



# Turking in a Global Labour Market

David Martin<sup>1</sup>, Jacki O'Neill<sup>2</sup>, Neha Gupta<sup>3</sup> & Benjamin V. Hanrahan<sup>4</sup>

<sup>1</sup>Xerox Research Centre Europe, Meylan, France (E-mail: David.Martin@xrce.xerox.com); <sup>2</sup>Microsoft India, Bangalore, India; <sup>3</sup>Nottingham University, Nottingham, UK; <sup>4</sup>Pennsylvania State University, University Park, PA, USA

**Abstract.** This paper examines how working in the global labour market of Amazon Mechanical Turk (AMT) impacts upon and is understood by two different groups of workers. To do this we report on two qualitative studies; one of US and another of Indian crowdworkers (or ‘Turkers’) that we analysed from an ethnomethodological orientation. Our data is naturalistic and comes from a variety of sources—interviews, observations and forum posts—where Turkers describe their work, and their understandings of that work and of the transnational market they work in. We compare and contrast their situations, their reflections on the marketplace and its global reach, and we take a look at their understandings of one another. Our focus is on ‘the work to making turking work’ (Martin et al. 2014). That is, the work that turkers do to organise and make sense of their work as they operate in the AMT marketplace, such that they can do so effectively. AMT is a technologically mediated marketplace—that is the distribution, completion and payment of work is done online, almost completely through the AMT platform. The design of the platform has important consequences for how Turkers experience and understand the market (including its global or transnational nature). We discuss how our findings relate to a variety of CSCW issues and provide an initial examination of how they relate to *globalisation* both as a mundanely experienced phenomenon and as a topic of academic interest. We finish the article by drawing on our own experiences in research and design to look at how technology can be used to *intervene* in a market like this to try to address imbalances in power and agency between employers and workers.

**Key words:** globalisation, transnational markets, amazon mechanical turk (AMT), turkers, ethnography, ethnomethodology, crowdsourcing, activism

## 1. Introduction

Jeff Howe of Wired Magazine, originally defined crowdsourcing as “the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call” (Howe 2006). Crowdsourcing encompasses multiple types of activity: invention, project work, creative activities, and *microtasking*. Microtasking is our focus here and the best known microtask platform is Amazon Mechanical Turk (AMT). AMT is essentially a global task and labour marketplace where registered requesters pay Amazon a fee per task (20 % of task payment, with an additional 20 % for tasks in batches greater than 10) to post what they call Human Intelligence Tasks (HITS) to then be chosen by registered workers (‘Turkers’). Often these are batches of similar repetitive tasks. Requesters mainly come from the US but they can be located

anywhere. Originally workers could sign-up around the globe but this has narrowed over the years largely due to legal issues (e.g. in Europe AMT falls foul of labour regulations in many countries). Now the majority of workers come from the US and India, and it is these two groups of workers we focus on in this article.

The original idea behind AMT for Amazon was to have an efficient and cost effective way to curate the content of their vast databases (weeding out/repairing poor quality, duplicates or vulgar content). The basic philosophy of microtasking and AMT is to delegate tasks that are difficult for computers to do to a human workforce by decomposing larger jobs into many—often similar—microtasks (Figure 1 shows the homepage). This has been termed ‘artificial artificial intelligence’—as a reference to the fact that the human work is relatively hidden. Tasks like image tagging, duplicate recognition, text digitization, translation, transcription, object classification, and content generation are common. The typical HIT will take seconds or minutes to complete and is paid at a few cents at a time. Therefore, making any sort of respectable wage often involves doing batches of tasks (from 10s to 1000s) over periods of hours at the fastest possible rate.

For example, some of the most common HITs involve digitization of data (e.g. entering data from photographs of receipts or business cards into the computer to create a digital record, see Figure 2); checking addresses and details of businesses; tagging pictures and other content for university experiments or web optimisation (Figure 3); surveys; writing product reviews or transcriptions (Figure 4). Much of the work produces and processes ‘raw materials’ for a lot of the hidden organisation and curation of the internet.

Amazon runs the platform and has a set of rules but is very *light touch* in terms of regulation—essentially it positions itself as the facilitator for freelance employers and workers to engage with one another. This marketplace operates in a legal grey zone, subject only to minimal legal requirements. Its transnational reach (see Steger 2013, p37 for a definition and discussion) and the novelty of the services they offer contribute to this. There are some interesting parallels between AMT and other new technologically-mediated marketplaces, such as the new taxi providers Uber, Lyft and so on (see Ahmed et al. 2016, for a comparison of some of the core features of AMT and peer-to-peer taxi platforms). Just like Amazon, these platform providers, position themselves as facilitators of the market—connecting customers to drivers who are considered to be independent contractors or micro-entrepreneurs. For AMT and Uber and other similar markets, the role of the platform provider is deliberately positioned as sitting outside of the labour relationships, which are considered to take place between individual workers and individual customers (Raval and Dourish 2016). Like AMT, Uber has a disruptive global reach, circumventing national and regional legislation and thus also operating in a legal grey area. However, its self-portrayal as a technology provider and not an employer is not without controversy and is being challenged in court (Isaac and Singer 2015). As freelancers, similar to Uber drivers, Turkers do

Your AccountHITSQualifications

Introduction | Dashboard | Status | Account Settings

Mechanical Turk is a marketplace for work.

We give businesses and developers access to an on-demand, scalable workforce. Workers select from thousands of tasks and work whenever it's convenient.

74,968 HITS available. [View them now.](#)

Make Money  
by working on HITS

HITS - Human Intelligence Tasks - are individual tasks that you work on. [Find HITS now.](#)

As a Mechanical Turk Worker you:

- Can work from home
- Choose your own work hours
- Get paid for doing good work

Find an interesting task

Work

Earn money

Find HITS Now

Get Results  
from Mechanical Turk Workers

Ask workers to complete HITS - Human Intelligence Tasks - and get results using Mechanical Turk. [Register Now](#)

As a Mechanical Turk Requester you:

- Have access to a global, on-demand, 24 x 7 workforce
- Get thousands of HITS completed in minutes
- Pay only when you're satisfied with the results

Fund your account

Load your tasks

Get results

Get Started

Figure 1. AMT home page.

not enjoy anything like the legal protection offered to regular employees, since, for example, in the US freelance work is not subjected to minimum

Rotate Left

Rotate Right

Philip Waters  
Director of Sales  
303-456-2222  
phil.waters@abc.com  
123 West Rocky Drive  
Morrison, Colorado 80465

Complete HIT

If there is no text contact information, click the orange button below.

You get paid for either button if your decision is accurate.

No Contact Data  
Complete HIT

Submit Contact Data  
Complete HIT

Name

First Name MI Last Name

Company & Job Title

Company Name Job Title

Email & Website

Email Address Website

Social Profiles

Twitter

Skype

Add Social Network

Address

- Please Choose An Address Type -

United StatesOutside U.S.

I Don't Know

Phone Numbers

Work / Office Phone NumberExt.

Main Phone Number

Mobile / Cell Phone Number

Fax Number

Add Home, Pager, and Other

Figure 2. Business card digitization.



wage requirements. Turkers are generally a very low paid workforce<sup>1</sup>. Crowdsourcing can be seen as the newest form of global outsourcing, a technique that is often designed to take advantage of the wage arbitrage that is possible when people from different countries, with different pay rates and costs-of-living can be placed in competition with one another.

While Amazon is still a big requester, AMT has been deployed as a platform and connects a wide variety of Requesters with over 500,000 Turkers. However, Fort et al. (2011) have performed an analysis on the available data and suggest that the real number of *active* Turkers is between 15,059 and 42,912; and that 80 % of the tasks are carried out by the 20 % most active (3011–8582) Turkers. This makes good sense because in order to make ‘decent’, consistent money, Turkers need to invest considerable time in learning and developing skill-sets (Martin et al. 2014; Gupta et al. 2014) hence there are probably quite a lot of people who abandon AMT because they cannot make enough money.

In this article we examine some of the *everyday human impacts* of working in this technologically-mediated labour market. During our research examining the work and experiences of Turkers we noticed that there was a set of issues that workers report and discuss which focus on the transnational nature of the marketplace. In this paper we highlight these issues with the aim of uncovering how they impact on the work and working lives of the Turkers. That is, we describe how the different conditions of groups of workers in India and the US lead to different experiences of AMT which in turn impacts their reasoning about how the marketplace operates. One topic of focus is differences and disparities, both real and supposed. Our concern here is on how Turkers operate in and understand the marketplace as a whole, rather than on their specific work practices for doing HITs. Thus, we look at the *work* that Turkers do in trying to understand the functioning of the marketplace so they can operate more effectively within it; find good jobs, share tips and information, acquire useful skills, get paid, avoid penalties and so forth.

