

Managing the “Global” Crowd: Amazon Mechanical Turk and the Discipline of the Virtual Worker

"The great thing about digital work is it's really hard to make a sweatshop out of digital work. It's really hard to force someone to do work... you can't beat someone up through a computer screen."

—Lukas Biewald, CEO of crowdsourcing company CrowdFlower

INTRODUCTION

After announcing the creation of “Amazon Mechanical Turk” in 2005, CEO Jeff Bezos and the rest of Amazon have seen their pet project grow to unpredictable expanses. A pioneer of “crowdsourcing” platforms, Amazon Mechanical Turk “has been hailed as a solution to one of the greatest problems of the 21st century: the massive volume of information provided to us by the Internet, and the equally large difficulty associated with categorizing it” (Cushing 2013). Meanwhile, a 2011 study found that the number of crowd workers is increasing by 100 percent each year, (Hicks 2014) and that now as many as 500,000 workers “power the Mechanical Turk machine” (Marvit 2014). These technological developments are embedded in a discursive era in which notions of the informational “cloud,” the hive-brained “crowd,” and the expansive “web” of the internet all aggressively assert an increasing virtualization of the globe, exponentially raising the scale and the stakes of meaningful analyses of socio-political-economic realities.

In a seminal piece for anthropological approaches to globalization, Arjun Appadurai sought to explore some of the major changes within a new form of global “disorganized capitalism” that facilitated the creation of complex “disjunctures between economy, culture, and politics” (1996: 51), leaving many of the past, boundary-based world systems of thought as irrelevant or even misleading. Crucial to his analysis is his alternative representational framework for culture, one that affirms a radical fluidity, or channels of “flow” that defy “boundaries, structures, or regularities” (1996:62). Through the example of the recent rise and

implications of “Turking,” I first argue for a rethinking of Appadurai’s representations of a flowing globality that would more closely investigate the masked material relations of an increasingly fetishized abstract and diffuse virtual by instead focusing on place and subjects as mediated through and constitutive of the virtual marketplace. Second, by comparing and contrasting some of the (dis)continuities of the managerial methods between Taylorist-inspired factories in Shenzhen, China, and the hyper-flexible promises of AMT, I explore how the virtualization of capitalist management techniques and technologies has opened room for an omnipresent factory-space and work-time to be relocalized in the disciplined body of the Turker. It is my hope that some insights and pathways for future research into the changing form of labor and discipline in the information economy of global capitalism will arise from the intersections of these two investigations.

THE VIRTUAL TURK PLACE

Amazon Mechanical Turk functions as a labor marketplace platform for those who require a virtual task done, “Requesters,” to hire people who are willing and able to complete the work, known as “Turkers,” from all around the globe. These jobs, titled “Human Intelligence Tasks,” or “HITs,” are outsourced, or “crowdsourced,” tasks that require the interpretative abilities of a human and cannot yet be performed by a computer, such as reading text in photos, organizing images by color or content, recognizing irony in a blurb, filling out a survey, writing a short paragraph, flagging potentially “objectionable material,” or transcription work (Cushing 2013, Marvit 2014).¹ These often tedious and repetitive jobs are divided thousands of ways into “microtasks,” many of which only take three to ten minutes to finish. These tasks are uploaded to the digital labor market with specific instructions to be completed by hoards of anonymous Turkers, clicking away behind their assigned serial numbers. Tasks are broken down and disseminated en masse with near frictionless efficiency by Requesters through the aid of

automated algorithms, allowing them to aggressively increase efficiency by having anywhere from one to tens of thousands of workers labor simultaneously on discrete parts of a single project, reducing production time from hours to mere minutes. In order to manage the high volume of completed tasks, Requesters have developed a variety of techniques for sifting through the produced data. For those Requesters inputting a low volume of tasks, such as requests for a fifty-word paragraph, manual assessment and manipulation of the gleaned information generally suffices. Other large-scale Requesters who crowdsource tens of thousands of microtasks have been developing and utilizing a diversity of automated algorithms for aggregating all of the produced data, rejecting outliers, and coding the results into usable information.

