operators, and the impact of reputation systems on employers and workers abilities to participate and protect themselves (Benson et al. 2015; Ipeirotis 2010). These economic approaches formulate labor welfare are primarily a problem of access to jobs and information (Horton 2010).

Sociologically-informed works turn to the question of how workers understand and organize their work experiences. These approaches draw on ethnomethodological approaches to understanding social order as produced through mutually observable and reportable features of interaction and

routines. Interview and observation based studies have questioned the celebratory rhetoric that calls crowdsourced labor a substitute for watching television or wasting time (e.g. Shirky 2010). Workers routinely discuss the importance of income as a motivation for working on Mechanical Turk (Martin et al 2014; Gupta et al 2014). MT often forms a secondary income source to fill gaps and address unpredictable income flows. Only the most successful workers reported earning even $15,000 a year — roughly equivalent to 40 hours a week at minimum wage (Lehdonvirta 2016; Martin et al. 2014; Ipeirotis 2010).

Ethnographic studies of workers emphasize a range of invisible labors required to make AMT work. These include web-based community forums where AMT workers train neophytes, set ethical norms, advise requesters in task design, and provide general social support (Martin et al. 2014). Others find that households where other members absorb chores and prepare food to free AMT workers to jump on jobs as they appear online (Gupta et al. 2014). AMT workers cooperate in forums to tip each other off to good jobs as they appear online (Gupta et al. 2014; Martin et al 2014:225). Technologists, both among AMT workers and volunteers, build and maintain digital means of association, including: web-based forums (Martin et al. 2014), Turkopticon, a site to review requesters (Irani & Silberman 2013), and Dynamo, a safe space to discuss grievances and activism (Salehi et al. 2015). The dispersion of workers across geographies, however, may dampen workers' ability to identify with one another and take collective action (Lehdonvirta 2016).

MT can offer a view into how speculative technological production, as well as big data' industries, generate value through new labor processes. The work of processing cultural data, filling the gaps of AI, is central to web industries that organize, store, and surveil large volumes of user generated text, images, and sounds, usually while searching for a profit. MT and similar systems are central to calibrating search algorithms, offering companies a view into public social media sentiment about brand, and making sound and video searchable (Irani 2015a). MT also enables rapid innovation by offering firms and entrepreneurs rapid, flexible, and cheap access to a diverse and educated workforce for rapid marketing surveys and product testing

(Brabham 2013). Inexpensive and quick workforces lower the financial and time costs of experimentation and failure for employers (Irani 2015a:730). This is one example of the labor conditions that enable rapid change and product speculation in innovative industries (Bergvall-Kåreborn & Howcroft 2012).

There are two implications of this perspective. First, contrary to popular images of MT workers as low-skill labor, it may be the case that MT connects employers with a variety of educated workers, enabling employers to access a range of skill sets to sustain innovation amidst volatile markets and rapid change (see Stark 2009:99-101). Second, rather than focusing only on worker identity, norms, experiences, and vulnerabilities, we examine AMT workers relationally with entrepreneurial employers — new kinds of outsourced selves (see Hochschild 2012) — who deploy others' labor cheaply, flexibly, and at a comfortable distance (Irani 2015b). MT allows for new kinds of speculative production and producers while further hiding the value and skills of workers farther down the innovation supply chain.

See Also: Big Data, Digital, Digital Labor, Occupations, Sociology of Work

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