AMT is a perspicuous example for examining the impact of a transnational labour market on two groups of workers: the AMT platform makes the pool of jobs available, more or less equally, to anyone with an AMT account no matter their location. Workers therefore might be said to be in synchronous direct competition for jobs with one another, as opposed to in more traditional workplaces where such competition is mediated through management decisions (and is often experienced *en masse* and out of their hands, such as when a company decides to close down a facility and outsource the jobs to another country). What is the experience of workers when they confront these matters as part of their daily actions and interactions?

In the next section we discuss how our interest in crowdsourcing as a global marketplace relates to CSCW research into global work, collaboration and design. We then position our research within the literature on crowdsourcing. In section 4 we

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<sup>1</sup> See Felsteiner (2011) for a detailed examination of wages and the legal issues.

outline the method and settings of our multi-sited ethnography. In section 5 we detail the findings as a comparison between the two sites, looking at 1) various practical differences including accessing work, managing technologies and infrastructure, and getting paid; and 2) examining Turkers' reflections on operating in this marketplace. We finish with a discussion section which includes reflections on how this work relates to issues of globalisation, as well as activism and CSCW, before finishing with some design reflections about how to better support workers and intervene in the market to redress imbalances in power and agency.

## 2. Global markets and CSCW

The global reach of technologies and business has been of interest to CSCW for some time. Perhaps the most well-known early work is that by Olson and Olson (2000) on collaboration in global teams, with a proliferation of more recent research into global software development (Harper et al. 2013; Matthiesen et al. 2014; Söderberg et al. 2013). In this article, by examining crowdsourcing, we extend this concern to the global reach of technology-based *markets*. AMT is a technologically-instantiated crowdsourcing labour market in which the work is decomposed such that the work products of tens or hundreds of workers are combined to complete an overall project for the requester. However AMT does not afford direct collaboration during the work. Instead the requesters can set up various workflows within HIT design. For example, the work product of multiple workers may be combined at the end of the work, or the work product may be verified or checked by other workers – all without direct, knowing interaction between the workers doing consecutive tasks. That is, by design the platform eliminates active collaboration on work products. However, a lot of collaboration does take place outside of the platform through the various forums, Facebook pages and local groups which the crowdworkers form. Such groups contain multiple discussions about the work, including good HITs to do, as well as how to do specific tasks (Martin et al. 2014; Gray et al. 2016). In this paper we focus on a different aspect of talk in these forums, that is talk about the work situation: about pay, qualifications, how the market and the platform operates and so on. We therefore focus on the workers and the types of problems they have in successfully operating in AMT. We use this understanding to conceive of design possibilities to help them operate more easily and successfully. After all a major driver of CSCW research is the understanding that designing workplace technology with scant regard for the workers who must use it, the details of their work itself, and the conditions in which they work, tends to produce various problems in the viability of those systems (e.g. Schmidt and Bannon 1992; Suchman 1987; Sommerville et al. 1992). We contend that this is no less the case for crowdsourcing, and we consider how understanding crowdworkers troubles in operating effectively can facilitate ideas of how to design to support that work.

Design in the microtask crowdsourcing space is particularly complicated, in part because of the various actors involved—the platform owners, the requesters, the



workers—and their various interrelationships. In the case of AMT, the platform, which instantiates the marketplace, was created and managed by one entity—Amazon. It is used by hundreds of requesters to deliver HITs of their own design onto the market, and in turn it is accessed by thousands of workers, who select and submit their work through the platform. Recent research has begun to shed light on who these workers are and what this work looks like (e.g. Ipeirotis 2010a<sup>1</sup> b; Irani and Silberman 2013; Martin et al. 2014; Gupta et al. 2014). The design space in this case encompasses the platform and market design of AMT, the HIT design of many different requesters and the interface design for the workers, which might include various third party plug-ins to ease the burden of turking. The design task is not just difficult because of the conceptual complexity of the situation but also the practical complexity; to what extent is design supported or even permitted? An API (application programming interface) for AMT is only available for requesters but not for Turkers. Furthermore, the design of AMT may have been considered a largely technical enterprise but the result is in effect a labour marketplace which entails social, cultural, political and economic matters. As a consequence of this some of our design ideas (which we discuss at the end of the paper) can be framed as attempting *market intervention*. We aim to develop tools that allow individual Turkers to operate more effectively in the market by rendering it according to their needs and priorities (for example by restructuring the ordering of HITs on the Turkers' interface, enhancing search etc.). At first glance, crowdsourcing marketplaces look like a laboratory for examining the possibilities and potential of a 'free' global capitalist marketplace. The market for sourcing and producing work is digital meaning work can be available everywhere at once, with few constraints. Ostensibly the market operates by free choice—no one is physically forcing requesters or Turkers to work there, and they can choose who they work with and what jobs they work on. The principle suggests that HIT prices *should* be fairly regulated by the 'invisible hand' of the market—i.e. set by supply and demand—where workers can make *well-informed* choices on what to work on and wages reflect the value of the products and the scarcity of labour skills. For employers a key incentive is that there are less of the usual barriers and costs to sourcing labour globally. These costs include: negotiating legal requirements; renting, building, and equipping facilities; and recruiting and managing local workforces. For workers, the requirements for access are an account, a computing device, and an Internet connection. This could, in theory, benefit workers around the world as they can access work unhindered by geographical location. In practice however, the opacity of the market, scarce information, a lack of regulations and a variety of other issues produce a more complex, unbalanced and even unfair experience amongst the participants, one that reinforces the idea that truly free markets can only ever be a utopian ideal, since they seem to inevitably become weighted in favour of certain parties with e.g. more information, better connections etc. In this paper we highlight how some of these differences and issues are felt by the workers and in turn how they impact on their understanding of the marketplace in which they operate.

### 3. Crowdsourcing research

There is a growing body of research that seeks to understand the operation of the AMT market and the people who work within it. Survey-based demographic studies (Ipeirotis 2010a; b; Ross et al. 2010) show that the majority of Turkers (~50–60 %) are U.S. based, with Indian workers forming the second largest population (~30–40 %).<sup>2</sup> US Turkers are more likely to be female and are 30+ years old on average. Indian Turkers are more often male and a bit younger—26–28 years old on average. Both groups are reasonably well educated with the vast majority having at least some college experience. In November 2009 Indian Turkers on average earned \$1.58/hour, as opposed to \$2.30/hour in the US (Ross et al. 2010).<sup>3</sup> Over 50 % of Indian Turkers reported an annual household income of less than \$10,000, while 45 % of US Turkers reported one of less than \$40,000 (Ipeirotis 2010a; b). We do not know how much of these incomes are generated by Turkling and differential costs of living limit the interpretative power of direct dollar comparisons.

A deep understanding of the work of crowdwork is important ethically and socio-organisationally, since questions have been raised about the ethics and efficacy of current crowdsourcing practices (Bederson and Quinn 2011; Felsteiner 2011; Kittur et al. 2013; Silberman 2010; Silberman et al. 2010; O'Neill and Martin 2003). Felsteiner (2011) provides a comprehensive summary of research on workers and their legal situation, highlighting the legal ambiguities surrounding AMT, and workers' difficulties in ensuring fair pay, and recompense for bad treatment. Bederson and Quinn (2011) outline a series of design and policy guidelines to provide more transparency and fairness for workers, suggesting amongst other things that requesters should be clear about hourly pay, payment procedures and policies, and should offer grievance procedures. Kittur and colleagues (2013) consider how crowdwork might be developed technologically and organisationally such that it could be desirable and productive for both workers and employers. They recommend better communication between requesters and workers, and that opportunities should be provided for learning and career progression. Silberman, Irani and colleagues created a 'Turker's Bill of Rights' (Silberman 2010), which illustrated the issues faced by Turkers—primarily, unfair rejection of work, uncertain or slow payment, low wages, and poor communication (Silberman 2010; Silberman et al. 2010). Recently they have been involved in a project called Dynamo (Salehi et al. 2015) that attempts to support Turkers in an initiative to form a workers guild for organising various campaigns aimed at securing more workers rights.