Since Turkers are technically categorized as “independent self-employed contractors” and not official employees of either Amazon or the Requester, they are ineligible for a minimum wage, overtime rates, health coverage, or other protections for employees.ⁱⁱ It is estimated that 90 percent of all tasks offer compensation between 1 and 10 cents (Ross et. al 2010). On average, Turkers earn about \$1.53 an hour by completing hundreds of these microtasks for a plurality of Requesters across the globe (Marvit 2014). The low pay and rapid growth of the crowdsourcing industries have facilitated a boom for Amazon and other pioneers of the virtual labor markets, with most recent available reports showing revenues that have rocketed up an astounding 75 percent to \$375 million in 2011 (Cushing 2014). Each Requester pays Amazon 10 percent of the price of each completed task in exchange for the right to draw from this centralized pool of international labor power. The sources of revenue have become even more expansive, however, as some Turkers are paid in store credit to Amazon’s online shopping center, dramatically increasing the profit pull of the company. Amazon and corporate Requesters aren’t the only players profiting. More recently, t-shirts emblazoned with combinations of Turking icons and

lingo from the Turker forums have surfaced on the Internet, deepening the channels of capitalization on this expanding market. Also occupying a key role in this growth are the industries of knowledge production. Some behavioral social sciences and advertisers are tapping into Turker productivity as a source for survey completers to rapidly and cheaply produce massive swaths of data (Palacci et. al, 2010),ⁱⁱⁱ while others study the reliability of Turk-derived information (Kittur, et. al 2008, Buhrmester et. al 2011). In an ongoing, indirect labor dispute, some academics publish on managerial strategies and technologies to implement for the efficient improvement of AMT (Dow and Klemmer 2011), while others publish and circulate technologies for and articles about worker protection against the nexus of Requester-Amazon power.

The demographics of the Turker workforce have been notoriously difficult to map.^{iv} The most recent estimates from 2010 have determined that an overwhelming number of Turkers are concentrated in India, 46 percent of all Turkers, or the United States, with 39 percent of the labor force. In India, the “average Turker” is either a part-time employee elsewhere or unemployed, male (66-34 percent gender split), possessor of a bachelor’s degree, approximate age of 27, and living off of an income of under \$10,000 a year. On the other hand, in the US, the average turker is female (59%-41%), a possessor of a bachelor’s degree, approximate age of 34, and has a household income between \$25,000 and \$60,000. (Ross, et. al 2011, Ipeirtotis 2008). There were a wide variety of responses in these data sets as to why one Turks, ranging from some who use Turking as the main source of income for survival, to others who use it to pay for small personal treats, and to others still who merely use it to kill time. Despite the diversity of reasons for Turking, it was estimated that for approximately 50 percent of all participants, the wages gained from Turking were used to substantially alter their material circumstances (Ross, et. al 2010). These data points chart a rough cartographic representation of the Turking landscape, one that

requires more qualitative depth in the future beyond these crude survey empirics for further contextually embedded investigations of such questions of “Turker” as identity category, gendered labor and AMT, or changing temporal experiences.

TURKING BODIES IN THE WORLD

AMT exists along a unique intersection of the “ethnoscape” and the “technoscape,” one that complicates Appadurai’s representations of global flows. In his global imagination, Appadurai maps a present landscape of persons, the “ethnoscape” marked by the increased capacity for mobile human bodies to intricately navigate through kinship, labor, national, and filial networks to form emergent social relations through newly created interactions that are constituted by “the realities of having to move or the fantasies of wanting to move” (1996: 52). He similarly describes the dispersal of information channeling technologies across the globe, the “technoscape,” as a rapidly intensifying phenomenon that enables the projection of a data-laden field across the world. AMT, however, offers a reworking of the ethnoscape by exploring the possibilities of the development of a labor market that utilizes a turbine not merely fueled by the smooth flow of *bodies*, but by the abstract data-form of alienated labor power, shorn from the earth to circulate along virtual vectors. By developing a centralized virtual hub for workers to sell their labor power remotely, AMT gives thousands of employers access to the labor power of hundreds of thousands of Turkers without having to build the infrastructure to house their physical presence. In this “disjuncture” the technoscape obscures and organizes the ethnoscape by sequences of code and shiny interfaces that promise a “global connectivity” such that “microwork employers can imagine themselves as technologists and innovators engaged in non-hierarchical peer production” instead of “managers of global data factories” (Irani 2013: 2).