Another strand of research which seeks to reveal 'who are the crowdworkers?' and what crowdwork looks like from their perspective, takes an ethnomethodological

<sup>2</sup> Ipeirotis offers more up-to-date and dynamic demographic and statistical data with MTurk Tracker: <http://www.mturk-tracker.com/#/general>

<sup>3</sup> "The current federal minimum wage is \$7.25 per hour." Source: <http://poverty.ucdavis.edu/faq/what-are-annual-earnings-full-time-minimum-wage-worker>



approach to these questions. Martin et al. (2014) analysed the posts of primarily US-based Turkers to the Turker Nation forum to understand the predominant themes of the forum—their reasoning about work, community, and Turker-requester relationships. The highest earnings reported by the Turkers were ~\$15 k per year, but this was rare. Their biggest concerns were to find good requesters (well paying, reliable, honest) and keep their approval ratings high. Approval ratings are part of the online reputation of Turkers and are made up of the number of HITs completed and accepted by requesters. A Turker's reputation is important because requesters can set tasks such that only Turkers with a good enough reputation can complete them, or set pay rates according to reputation. This study also brought to light the amount of unpaid work Turkers engaged in in order to search, learn, organise and so forth. Gupta et al. 2014, carried out an ethnography of Indian Turkers, which highlighted who the workers were, what work they were doing, how much they were earning, what their problems were, and how they managed their work-life balance. The study found a large variation in expertise and earning power that turned around factors like English and computer literacy, technology and infrastructure. Indian Turkers too faced the same issues around finding dependable work from good requesters.

Understanding crowdwork is also important from a design perspective. In the fields of HCI and CSCW it has long been acknowledged that a deep understanding of how work is actually done helps designers and engineers to build technologies to better support that work. This programme has been particularly supported by ethnographers and computer scientists working together (Crabtree 2003; Hughes et al. 1992, 1994; Sommerville et al. 1992). In another area—and one that is clearly pertinent to this paper—Khanna et al. (2010) describe an exemplary study of platform design for low-income workers in India, which explored the barriers preventing such workers working on mainstream crowdsourcing platforms. These included difficulties understanding the *intent* of tasks and complex instructions, user interface issues, and differences in culture (Khanna et al. 2010). The Kelsa+ project (Gawade et al. 2012) demonstrated that low-income workers with limited literacy in English and computers, have the potential to develop skills when provided with access to resources. Whilst our research speaks to such issues of HCI, instructions, and task design, we also hope to inspire reflections on the design, functioning and management of *platforms and marketplaces*.

#### 4. Method and settings

In this paper we draw on qualitative data from two in-depth ethnomethodological studies: (a) a study of content and interaction on Turker Nation, a forum featuring primarily US Turkers, and (b) an ethnography of Indian Turkers. We introduce new unpublished data, as well as providing a new analysis of data published elsewhere in country specific studies (Gupta et al. 2014; Martin et al. 2014), which we now treat comparatively. In doing so, we examine the effects of a transnational market on two key, globally separate constituencies. Work is available, more or less freely, to two

different workforces from two different countries, with rather different economic and social circumstances. We compare and contrast the Turkers' situations, their reflections on the marketplace and their understandings of one another. We take the approach suggested by Clifford Geertz when he talked about how we might understand social phenomena and social change in a globalised world, by looking at particular people in local circumstances (the 'splinters') in order to analyse and compare how larger systemic phenomena impact on them:

"If the general is to be grasped at all and new unities uncovered, it must, it seems, be grasped not directly, all at once, but via instances, differences, variations, particulars—piecemeal, case by case. In a splintered world, we must address the splinters." (Geertz 2001, p 220–221)

Also of relevance is Marcus' description of *multi-sited ethnographies* (this is what we are doing in taking a variety of naturalistic data from different settings). A multi-sited study like ours provides a means for understanding the impact of large-scale structural features of business and the economy on the local circumstances of different groups of people:

"Ethnography moves from its conventional single-site location, contextualized by macro-constructions of a larger social order, such as the capitalist world system, to multiple sites of observation and participation that cross-cut dichotomies such as the "local" and the "global," the "lifeworld" and the "system." Resulting ethnographies are therefore both in and out of the world system.' (Marcus 1995)

Recent work in CSCW (e.g. Blomberg and Karasti 2013; Bjorn and Boulus-Rødje 2015) has promoted and discussed the use multi-sited ethnography within CSCW. We see ourselves as contributing to this growing literature, including considerations of the role of the ethnographer in relation to participants and political matters that arise within their work.

In this case the two sites differ geographically but also in the data collected, as we now outline. Our ethnomethodological study (Garfinkel 1967) of the content of Turker Nation (Martin et al. 2014) began in January 2013, had its most intensive phase during the first 6 months but is still ongoing. It involved the meticulous reading of many threads to discern important topics for the members and to understand the way discussions unfolded. As our project has unfolded we have also had more direct interactions through the site and email with the Turkers. They seem to appreciate our efforts to make their situation visible in the academic realm, and feel that we give an accurate description of their circumstances.<sup>4</sup> The material in the forum centres a lot

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<sup>4</sup> [http://turkernation.com/showthread.php?21305-A-Paper-on-Turker-Nation-Oh-My!-\(Now-with-the-link-to-the-full-paper!\)](http://turkernation.com/showthread.php?21305-A-Paper-on-Turker-Nation-Oh-My!-(Now-with-the-link-to-the-full-paper!))

on sharing information that allows Turkers to learn about how AMT works and how to operate more effectively within it by sharing experiences and giving advice, opinions and evaluations. Posts reveal how members understand, discuss, and reason about AMT, requesters, turking, their lives, and their work.

Within this material we found a body of posts that related to members' understandings of how the global reach of AMT impacted their experience and created challenges and constraints. We conducted a thorough search through the forum to look for all relevant material on this topic. Most of our material is presented here for the first time (and material presented previously is analysed from a new perspective) and is a representative selection of what we found. It is important to note that topics related to the global nature of the market are not the most common topics but tend to arise in other discussions as a form of contextualisation. Our analytic orientation is ethnomethodological (e.g. Hughes et al. 1992: 1994), but here it is applied to on-line communication and interaction. This involves analysis of interaction as it is achieved through textual means, with a focus on typical ethnomethodological concerns such as the sequential unfolding and organisation of interaction, mundane reasoning, topic development and a consideration of *talk as work* (for background on this last topic see Boden 1994; Martin and O'Neill 2011). This work is not without precedent. Examples of related work include Thomsen and colleagues' (1998) position paper on using ethnomethodology to study online communities and O'Neill and Martin's (2003) study of conversational organisation in on-line social networking events. It should be noted that in studying the forum we are not getting access to *turking-in-action* but rather a set of activities that constitute the knowledge and information acquisition and sharing work that Turkers engage in to enable them to operate more effectively in the marketplace.

The second study of Indian Turkers was an ethnomethodological ethnography involving interviews and observations. We recruited a group of Indian Turkers through a survey HIT that we posted, that asked whether they would be willing to participate in our research. We conducted open-ended, semi-structured interviews through Skype, telephone and face-to-face. We asked participants about the various activities they undertake during crowdwork, their experiences of AMT, requesters, other Turkers, and asked them to demonstrate how they work using various artefacts (screen captures and recordings, emails, AMT itself). We conducted observations with Turkers in their place of work (e.g. homes, hostels, offices). In total, we had 35 interviews, and 12 observations. Our data therefore consisted of observations and recordings of turking-in-action, demonstrations of turking and the local circumstances in which people lived and worked. It contains a significant amount of reflections, and the sharing of experiences and opinions about what they understand about the market and how they operate within it. As with the forums, an *emergent feature* of the data was that a portion of it related directly to the impacts of working on this *global platform*. The emergence of these common themes from the two different studies was what made a comparison of data from the two constituencies both legitimate and interesting.

## 5. Findings<sup>5</sup>

As we described above, crowdsourcing marketplaces cannot in reality be free marketplaces despite embodying the concept of anytime anywhere work and AMT was neither constructed nor functions as a symmetric transnational market. The two constituencies experience it differently. Some of these differences are due to the market design and the requesters who take part in it, while others stem from the circumstances of the constituencies. In the following sections we describe how these differences impact on the working lives of Turkers. Of course it would be naïve to consider that the market is somehow experienced equitably even within a constituency. However, in this paper we present the material that most clearly differentiates the US and India. A point to note is that AMT is US-based and was initially designed for Amazon (later followed by other US requesters) to gain access to a large, low cost, distributed workforce. This means that tasks mostly serve US, English speaking businesses and academic research, which naturally skews this marketplace towards US concerns. Part of our analysis will look at how features of *design, policy, and membership create different experiences* for workers in each country. We will also examine how the different constituencies *understand this market*: what they think about the mostly US-based employers; what they understand about one-another; and how they understand (or not) the manner in which the social and economic conditions of the other group impact the functioning of the marketplace. Given the fact that AMT is opaque in many ways, we discuss the conceptions and misconceptions of the market and ideas about the *other constituency*. We also give some reflection to their understanding of the specifics (demographics, diversity etc.) of their own constituency.

### 5.1. Practical differences in the global marketplace

We begin with a description of the practical differences experienced by the US and Indian Turkers in our study. These differences set the scene for the rest of our findings and fall into the following categories: comparative pay rates and living costs, including currency fluctuations; job availability; fluency in English; infrastructure and technology; and payment mechanisms.