This presentation of AMT’s productive capabilities as highly global offers a complication of what Appadurai calls “production fetishism.” Claims of a distinction, for Appadurai, between

“globally” and “locally” produced goods deceptively mask the dialectical relationships of production between all local spaces and agents to the global flows and all flows to local agents of actualization (1997: 58-9). Yet instead of employing a rhetoric of illusory locality, AMT is expressly “global” in scale and presents itself as detached from any particular place, with its homepage boasting of the “access to a global, on-demand, 24 x 7 workforce” it provides to Requesters. In this case the abstract manifestation of the fragmented assembly line, detached from a physical factory and re-localized in the networked bodies of Turkers and technology, is shrouded by the bangs and whistles of a precipitously expanding Internet. To general online users, the rapid search results and unimaginably expansive breadth of waiting web pages give the Internet a magical sheen and mystical autonomy that foment a sense of seamless consumption. This informational convenience, however, is predicated in part off of the hidden labor of hundreds of thousands of Turkers, each situated within a patterned network of locales, and the infrastructural labor of many more to materially establish the vectors for informational flow. It is their work of sorting images by keywords, censoring pornographic material, writing blog blurbs, and completing surveys for advertisers that contribute to composing the virtual landscape we internet surfers engage with everyday. Translated web pages and scalable image searches all appear to mysteriously precede the searcher, results simply awaiting excavation by the average Google-user. Unpacking the work powered through AMT offers a sober reminder that the labor and infrastructure that maintains the World Wide Web are always located *somewhere* and completed by *someone*.

The particular stories of some Turkers have begun to circulate the web through news articles about AMT, breaking through the shroud of invisibility cast around the workers. They are often narratives of hardship, such as the story of an unemployed nurse living in the southwest of the United States, whose demoralizing inability to find stable work left her with few options

but to turn to Turking full-time, perusing the marketplace for sixty-hours a week at an approximate wage of \$2.50 an hour (Marvit 2014). Another recently laid off worker, who used earnings from Turking to supplement her inefficient monthly income from welfare benefits and food subsidies, did not have the financial assets to support the opening of a bank account and therefore had to be paid in Amazon online store credit (Marvit 2014). These experiences highlight the deep embedding of AMT's profitability in the precarious labor relations global workers are experiencing within the hyper-flexible "flows" of capital, jobs, and workers in the global economy.

The geographically patterned dispersal of Turkers around the world and the centralization of wealth extraction, however, display tears in the representational rigor of the misleadingly fluid "scapes." Instead of viewing the Internet as an all-encompassing web, the demographics of AMT emphasize the asymmetry of movement and the wide lack of access to join in to the "technoscape" for particular populations. This would require instead an analysis of the globe as a system of relays between discrete points, bringing about a concerted methodological shift in thinking about how the globe might be representable:

The type of analysis of globalization, which seeks to map the strategic sites with hyper-concentration of resources as well as the cross-border networks that link these sites and others, helps us understand to what extent there is a specific geography of globalization and the fact that it is not a planetary even encompassing all of the world. It is...a changing geography, one that has undergone multiple, often specialized, transformations over the last few centuries and over the last two decades, and most recently has come to include electronic space (Sassen 2002: 10).

Sassen's analysis offers an eloquent imperative to remember the material infrastructure, and the geographies thereby denoted and constructed, that undergirds and enables the representations and experiences of abstraction, flow and "the cloud." This examination of the "specific geographies" of globalization must be able to move rapidly between the virtual and physical to identify their

mutually-constituting roles in the global systems of value and subject production. The task for further analysis, in investigating the cross-border motion of AMT, becomes addressing the challenge of uncovering the sorts of cultural and political-economic forces that channel Indian and American workers into these hyper-precarious, hyper-temporary low-wage employments. How do the changing geographies of technological relay networks alter the machinations of production under capitalism and how does this affect the formation of subjectivities?

THE IRON DISCIPLINE OF THE CLOUD

While the technologies and interface of AMT's abstracted labor-commodity appear new, much of the core logic draws upon long histories of capitalism's management and discipline of labor productivity, demonstrating the arrhythmic, non-linear movement of capitalist development. Capitalism, it seems, does not make clean breaks with eras past, but rather is constantly recuperating and reiterating a variety of managerial tactics of labor extraction. AMT channels a global connectivity between Requesters and Turkers to maximize the efficiency of information transfer while minimizing labor cost by pooling a workforce without a physically apparent presence, shedding the materiality of official employees in pursuit of pure abstract micro-bundles of time. It is a market of labor power exchange, where workers are reduced to serial numbers that index repetitive clicking capabilities and surplus value can be maximally extracted. All the tasks are displayed in a searchable, sleek interface with the name of the Requester, the allotted time for the completion of the job, and the amount earned in reward. Each job is titled merely as the literal task requested, giving little to no indication what the information will be used for, where the data will go, or what the final product will look like. Any effort to maintain a façade of human-to-human exchange has been abandoned to foreground unadulterated commodity movement, as the HITs scroll up the webpage like polished pistons of a grotesque combine.