#### 5.1.1. Pay rates and living costs

The relative value of HITs in the two economies and the consequent earning potential is perhaps the most important difference. Since the cost of living is typically less in India, workers earning the same dollar amount in India are relatively better off. If you are a highly experienced and skilled Turker, you can make quite a substantial wage in

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<sup>5</sup> All the US Turker usernames have been changed apart from those of Spamgirl, taintturk and tigger (as we are in direct contact with them and have their permission to use their actual usernames). All the Indian Turker names are pseudonymous.

India whereas such Turkers in the US are mostly just surpassing minimum wage (~\$15 k/per annum). Conversely we interviewed an Indian Turker who earned ~\$10 k/per annum and could support his extended family household on his wages. This wage level is considered below the poverty line in the US<sup>6</sup>; meaning that in India, Turkers are not under as much pressure to optimise their working to make a good wage. This is clearly true in a banal fashion, simply due to the comparative costs of living. Indian Turkers will more easily and quickly attain a reasonable wage, especially when completing the same HIT at a given price and similar tempo. This wage differential and particularly the fact that it can be used to justify generally lower pay rates all-round (i.e. ‘people are willing to work for this amount so the market has decided it’s a reasonable wage’) is a well-known, and an oft discussed topic among Turkers. For example, one worker on Turker Nation, when discussing the published findings of a University research project that used AMT, stated:

“More than a third of the MTurk participants in our research reported being from a country other than the U.S.” \*sigh\* I can’t believe 25 people actually accepted making 4 cents/hour... no matter how low your cost of living.

Turkers in general, and particularly those in the US are therefore particularly concerned that the global reach of the market exerts this downward pressure on wages, making it increasingly difficult for them to make a living. However, it is important to remember, that for most workers, wherever they are based, turking is low wage work, and that *only* the most skilled Indian Turkers can earn a good wage. While Turkers from both constituencies endeavour to work on the highest paying jobs that they can find, our data indicates that the floor for acceptable pay is lower in India. This suggests that, based on pay alone, the pool of *acceptable* jobs (i.e. jobs that make any sort of fiscal sense in accepting) for US Turkers is somewhat smaller. When we add to this the fact that Indian Turkers also criticized low-paying HITs we get a measure of how low pay is across the board. For example Nidhi, a Masters student who completes HITs writing articles on subjects from dog breeds to international affairs, and blogs about products, complains of AMT:

I feel it’s the worst because they pay peanuts [...] and I somehow feel it’s an insult to the talent people have. But otherwise if you feel like I want to improve my skills for free of cost then you can join MTurk. But I don’t even think it at least offers nominal respectable human rates.

Without stronger legal protections the fact that people are desperate enough to accept ‘insulting’ wages works against pay improvements. Turkers (both US and

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<sup>6</sup> <http://www.census.gov/content/dam/Census/library/publications/2014/demo/p60-249.pdf> - page 43, \$12,119 for a single person under 65years of age.

Indian) also have other motivations for working on low paid jobs—primarily the need to boost their HIT count and reputation (Gupta et al. 2014; Martin et al. 2014). Hence very low paid jobs, such as business card digitization (entering business card details from a photo into an on-line form), are typically the province of new and less experienced workers, or are used as back-up tasks when preferred jobs are not available. Ironically, in order to try to get access to higher value work Turkers will take the type of jobs that push market values downwards.

Since pay rates are calculated in US dollars, currency fluctuations directly affect Indian Turkers but not US Turkers. Indian Turkers are issued with rupee cheques calculated on the exchange rate when they order them. This was particularly noticeable to us as the value of the rupee on the dollar was falling during our study of Indian Turkers, meaning that their work was essentially worth more. A homeworker from Orissa told us that she had started monitoring market rates and had withdrawn her earnings twice in the former months, in contrast with her usual behaviour of withdrawing a bigger sum once every 6 months. A handful of Turkers stated they were more interested in and actually speculated in, the currency markets now, due to the rupee's situation. This is interesting because working in a transnational market places you in a position where timing your payment transactions can have a real effect on your salary but also because this experience can have the knock on effect of increasing global awareness e.g. of currency markets—even in a few cases opening up currency market speculation for the workers.

### 5.1.2. *Job availability and market inequalities*

AMT also enables requesters to set worker eligibility according to region (e.g. “Location is US”), this can cause frustration amongst the Indian workers for example *tigger* on Turker Nation (a rare Indian-based Turker Nation member but who comes from Europe originally) asked about a creative job, “Why is the location ‘not India’? We are very creative people over here!” Sumita a housewife from Gujarat is particularly frustrated when such restrictions only appear after a HIT has been accepted:

Sometimes you accept the survey, but inside after you open it says that if you belong to India you cannot do it, but that is very bad—why we cannot do?

Whilst there can be perfectly legitimate reasons for restricting the market in this way, e.g. to select for particular constituencies of participants in surveys, it is experienced by some Indian Turkers as market inequality. This view is also fuelled by the opacity of some HITs that they find, and would like to work on, which show only “You are not qualified to work on this HIT.” There is no further explanation and it is not possible to view a sample HIT, leaving Turkers to wonder why this is so.

### 5.1.3. *Language*

Since most of the requesters are US-based, the majority of HITs are posted in English, with even visual HITs typically having English instructions. English is rarely the



mother tongue of the Indian Turkers in our study and this causes difficulties, such as getting HITs rejected through their mistakes, or they simply do not attempt HITs they consider beyond their ability. In general, higher paying HITs are more likely to require better English skills. Both constituencies are aware of the role English fluency plays. 25-year-old Indian Turker Bharat mostly works on image-based tasks and surveys, and when asked if he had tried writing tasks like article or review writing he said:

Oh no. I did not done single article-writing till now, because I am not good, fluent in English. They are checking grammar-mistake and all. Because I completed studies from schooldays in Tamil medium [language] only. But I have interest in writing articles. But it's very tough for me to write articles without grammar-mistake. But I am learning to do article-writing. Within 6 [months] or 1 year I can able to write articles, because by practice we can do anything. Practice makes a man perfect. I am practicing now.

Indeed for some of the US Turkers this was considered a considerable plus as Turkomitron posted:

Cost will always drive some work overseas, but some work demands native speakers of AmEnglish, or familiarity with North American culture. Companies are sensitive to consumer backlash, not so much as a political issue as because outsourcing can lead to ineffective customer service.

This is indeed a familiar refrain amongst US Turkers—the idea that better education, or at least better English skills and cultural familiarity may help them to redress the threat of wage undercutting. Of course, very similar hopes are held out by workers in terms of their skills and expertise and the threat of cheaper overseas labour in the regular job market but the extent to which this is successful is an open question. Firstly, there are pools of talent with good English skills abroad, and even with a fairly good cultural understanding with the reach of US television, music etc. And secondly, in the hunt to lower costs, companies are willing to take greater risks in the outsourcing market (Boden et al. 2009).

#### 5.1.4. *Infrastructure and technology*

Access to technology, bandwidth, and even electricity in India is frequently a problem for Turkers, due to cost and intermittent service. As discussed in Gupta et al. (2014) this impacts earning potential. HITs become impractical when they e.g. require high bandwidth. For example, Pandit initially worked on his Nokia E5100 using mobile Internet and experienced bandwidth problems. Furthermore, he could not open PDFs, precluding him from tasks that gave their instructions as attachments.

US requesters live in a (nearly) always-on world of high speed Internet and modern devices. This is another means for US Turkers to redress the balance of cost-of-living differentials, e.g. less time (hence money) is lost to technical frailties.

These requesters have little understanding of the problems faced by Indian Turkers as is wryly illustrated by Luke, who discusses the problems of completing HITs where the job is to label adult content with a slow internet connection:

They'll give only 10 mins. Within 10 mins you have to finish there is no other. Sometimes my net was slow when I was working, so I told—Please 5 more mins, loading takes time for me [...] They said—you'll be enjoying, we don't want you to enjoy, we want work.

Some Indian Turkers have multiple connection options to manage the routine troubles that arise. Rafiq, an ex-QA engineer from suburban India, primarily uses a broadband connection but also has two backup datacards, which together cost more than the broadband connection. He only uses them 1–2 days a month, but judges them cost effective as just one hour's work when the broadband fails covers the cost. It was not uncommon for the Indian Turkers to manage different configurations of devices and connections, which enable or constrain them depending on which tasks they try to do with which type of set up (e.g. a mobile phone is not the best device for doing a text intensive task).

Whilst both constituencies discuss having enough money to keep the network connection up-and-running, the discussions on Turker Nation rarely touch on managing access to and optimising devices and network connections. Instead they focus on finer-grained optimisation of their systems (e.g. fast keyboards, short cuts, and scripts) and their own speed; a stable, fast connection seems to be taken-for-granted. The speed of job throughput and completion is important for everyone but the way it figures in calculations of 'can I earn enough money to justify my work?' is more acutely felt for the US Turkers. Contrastingly, we saw such fine-grained optimisations through plug-ins and scripts only with the more experienced Indian Turkers with faster network and device setups (what one might call the basic infrastructure). The majority of Indian Turkers were concerned with either optimising this basic infrastructure or 'making do' with what they have by adjusting which tasks they accept, and when they do their Turking. Of course, if the main drag on your efficiency is a slow connection or device, there is less to be gained from installing plugins and so on. It is important to note that while for both many US and Indian Turkers there is the work to set up an infrastructure (Internet access, computer, scripts, peripherals etc.), it is far more common for Indian Turkers to have the additional on-going work of managing a far more fragile infrastructure.

#### 5.1.5. *Time zones*

In a globalised market, people will be living and working in different time zones, and in AMT one might imagine that this does not present any problems, as work can be done anywhere, anytime. However, due to the relative scarcity of good jobs that are generally released (and quickly completed) this actually impacts both workforces. Indian Turkers perhaps suffer most, having to work regularly during the night, since jobs are mainly released during the US working day (Gupta et al. 2014). However the

diverse time zones and irregular working hours of requesters in the US means that US Turkers also experience these problems, as we can see in suzyj's post:

Oh god I hope [they don't post jobs too late]....I cannot stay up all night working without chancing falling asleep the next day and my 3 year old burning the house down around me as I recover from vampire turking.

Predictability seems to be the most important issue. Some Indian Turkers have constructed networks of contacts to be alerted when jobs come in, even if they are sleeping (Gupta et al. 2014), and there are apps that can be set up to trigger an alarm to wake up Turkers when particular work becomes available. The market may be open-all-hours but this does not mean that quality work is available at all hours. Rather, Turkers need to be *flexible* to market fluctuations to get the best work. This has an interesting resonance with other research that looks at flexible working conditions that are sometimes heralded as of clear benefit to workers but often just end up being a means to coerce people into working at times that were previously sacrosanct personal time (e.g. see Crary 2013). For example see Bourne and Forman (2013) for a discussion of *flexibility* and a study on how female small business owners tend to arrange their lives around their work, even though they put forward flexibility as one of the benefits of owning their own business. In order to reduce uncertainty and the need to be beholden to the vagaries of the market Turkers (and requesters alike) often seek stable working relationships. This is most obvious through the qualification system which requesters use to assess and filter Turkers, often with the goal of selecting a relatively stable workforce. Indeed, our studies have shown us that there are sets of more conventional, less anonymous, more stable working agreements going on 'under the hood' of AMT.

#### 5.1.6. *Payment mechanisms*<sup>7</sup>

Different constituencies are paid in different ways. In the US, Turkers receive electronic 'cash' in their Amazon accounts which can be transferred directly to a bank account. In India payment is by rupee cheque, which must be sent to an address in India, and can take weeks to arrive. Perhaps unsurprisingly, our data (see below) from both Indian *and* US Turkers shows that *speed*, *tracking* and *security* are all better for electronic payments and are experienced as such. The Indian postal service is not that reliable and addresses can be imprecise, especially outside of major cities. This means there is uncertainty about when and if a cheque will arrive. Over and above this, Indians can have trouble fully registering for AMT, due to not having the right official documentation (which is quite common especially amongst the poor), and in this case the only available payment option is Amazon vouchers.

<sup>7</sup> Suddenly Amazon made electronic payments available to Indian Turkers in March 2015, in a move that we welcome, finally redressing this asymmetry: <http://www.mturkgrind.com/threads/mturk-earnings-withdrawal-transfer-options.27510/>

Indian Turkers described the insecurity that came with not knowing when a cheque will arrive since there is no way to track where it is and it can be rather slow. Bala a full-time Turker from a town in Tamil Nadu describes payment by cheque as being her only issue with AMT:

We get an email saying we are going to get a cheque—all that happens perfectly but since we can't track it we don't know where the cheque is, when we'll get it in our hands, this makes us feel very stressed, nervous and anxious. We are taking pains, working hard to earn money, whether its day or night, [...] we feel that the cheque is delivered through very unsecure means.

Jamal from Trichy, also in Tamil Nadu, describes similar concerns “Daily I am calling to postman ‘did I receive any airmail?’ he told me ‘no sir, today no post.’”

There is good reason to worry as occurrences of lost cheques are frequent and there is concern that incorrectly delivered cheques could be falsely cashed because many people in a neighbourhood can share the same name. When cheques do not arrive, Turkers must wait six weeks before a new cheque is issued. Furthermore, this second cheque is issued according to the exchange rate on that day. Sumita a housewife from Gujarat told us how she lost 400–500 INR (Indian Rupees) when a second cheque was issued due to difference in conversion rates. Even once the cheque arrives cashing it can take more than 5 days if a branch of Citibank, the bank AMT uses, is not available in the town where the Turker lives. This clearly adds further insecurity (you cannot guarantee when you will receive the money) to already insecure work. To get round such problems some Indian Turkers, such as Salim, a full-time Turker, set up a ‘system’—with a more dependable (city) delivery address, the aid of a friend/relative and cashing it in a branch of the issuer (Citibank)—in order to both streamline the process and make it more reliable. While the problem was clear for all Indian Turkers, of added interest is the fact that it also merited discussion on Turker Nation amongst primarily US Turkers:

*Spamgirl*

The answer is—they've been trying for 7 years, but it's so complicated that it's next to impossible. And Indians don't get paid to a bank account FWIW, they have to pay a FEE to get a cheque mailed to them, and half the time it's lost in the mail.

mandalay (location England)

I'd be happy if they gave Europeans the chance to get a cheque in the mail, lol i'd gladly take the \$4 hit. [...]

*mijote*

Yes, this is so unfortunate for those outside the US. I have a friend in South Africa, and the current payment system totally deters her from turking. I felt bad for

telling her about it after she told me about that. She's in desperate need of work and a good worker.

*fresno*

Seems like someone should set up a company to speed the process.

Have foreign users set up requester accounts and create hits that only the shell company can access through a specific cert.

You cruise through fifty dollar hits that are instantly approved and then wire to your account in India using something like Xoom.

From that account you can send out cash within India.

This is an aspect of the global marketplace with in-built asymmetries that has been made *visible* to Turkers in different locations and even the US Turkers who are untouched by the issue feel sympathy and even tried to come up with solutions to this problem.

#### 5.1.7. *Two sides to every coin*

We started this section with a major difference between the Indian and US populations—the wage differential. That is, wages from AMT have more earning power for Indian Turkers than US Turkers *doing the same work*. While this restricts the number of fiscally acceptable jobs for US Turkers, Indian Turkers experience other barriers including English language fluency, technology and infrastructure, and the blanket restrictions that some requesters put in place. These barriers can prevent the Indian Turkers from being *able* to complete the same work in the same time. Whilst, perhaps one would not expect an equal playing field it is important to reveal the details and subtleties of how the various aspects play out if we are to consider how to design for an ethical global marketplace, that is, for one which attempts to be more equitable. Conversely, if we are not interested in fairness, a global market is a good vehicle for the market maker to create more value for themselves by exploiting legal loopholes, opacity, and wage arbitrage.

We now consider how the different populations of Turkers reason about the marketplace and one another.

## 5.2. Turkers perception and understanding of AMT as a 'global' market

There is an interesting tension in the AMT marketplace between *transparency* and *opacity*. AMT and its requesters are notoriously opaque, that is, there is very little official information available on the policies of either and how they make decisions and direct communication with Turkers is often rather limited. In fact, a key principal

of crowdsourcing, instantiated by AMT is anonymity. Requesters have no obligation to reveal how they operate (e.g. how differential pay scales or qualifications work) and may be discouraged from doing so by the concern that transparency will enable scammers to game the system. Adding fuel to speculation is the contrasting high level of transparency that comes from Turkers being able to view many jobs and their requisite qualifications and pay scales, even if they are ineligible to undertake them.

As we saw with the Turker Nation discussion of differential pay mechanisms, discussions on forums and other groups make various characteristics of turk-life at home and abroad visible to other forum/group members. Furthermore, AMT has been the subject of much research, journalism and blogging. Certainly the fact that the major workforces reside in India and the US is well known amongst Turkers. By a mixture of *necessity* (it is almost impossible for any worker inside the system to understand the entire system from within) and *design* (AMT deliberately obscures its policies, presumably to avoid questioning, appeals etc. which would be costly to administer) Turkers have an incomplete picture of the marketplace, how it operates and who (both workers and requesters) operate in it. In this section we examine the hypotheses, accounts and rationales that Turkers construct in the light of this limited information. We start by examining how Turkers reason about their relative working conditions. We follow this by describing how turk-work is regarded in the different economies and the Turkers' reflections on this.