The repetitive microtask model of labor division by AMT is highly reminiscent, yet with important differences, of past anthropological research on factory labor, such as Pun Ngai's (2005) discussion of workers in Shenzhen. AMT presents itself to potential users as an effective mapping instrument that gives employers access to a newly composed and radically scalable workforce. Through the techniques of surveillance provided by Amazon, Requesters are able to manage groups of workers within the established laboring population by screening and selecting Turkers based upon their general quality ratings, whether the worker has earned a "master" certification, or merely upon geographical location as indicated by IP address. This organization of a functionally centralized, massive labor pool of hundreds of thousands of Turkers is paralleled by the municipal regulation of migrant workers in Shenzhen (Pun Ngai 2005: 44) in that it maintains a guaranteed supply of surplus labor power to create a highly competitive market, thereby driving wages into the ground and shaving off thousands of dollars in production costs for many employers. Here, however, the comparison falters. While state-backed labor managers in Shenzhen factories relied upon a complex network of explicit legal codes, Amazon Mechanical Turk seems to thrive from the legislative gray area it occupies, cashing in on the near-complete un-regulation by federal or local authorities of their labor scaling technologies.

The effectiveness of the basic principle of labor pooling is amplified through the reduction of the jobs offered to basic repetition, ensuring that the laboring mass need not have differentiated skills, rendering each worker utterly interchangeable and thereby replaceable. The workers within the pool, in response, are disciplined to work hard in order to stand out of the crowd through techniques of measurement, for "the basic technique of disciplinary power was the regulation of the body by placing it in a disciplinary space, then measuring it and analyzing it" (Pun Ngai 2005: 93). Workers in factories and Turkers on the Internet must internalize and

perform in accordance the norms expected of them by the employers; their livelihood depends upon it.

AMT, despite lacking a physically disciplinary space of enclosure, has used virtual techniques to surveil and manage labor. On AMT, worker hierarchies are measured, mapped and collected for Requesters through the form of an overall “quality rating” for the Turker. Whenever a Turker completes a task, the work is sent to the Requester, who, before paying the Turker, decides whether to accept or reject the work. If accepted, the Turker receives payment as promised and the Requester keeps the product of labor. If rejected, the Turker is *not* paid, a mark is added to their record of performance, and the Requester still keeps the product of labor. This system keeps the worker at the mercy of the Requester, whose unchecked juridical power to accept or reject the work they receive gives them the opportunity to unaccountably smite the rating of the Turker. For every rejection a Turker must tediously complete hundreds of accepted HITs to salvage and maintain their rating if they hope to be eligible to complete the higher paying, “quality controlled” tasks. Oftentimes, completed tasks are being coded in such high volumes by Requesters that the cold enunciation of rejection has left the realm of the human and is carried out by prefabricated algorithms.

FLEXIBLE DISCIPLINE

An analysis of Turking that reduces the phenomena to merely a high-tech re-instantiation of Taylorist scientific management seems to miss much of the complexity of the emergence of crowdsourced microtasking. Particularly interesting about the AMT module that defies this reductionism is the strong rhetoric of flexibility and self-determination that undergirds its representational strategies. Turking can thus be characterized as free labor ideology *par excellence*, in which each laborer theoretically has full autonomy over when they work, how they

work, and where they work (so long as it has internet) thanks to the diversifying abilities of AMT. Common mantras circulated by promoters of AMT highlight the chance to “be your own boss,” the opportunity for mothers to earn some pocket change while their child swings on the monkey bars, and the freedom brought on by being able to do paid work in your pajamas (Ballard and Webster 2008: 137). All of these sentiments appear antithetical to the efficient Taylorist regimentation of microtasks and the production of a “mindless body” that is disciplined into an “unconscious habit of the worker” (Pun Ngai 2005: 83).

AMT wraps itself within two distinct but related stories of flexibility, the first for the Requesters, and the second for the Turkers. Digital crowdsourcing is providing the employers across industries unprecedented access to a flexible workforce, hired for moments, perhaps even seconds, to complete hyper-specific tasks in rapid response to consumer demand. Kalleberg (2000), who has diligently charted the changing trajectory of worker-employer relationships over time, notes that along with the shift away from manufacturing in the US towards a dominance of service, finance, and real estate industries comes a tendency to employ temporary workers and private contractors. She observes, “Contracting saved costs especially when used for activities done by an organization’s non-core workforce. They reasoned that there is little reason to pay high wages to workers who are easily monitored and replaced, or who perform work...that is peripheral to an organization’s main activity” (2000: 351). In an explicit confirmation of this calculation, during a recent interview, CEO Lukas Biewald of CrowdFlower, a rival crowdsourcing company inspired by the success of AMT, articulated concisely the acceleration of this exact principle allowed by crowdwork: “Before the Internet, it would be really difficult to find someone, sit them down for ten minutes and get them to work for you, and then fire them after those ten minutes. But with technology, you can actually find them, pay them the tiny amount of money, and then get rid of them when you don’t need them anymore” (Marvit 2014).

The promise of a centralized and scalable workforce, whose constitution as such ensures cheap production costs by keeping wages low through an overabundance of laborers, offers Requesters the alluring potential of competitive participation in the global market.

Like the under- and un-employed Turkers mentioned above, flexible waged hours are offered to workers struggling with precarious employment brought on by the fluctuations of a rapid and increasingly fluid international market. The necessity for work at nearly any wage becomes a reality for many laborers. As Bourdieu notes, this changes the workers' ability or even desire to organize and resist the high levels of exploitation, as "work becomes a rare commodity, desirable at any price, which puts employees at the mercy of employers, who exploit and abuse the power this gives them" (Bourdieu 1999: 84). This sentiment is often confirmed in the ways that Turkers discuss the possibility of regulation of the pay rates on AMT as being opposed to their interests, worrying that regulatory interventions run the risk of causing the Requesters to flee the market, taking the wages with them (Martin, et. al 2014: 9). It is this relegation to the "non-core workforce" of the contracted laborer that gives Turkers little leverage to change their present conditions. The diversity of reasons why people Turk, the geographically separated work "place," and the anonymity of the Turkers leaves little room for the development of strong senses of solidarity among workers, making collective action nearly impossible and even undesirable. All of these details ensure the docility of a workforce without the need of the foreman's whistle on the factory floor. The changing work arrangements, wrapped in the valorization of the flexible free-agent do not escape modes of discipline and coercion; rather, they are merely repackaged and employed in new ways. What AMT offers is a reliably flexible workforce and job market, able to both fill the gaps for employers in need of immediate contractors, and the employment gaps workers have suffered due to rising rates of

unemployment. Perhaps what must remain *inflexible* is the very hegemony of flexibility, providing rapid responses to crises in employment.

The territorially unified factory is not a necessary condition for disciplining workers. In some sense, through AMT and its related platforms, the factory has been emancipated from place, as it is abstracted, decentered, and reorganized into the individual computers, phones, and self-discipline of the Turker. When speaking of the Taylorist disciplining through time management, Pun Ngai writes, “The timetable...was simply deployed to manage and then change everyday life practices. Programming a new factory life, building up a work habit, and self-technologizing the body, the mind and the habitus were all the effects of practicing a timetable” (Pun Ngai 2005: 93). AMT, a virtualized factory floor with strict time restrictions on the microtasks, operates as a deterritorialized punch-in-clock that enables the worker to “step” in and out of the factory in shift intervals of their choosing. Because of its stated disavowal of the punitive and restrictive space of the factory and the foreman, for AMT to be successful, it requires an internalization of the economization of time such that workers manage and exploit themselves on behalf of Amazon and the Requester. AMT does not give workers the “luxury” of discrete spatial and temporal boundaries between “work” and “life.” The alteration of this temporal configuration makes it such that work time and space bleeds out and exists in the paradoxical space of being *never yet always, nowhere but everywhere*. Since one can be working at any time, one might as well be working all the time in a perpetual slog of value production. As one Turker put it in an interview, “It still doesn’t add up to a lot of money per hour, but if I’m sitting there watching TV anyway, it’s more than I’d make just sitting there” (Mieszkowski 2006). The “choice” to Turk becomes, or perhaps always was, a compulsion, composed from a combination of guilt, material necessity, and boredom, socially inscribed into the Turkers’ habits through everyday experiences.