### 5.2.1. *Dealing with opacity*

When we look at the hypotheses and rationales Turkers construct, e.g. on AMT, requesters etc., in the light of limited information we note that often we cannot always adjudicate as to their truth, because we do not have access to all required information. However, for our purposes here, it does not matter whether this reasoning is correct or not, what is important is *how* the workers understand how the market plays out since such 'understandings' can motivate action.

#### a) *Making sense of HIT availability and access*

We described above how requesters can introduce restrictions on who can work on a task by region. Further to such restrictions, many of the Indian Turkers in our study described their frustration at what they believed were hidden inequalities in the system. For example, Rafiq describes why he believes there are location based differences in pay and HIT availability:

I know that U.S people have more maximum number of HITs compared to us. I know that. Second point is, I know that US people has a very good source of earning a lot in surveys rather than us. If we earn \$5 in a day through surveys, the same thing the U.S people can earn \$20-\$30 in a day in surveys [...]. Sometimes we sit idle.



While Rafiq is right that there is a wider selection of particularly survey work that US Turkers qualify for on account of their location and that there are some cases of differential pay based on location he then moves into conjecture over wages.

b) *Making sense of AMT qualifications*

Speculation on hidden inequalities in the market also occurs in relation to the Amazon Masters qualification. This qualification is issued by AMT, but it is unclear to Turkers on what basis it is issued. In the first two quotes from Turker Nation we can see some US responses to the question ‘how do you get a masters qualification?’

evelynonline:

[...] It is a random lottery give away that some of us attained with no clue how. We work for the same money as non-masters, but the requesters pay more to list so in essence, no one really gains anything extra. Every once in a while we have less competition on certain jobs [...] then again sometimes not. [...]

olaf72:

Dont know how i was “lucky” enough to get all three master qualifications on January 2nd, but somehow I have been revoked on all master qualifications today, Guess the 4 days of no captchas<sup>8</sup> was fun while it lasted. The reason for my revocation stated: Revoke Reason: No comment provided by Requester. Wish i had not of even gotten any qualifications in the first place if they are just going to be revoke for what seems to be no reason. Guess My nearly 1.98 million hits approved with a 99.9 % approval rating does not make me a “Master” Worker.

Just like the US Turkers the Indian Turkers do not understand how the Masters qualification is achieved and some similarly attributed their inability to achieve it to the randomness or general unfairness of the system. Rahim, a graduate full-time Turker says:

We all want Masters qualifications. We have read about it on forums etc. but we don’t know how to get it. We just keep doing good work, variety of work with consistency in the hope of getting it one day.

Another Turker, Aman thinks that if he continues working and achieves a 100 % HIT approval rate, he will be awarded a Masters’ qualification by AMT. However, an

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<sup>8</sup> One of the clearest benefits of the Masters qualification is that Turkers do not have to complete captchas on many tasks that usually require them – this saves quite a lot of time over repetitive bulk HITs.

alternative rationale was that this is actually due to a hidden inequality in the marketplace, that Indian Turkers are not eligible. Rafiq asks, “Why are we not allowed to do Masters?”

Whether there is hidden inequality or not in the Masters qualification both populations of Turkers expressed considerable frustration at the lack of clear guidelines on how it could be achieved or revoked. Incidentally, such frustration was also expressed at other instances of restricted information, such as the reasons for *account suspension* and *banning, rejection of HITs*, etc. The opacity of the marketplace and the lack of clear rules is a source of frustration for the workers and it creates an opening whereby Amazon is not forced to treat people equitably (or at the least it leaves them open to such suspicions).

### 5.2.2. *Workers concerns about the global market*

There is a widespread concern and common discourse amongst primarily US Turkers on Turker Nation that workers who choose to accept low-paying work force pay-rates downwards. Due to their understanding of disparities in cost-of-living Turker Nation members often implicate Indian Turkers in discussions of this. This is combined with concerns about poor quality work from foreign workers, which can both drive down wages further (as requesters double or triple up on each HIT as a means of verifying that e.g. image tags or questionnaire answers are genuine results rather than automatically generated spam) and threaten the market altogether.

A good example is this post of Spamgirl discussing a blog:

An excellent article (<http://turkrequesters.blogspot.ca/20...ical-turk.html>) touches on this issue in order to provide requesters with the truth about mTurk. A “constant stream of complaints to Amazon about the poor quality of work from international IP addresses” has caused Amazon to block anyone from outside the US to register for mTurk in the last few years. These are exactly the people who are willing to work for less than minimum wage, and therefore your workforce if you plan to post HITs at that low price point.

We should say that the reason AMT has stopped workers outside the US registering is not known, indeed nowhere does AMT say that they have done this. Some dispute that it has in fact happened,<sup>9</sup> although the consensus among Turkers is that only US-based applicants can get new accounts, although most existing Indian accounts remain open.<sup>10</sup> The case of Aman is a nice

<sup>9</sup> <http://turkrequesters.blogspot.fr/2013/01/the-reasons-why-amazon-mechanical-turk.html>

<sup>10</sup> Although at the time of writing we have heard of considerable rumours about the widespread closing of Indian accounts. Unfortunately the lack of transparency at Amazon means it is impossible at this stage to verify this.

illustration of these matters as he recounts his ‘investigations’ that have led him to conclude Indian account registrations are not accepted. However, there are still ways around the system:

So they replied saying we don’t have a demand for these (Indians) [...] but they don’t actually say ‘Indians’. Mainly, it is from this country. [...] See, I made a fake ID from US (with addresses of his Uncle and Aunt), then they accepted that ID. Then I made another ID from India with a different name, with my brother’s name, they rejected it. It’s written in there that we don’t need you, you are not compatible at this time, when you become compatible for this thing then we’ll mail you.

Various accounts have been provided about the reasons for blocking new Indian accounts, including tax and labour laws. However, the reasoning that AMT is concerned that ‘foreign workers’ produce poorer quality work than US workers is a popular one. In such broad brush accounts there is a tendency to *generalise* along national lines based on what (little) knowledge is available, such as non-US IP addresses equal poor quality work. It is very difficult to get a clear view on this but in our research we came across considerable numbers of genuine workers in both countries. Also, there is no evidence the number of *scammers* is higher outside the US. However, certainly the number of people who do not speak *English as their first language is* (which can cause a variety of quality problems from understanding instructions to completing work in good (American) English). Such generalising accounts do not acknowledge the real diversity and complexity of the situation and penalise the careful, skilled, genuine workers. In reality there is as much variety in the Indian workforce as in the US, as we found in our studies. Wage itself, could be as much, if not more, of a factor in poor work quality as location, since very low wages are likely to attract the less able workers in any market.

A major concern of genuine Turkers is the amount of poor quality work and scammers who bring down the overall quality of work and have knock-on effects for the good workers. This is of concern to both the Indian and US Turkers in our studies. For Rafiq, an Indian Turker, his concerns about poor quality work are tied in with concerns about genuine workers who have made mistakes getting suspended automatically.

Give security to us. Make us hope that we will stay for a long time in mTurk and personally I am suggesting to remove the low-quality workers but their suspension criteria is an automatic system, so make manual checks on most of the low-quality workers.

For the US Turkers, concerns about poor quality work are frequently tied in to dialogues about international or Indian workers. *aleppo* posted on Turker Nation:

What a surprise Every MMO [massive multi-player on-line]<sup>11</sup> site I've ever been a part of has been overrun by people from India. It's not a bad thing, of course, except for the language barrier and the presence of computer farms, where employers force their employees to do MMO for them and the employees end up with even a smaller pittance than you usually get from most MMOs.

It is rare that US Turkers directly flame or criticize Indian Turkers *per se* on Turker Nation (however Indian IP addresses are now banned from the forum<sup>12</sup>) but problems with 'language' and 'sweatshops' are seen as things that lead to poor quality work and at times are lumped together with spammers writing scripts. Turkers in both constituencies can react to their own frustrations by picking up on problematic issues in the other constituency and applying them widely. It is important to note that *amaeru* expresses sympathy in the post for the exploitation and the '*smaller pittance*' in wages of Indian workers – it is part of a global problem of pressure on wages. Worker exploitation is probably the largest concern, but this leads Turkers to see how the global dimension can lead a race to the bottom. Again, a lack of transparency or clear rules feeds into an adversarial mind-set fostering competition amongst Turkers and undermining cohesion and collaboration particularly across national and cultural boundaries.

Indian Turkers themselves can be concerned by the poor quality of work that can come from attempting tasks with a limited comprehension of them. Luke, for example, a 23-year old full-time Turker from Bangalore says:

I can see through the forums that Indian Turkers do work without understanding the tasks or do them "simply" (just for the sake of it). They don't understand the damage it is causing to us, our reputations.