The “flexible” labor market of AMT is so deeply imbued with the consumptive language of choice that it may require a reworking of Appadurai’s notion of the “fetishism of the consumer” (1996: 59) to parse through. Appadurai sketches out a particular symptom of late capitalism in which the consumer is re-sold the image of consumption through a rhetoric of choice that valorizes the ability to consume as agency. The consumer *as such* consumes consumption, obscuring any positive notion of agency through production. AMT’s rhetoric of self-determining *production*, however, seemingly avoids the fetishism as articulated by Appadurai while still employing a choice rhetoric. The worker power promised by AMT is quickly revealed to be hollow, however, for the Turkers do not own the fruits of the labor, they do not even know for whom they are working or even what they are working on beyond the microtasks they are given. Just as “the consumer is consistently helped to believe that he or she is an actor, where in fact he or she is at best a chooser” (Appadurai 1996: 59), the Turker as private contractor is nudged to believe that they are a producing, self-determining actor when at best they are choosing between equally menial tasks, whose process of completion are predetermined, and whose skilled savvy in creation is concealed.^v In this rethinking, one consumes the image of oneself producing as a “free agent,” an image they themselves produce in the process of surplus value extraction by the Requester. The *fetishism of the free agent*, then, steps forward as a new mysterious form of image-production that animates the forces of capital, ringing in the collapse of the distinction between consumer and producer. .

DIGITAL (IN)CONCLUSIONS

Discussions of the increasing virtualization of labor, or the creation of “immaterial labor,” must be careful not to ignore the processes of centralization and material arrangement that are in fact constitutive of it. Labor power for Turkers is disembodied and virtual, but still comes at a very real human cost, a cost that is extracted through channels of physical

infrastructure whose lightning data transfer belie their own existence. Similarly, rhetoric that overly touts the “globalness” of “flows” of capital is misleading and instead should be carefully modified to represent forms of travel as perhaps more accurately moving between discrete competing and collaborating relay points that entrench themselves with use. AMT, with its exclusive technological channel that is almost entirely monopolized by India and the US, with its deep reliance on the human maintenance of a virtual façade, and with its hyper-exploitation of a diffuse population, lends itself to being prime territory for an investigation of the peculiarities of “globalizing” capitalism. AMT exemplifies the non-linear, asymmetric alterations of labor extraction techniques of capitalism. The bizarre linking of a neoliberal discourse of freedom and flexibility with almost outright Taylorist practices signals the development of new technologies that have re-packaged and re-presented a lineage of capitalist discourse on the management of human labor power and movement. These forms of management enter into a reflexive relationship with notions of temporality and work that have immense implications for subject formation under “global” capitalism. The self-discipline of Turkers should be placed within a much broader lineage of changing relations of power in the spheres of production, as workers’ attitudes have altered towards employment, reducing desires and possibilities for organization and resistance by the presentation of jobs as a fragile privilege, always in risk of flight to another place around the globe.

A further subjective implication of the discipline of virtualization of labor is the unbinding of the factory and the erasure of a semblance of demarcation between “work space” and “life space,” of “work time” and “life time” into a soupy mélange. You are on Facebook at work and you are Turking at the dinner table. For some, AMT functions to both capitalize on hobbyists who complete tasks “for fun” as well as to condition hobbies into activities of value production for remote employers. For others using AMT to materially improve living conditions,

they are left little respite from the coercive ideologies of financial self-reliance. One is always a mere click away from clocking back into the factory. Mechanical Turk and its crowdsourcing siblings are crucial objects of study if we are to understand the morphing dynamics of what work means today within the spatio-temporal axes of globalizing capitalism.