Luke's concern can be seen to be not just about damage to the marketplace as a whole but also to the *reputation* of Indian Turkers in this marketplace. He tries to get in touch with Indian Turkers based on their questions or responses he sees on the forum to advise them, to share new tasks or requester information with them. Over the past few months, he has made a couple of contacts through Turkopticon, but the

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<sup>11</sup> MMOs provide significant commercial opportunities (selling virtual currency and items). It has been reported that in e.g. India and China people work to accumulate these under duress so they can be sold to other gamers to profit 'ringleaders'. *Aleppo* suggests something similar may be happening with AMT.

<sup>12</sup> It was reported to us that a steady flow of unreasonable requests (i.e. find me good HITs, get my suspension lifted) accompanied by some abuse had led to a blanket ban [personal communication from Turker Nation admin]. It seems that this was a product of misunderstanding on some Indian Turkers' part (that the forum had an influential relationship with AMT, that US workers did not need the money so much).

majority of Turkers that he gets in touch with simply ignore him. In our observations, we saw genuine workers desperate to make some extra income, attempting tasks that were beyond their comprehension. We are sure that this must also happen with US workers and we are certainly not suggesting that all US Turkers have English as a first language. However, as we have previously reported we also saw the care and attention that many Indian Turkers put into being sure they did not complete tasks beyond their abilities, e.g., completing entire surveys to ensure they could answer all the questions before accepting the HIT and thus risking losing it (Gupta et al. 2014).

### 5.2.3. *Images of turkwork*

What does it mean to be a Turker in India and in the US? When US Turkers talk about turk-work their discourse is frequently negative, for example, bringing in concepts such as a ‘*global digital sweatshop*’ and comparing it to other relatively low status work such as *exotic dancing*, *car washing*, *flipping burgers*, or being ‘*digital farm labourers*’ (all terms used in real posts). As the following Turker Nation post by taintturk details:

...We are the digital farm workers of the future.

Agricultural jobs are exempt from minimum wage guidelines. Workers are paid a small hourly fee and in order to make a living wage, they have to work hard and pick “x” amount of bushels or quarts or whatever to earn a living.

If they don’t work hard, they are not paid. They roam from farm to farm doing different tasks trying to eek (*sic*) out enough money to feed themselves.

The low wages mean that turk-work is relatively low status in the US. In India there are some higher status features of the work: the pay is relatively better and working for US companies (and on a computer) infers a degree of status. AMT is useful for Turkers who use it as an alternative income channel. During our interviews Indian Turkers who were students told us AMT helped them become independent and earned them respect in the eyes of their families. Some made enough money to cover everyday expenses of travel and food or to save for the future. Twenty-one year old engineering student from Chandigarh, Aman, earns ~18,000 INR from AMT every month, enabling him to contribute to the household income even though he is a student. He and his family are happy about this. He is even relieved of his household duties so he can concentrate on his studies and AMT. He is also able to save money for a networking course he wants to do and for employment exams he plans to take.

At the same time, it is not all rosy. Homeworking does not have high status in India and many of the Indian Turkers were just doing it until they

got a ‘proper job’ (Gupta et al. 2014). Full-time Turker, Bharat’s parents have told him:

You have to search for the good job, that is, I have completed engineering so you have to search for jobs in your stream [i.e. field] [...] But, I am working at my home and doing this. They also like this, but for in future, they want to get me working from my stream.

Thus for both populations it is something of a *make-do job*. That is not to say the Turkers do not appreciate the work and in both countries some Turkers are relatively happy with flexibility it gives, but many are doing it for lack of something else better paying and more reliable. It is also worth noting that work in general in India is more precarious and has less legal protections while corruption and exploitation of workers is a more pronounced problem. Things are always relative, and in relation to this background AMT does not look so bad, but from a Western perspective that is not a ringing endorsement.

## 6. Discussion

In this paper we set out to examine how workers on AMT experience working in a marketplace that in principle should not have barriers according to country. In reality marketplace conditions are not the same for everyone and this is true both within and between countries. Early on in AMTs existence, legal discrepancies and challenges shrunk its global reach to a more transnational one, operating openly only really in the US and India. Whilst our data certainly shows discrepancies between the earning potential of experienced Turkers and novices, there are marked differences between countries, some of which stem from features of AMT and choices of requesters and some might be considered structural differences between countries (cost of living, infrastructure, etc.).

### 6.1. Opportunities and obstacles

We have shown how differences in cost of living, infrastructure, payment mechanisms, time zones, language and learning play out for the US and Indian Turkers. For Indian Turkers a lower cost of living means a wider range of HITs are attractively priced but this is often off-set by obstacles like technical infrastructure that prevents them doing the same work at the same speed. The market is also skewed—it largely consists of US-based requesters, jobs tend towards US-centric, most are posted in English, surveys often sample from a particular demographic (more likely to be US-based respondents) and so on. This is understandable but it means it lacks a global diversity of jobs thus limiting the range of jobs available to Indians.

Turkers engage with questions that relate to topics to do with the global reach of the market, but in general they do so in a *local and personal sense*. Whilst some



Turkers are interested in the bigger picture the majority touch on these issues as they are understood to affect them in the details of working on AMT. For example, when searching for explanations to make sense of how the market is operating (e.g. what HITs are available to them) or how policies are being applied (why payment mechanisms differ). While many of the concerns are shared across workers (e.g. finding good work, consistently, and avoiding bad requesters) our findings also show divergent trends. For Indian Turkers, discussions of the global market tend to centre on real and perceived inequalities in access to jobs and pay scales and tend to stem from ideas about US control and bias, which in a number of cases rest on a lack of comprehension. For the US Turkers discussions centre on other themes: how the global reach is used to drive down of pay, the skills gap between countries, maltreatment of workers, and concerns about how poor quality work from international IP addresses may devalue the work in general and lead to less respect for the workers.

## 6.2. Transparency and opacity of the marketplace

At a surface level AMT is quite open: it is a marketplace in which Turkers from both countries can compete for jobs, all of which are visible, at least in overview, to the entire workforce. However this also makes it clear to Turkers that they are not eligible for all jobs, but not necessarily why. Discussions on forums, social media and blogs often provide some clarification of the situation but can also cause confusion. There are perfectly legitimate reasons for restricting access to jobs by population e.g. to select for particular skills or demographic constituencies of participants but if it is not explained it can be experienced as market inequality. All Turkers are concerned with inequality of access to HITs but US Turkers do not frame this as a question of inequality springing from their nationality.

In contrast to this *surface* transparency, the deeper *functioning* of the marketplace is largely opaque to the workers. AMT's practices and policies are largely obscured, as are those of many requesters. This leaves Turkers to do their best to explain the phenomena that they encounter but often on quite partial evidence. We can take the example of the Masters qualification. Whether there is hidden inequality or not both populations expressed considerable frustration at there being no clear policy on how it could be achieved or revoked. Similar frustrations were also expressed at other instances where information was scarce. The opacity of the marketplace is a source of frustration for all workers and, as has been reported elsewhere (Felsteiner 2011; Silberman 2010), it puts the balance of power in the hands of AMT and the requesters. We have revealed Turker reasoning around these matters and the frustrations and muddles these bring. We argue for greater transparency and changing elements in policy and design that are clearly problematic. This would be a key starting point for redesign if Amazon wanted to attempt and make things more equitable.

### 6.3. Globalisation, crowdsourcing and CSCW

We have described how the AMT market is experienced by and reasoned and communicated about by Turkers in two different countries—India and the US. This *work* is undertaken to facilitate more effective operation in the market (e.g. by choosing what to learn, what HITs to do, searching more effectively etc.). We argue that AMT is an instance of a growing trend in disruptive technologically-enabled labour markets that relates to the phenomena of *globalisation* and its academic study.

Globalisation is commonly and simply defined as increased global trade along with its enabling flows of labour and money. Whilst it has been going on for thousands of years it accelerated rapidly in the 19th century in the age of industrial imperialism, primarily driven by the European powers. This period was effectively ended by the mutual destruction that happened during World War I. A second wave of intense globalisation began after World War II, accelerating more recently with increased technical innovation, international cooperation and free trade agreements, creating globally operating markets, widespread opportunities for multi-national companies and so forth. Technology has always been a driving force in globalisation, particularly in terms of transportation and as a means for conducting commerce and supporting communication; from transport modes and the infrastructure they rely on, to means for safely and securely transporting goods, to the infrastructure and communication that embody and support trade. In this more recent, second wave,<sup>13</sup> digital information and communication technologies have been increasingly incorporated in globalisation.