Bibliography

- Appadurai, Arjun. 2002 (1996). "Disjuncture and Difference in the Global Cultural Economy," in Inda and Rosaldo, eds. *The Anthropology of Globalization: A Reader*. Blackwell.
- Aytes, Ayhan. "Return of the Crowds: Mechanical Turk and Neoliberal States of Exception." *Digital Labor: The Internet as Playground and Factory*. New York: Routledge, 2013. 79-97.
- Ballard, Dawna I., and Sunshine P. Webster. "Time and Time Again: The Search for Meaning/fulness Through Popular Discourse on the Time and Timing of Work." *KronoScope* 8.2 (2009): 131-45.
- Bourdieu, Pierre. *Acts of Resistance: Against the Tyranny of the Market*. New York: New, 1998.
- Castree, N. "The Spatio-temporality of Capitalism." *Time & Society* 18.1 (2009): 26-61. Print.
- Cushing, Ellen. "Amazon Mechanical Turk: The Digital Sweatshop." *Utne*. N.p., Feb. 2013.
- Dow, Steven P., and Scott R. Klemmer. "Shepherding the Crowd: An Approach to More Creative Crowd Work." *Stanford HCI Group* (2011).
- Graham, Fiona. "Crowdsourcing Work: Labour on Demand or Digital Sweatshop?" *BBC News*. BBC, 21 Oct. 2010.
- Grant, Tavia. "Microwork Is the New, New Buzzword in Global Outsourcing." *The Globe and Mail*. 10 Mar. 2010.
- Hicks, Michelle. "Crowdsourcing: The New Temporary Worker Model." *Idaho Business Review*. 07 Mar. 2014.
- Ipeirotis, Panos. *Demographics of Mechanical Turk*. Issue brief. Department of Information, Operation, and Management Sciences Leonard N. Stern School of Business, n.d. Web.
- Irani, Lilly. "The Cultural Work of Microwork." *New Media Society* (2013): 1-20. Sagepub.
- Kalleberg, Arne. "Nonstandard Employment Relations: Part-time, Temporary and Contract Work." *Annual Review Sociology* 26 (2000): 341-65.
- Martin, David, Benjamin Hanrahan, Jacki O'Neill, and Neha Gupta. "Being a Turker." *CSCW* (2014)
- Marvit, Moshe Z. "How Crowdworkers Became the Ghosts in the Digital Machine." *The Nation*. The Nation, 04 Feb. 2014.
- Mieszkowski, Katharine. "'I Make \$1.45 a Week and I Love It'." *Salon*. Salon, 24 July 2006.
- Pontin, Jason. "Artificial Intelligence, With Help From the Humans." *The New York Times*. The New York Times, 24 Mar. 2007. Web.
- Pun Ngai. Skim Intro, Focus on Ch.s 1, 3 *Made in China: Women Factory Workers in a Global Workplace*. Duke University Press, 2005.
- Ross, J., Irani, I., Silberman, M. Six, Zaldivar, A., and Tomlinson, B. (2010). "Who are the Crowdworkers?: Shifting Demographics in Amazon Mechanical Turk". In: CHI EA 2010. (2863-2872).
- Sassen, Saskia. 2002. "Introduction: Locating Cities on Global Circuits," in Sassen, ed., *Global Cities, Linked Networks..* Routledge.
- Verdery, Katherine. 1996. *What Was Socialism? and What Comes Next?* Princeton.

NOTES

ⁱ Some tasks are being advertised on AMT so that a pattern of input from the turkers can be coded into an algorithm for a computer to use in the future. In this way many of the turkers are working towards their own obsolescence.

ⁱⁱ “The Site is arranged, sponsored, and managed by Amazon Mechanical Turk in the state of Washington, USA. The laws of the state of Washington govern this Agreement and all of its terms and conditions, without giving effect to any principles of conflicts of laws” (Amazon Participation Agreement, 2012)

ⁱⁱⁱ A rumor has recently been brought to my attention that Reed’s psychology department uses AMT for collecting cost-effective survey data.

^{iv} “Thus there is the possibility some respondents may have given purposefully false answers. Collecting responses through a HIT creates the possibility of demand characteristics (where subjects change behavior in response to being measured): workers may have shaped their responses based on what they believed we wanted to hear in order to be assured of being paid for their time. In addition, the method of delivering this survey means that respondents were self-selecting—thus our survey may be biased towards Turkers who enjoy taking surveys and are willing to provide information about themselves, rather than reflecting the worker population as a whole. Nevertheless, we believe this sample is still large enough to provide meaningful insight into the demographics of MTurk workers” (Ross, et. al, 2010: 2).

^v This is not to say all who Turk are subject to the “false consciousness” of agency under capitalism. Many interviews with turkers featured in online articles demonstrated a complete awareness of the level of exploitation they were experiencing. This analysis is more of a jab against the prominence of a genre of neoliberal discourse that valorizes individual flexibility in the market place as the ultimate freedom, a rhetoric that seems to be taken up here by AMT, rather than the psychological states of particular agents or a class of actors.