A lot of work has drawn attention to the fact that globalisation has been primarily focused on serving the needs of business over workers and society in general. One of the leading theorists of the last 25 or so years has been Saskia Sassen (e.g. 2007; Robinson 2009), whose work has concentrated on certain powerful aspects of globalisation, particularly the rise of *global cities* such as London, New York and Tokyo where global financial markets, industries and producer services (i.e. secondary services to these sectors) cluster, concentrating wealth. A secondary feature of these cities is the fact that they attract *mass migration* from poorer countries often to work in the low paid menial sectors of these cities' economies—cleaning, construction, transport, catering, etc. Across sectors, these cities, and others like them attract a multi-cultural workforce, at the top and bottom while exhibiting very large earnings gaps between rich and poor, very high housing costs and so forth. Undoubtedly these are major trends in globalisation but not the whole picture. Sassen is clear that financial markets are a key part of globalisation trends but she also draws attention to the role of technologies and technology companies, outsourcing and off-shoring. For example, in regards to the relation between mass migration to global cities and off-shoring she notes that the “growing concentration of immigrant labor in service

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<sup>13</sup> Source: State University of New York, Levin Institute: <http://www.globalization101.org/what-is-globalisation>

jobs in the developed world can be viewed as the correlate of the export of jobs to the Third World” they are the “systematic equivalent of offshore proletariat” (Sassen 1998:53). Companies access cheaper labour in the developing world through offshoring, and migrant labour from the developing world arrives in global cities to carry out the low paid ‘dirty work’ generally avoided by the native population. Sassen also talks about the phenomenon of the “virtualization of economic activity” (1996) as more economic activity takes place in digital space, where territorial jurisdiction lacks power. We believe that our research fits with and adds detail to Sassen’s work on these topics; it is not just *financial markets* that play a part in globalisation, *global digital labour markets* like AMT represent a different and growing trend, because labour can be accessed across borders cheaply and easily. AMT accesses poverty line workers in the US and an offshore proletariat in India, at the same time, and this places particular downward pressure on wages without the framework of protections of traditional labour laws.

While currently globalisation may be configured to prioritise capital it is clear that the human impacts, good and bad, are also crucial, and should be understood. To quote David Held and colleagues (1999):

“Globalization may be thought of as a process (or set of processes) which embodies a transformation in the spatial organisation of social relations and transactions—assessed in terms of their extensity, intensity, velocity and impact—generating transcontinental or interregional flows and networks of activity, interaction and the exercise of power.” (Held et al. 1999)

In line with this, we have considered how this new form of global digital labour market works in a particular instance. How are things understood and experienced by workers in a marketplace where they directly compete for jobs? What are the local understandings of a global phenomenon (Geertz 2001)? Whilst the global availability of HITs gives a degree of equality to Turkers across the world in competing for work, we have described how inequalities and problems are experienced within and between communities of workers. Turkers turn to some of the common topics of globalisation discourse (wage pressures, inequalities in access to work, skills differentials, worker rights, lack of legal protections etc.) to understand and make sense of their work and the market conditions in which they operate.

Some sources dispute the link between globalisation, wages and competition from low wage countries through treating legislation and technology as separate impact factors. A recent OECD (the Organisation for Economic Co-operation and Development) report looking at globalisation and employment (Huwart and Verdier 2013) reached the following conclusion:

“Even though competition from low-wage countries has some negative effects on employment in OECD countries, the link between globalisation and job losses is less obvious than it first appears. In times of economic shock such as the recent

recession, globalisation seems to create more jobs overall than it destroys. Likewise, the total increase in wage inequality of the past two decades seems more linked to technology and legislation than globalisation—which does nevertheless undeniably contribute to increased job insecurity in some cases. The challenge is to help the “losers” of globalisation stay in the race and seize the new opportunities offered by openness to international trade.”

To us this analysis is problematic, particularly in terms of the idea that somehow the effects of globalisation can be separated off from technology and legislation and that it therefore should not be particularly implicated in wage pressures. Much research shows (and our study reinforces) that these three elements are bound together in such a way as to create a series of impacts on the working lives of people—their wages, and their working conditions—that is currently set up in favour of the interests of business (or capital) over labour. Of course, this does not mean that a different form of globalisation is not possible.

Focusing on AMT, this global market requires state-of-the-art technology to function and the work itself is often about the optimisation and curation of the internet. The technology gives Indian Turkers access to at least some jobs which they would not otherwise have access to, even if it also leads to experiences of inequality and frustration. The technology also, however, facilitates a general downward pressure on wages by placing workers with different living costs in direct synchronous competition. Discussions on requester sites often centre on the minimum pay levels required in order to receive satisfactory work rather than anything to do with ethical levels of pay.<sup>14</sup>

When it comes to legislation stronger employment protection laws generally keep wages higher but it has been argued that this serves as a barrier to e.g. attracting foreign investment. Ideas about the right level of legislation also depend on your political persuasion but few would argue that there should be no legislation covering a labour market at all. However, the fact that AMT is both global and technologically novel means it operates outside of a clearly established legal framework. As Felsteiner (2011) describes, innovations in technology, as they relate to labour are often not covered well by existing national law. The law takes time to catch up. When you add the complications over jurisdiction that comes with transnational markets, commerce and so forth, this means that legal protections for workers are minimal or absent. As our study emphasises relying on the good will and fairness of employers and market organisers in the absence of legal protection is hopeful to say the least.

Therefore, this current incarnation of globalisation is both fuelled and supported by technology in many ways and is intricately inter-linked with legislation. ‘Digital’ work can quite easily cross international borders (Kuek et al., World Bank 2015) and thus go global taking advantage of (at least temporary) legal loopholes and

<sup>14</sup> <http://turkernation.com/showthread.php?8027-Must-read-for-turkers!-Guideline-for-requester-pay>

asymmetries between countries. Outsourcing and offshoring already often exploit wage and legal differences to lower costs as multinational companies typically adopt working conditions in line with the minimum legal requirements in each country (rather than say applying the best conditions globally). Crowdsourcing as practiced on AMT generally accentuates this trend further against the workers.

The deep implication of technology on work in global markets like this makes this a relevant topic for CSCW research. Design in this case is certainly not agnostic. It directly impacts on how the market is experienced and on communication, collaboration, and competition. One way in which CSCW has already taken ‘the global’ as a topic is through research into global software development (GSD) (Harper et al. 2013; Matthiesen et al. 2014; Söderberg et al. 2013). This work—looking at global workforces within and across enterprises—has highlighted the impacts of time, language, and cultural differences on cooperative work, including examining how ethical and emotional matters play out in these settings (Harper et al. 2013). Whilst we find some similar issues, the instantiations are rather different. Unlike GSD, the workers are not part of an organisational structure, with clearly articulated rights and responsibilities, who encounter one another through formal mechanisms. Cooperation is rarely an explicit feature of the work. It is the requesters who must divide, distribute and combine the received work to make it a cohesive whole. Instead Turkers collaborate a lot outside of the front line work in online communities or amongst friends and family (Gupta et al. 2014; Martin et al. 2014). These communities function like informal worker organisations—they facilitate information sharing, support and provide some group agency, whereby bad requesters or HITs (as well as good) can be identified and avoided (or accepted).

Turkers also engage in a significant amount of “*interpretive labor*” (Graeber 2015)—the endeavour to understand and accommodate the needs and perspectives of Amazon and requesters, and to be non-confrontational in their dealings with them. This is often collaborative and is achieved through comparing and contrasting experiences and information, often on the forums. This is less often reciprocated. While there is clearly a pragmatism in this approach (i.e. it helps them understand the work, avoid suspensions etc.), Graeber (and e.g. Star and Strauss 1998) point out that this is a common form of work that the more disenfranchised party in a relation of asymmetrical power must do in order to operate successfully.

Amongst their community orientation, there is also a point of tension. They *compete* over a finite set of HITs and personal interests can temper sharing of good jobs (whereas they are quite open about sharing the bad). Furthermore, as we have noted, the lack of clear rules and regulations, processes for complaints and restitution and transparency in general serves more to foster rumour and bad feeling than it does to promote cooperation and collaboration. Thankfully strong ties develop amongst Turkers even if some divisions between different forums and nationalities exist.

#### 6.4. CSCW activism and design

“Take the false novelty of a term like “crowdsourcing”—supposedly one of the chief attributes of the Internet era ... “Crowdsourcing” is certainly a very effective term; calling some of the practices it enables as “digitally distributed sweatshop labor”—for this seems like a much better description of what’s happening on crowdsource-for-money platforms like Amazon’s Mechanical Turk—wouldn’t accomplish half as much.” P37 Morozoz (2014)

When we began our research into crowdsourcing while we were wary of it being used as a means to exploit workers we also thought it offered a potential for people in ‘the Global South’ to access reasonably paid work through the spread of technology (as noted in O’Neill and Martin 2013). This is clearly still possible for crowdsourcing in general, depending on how platforms are designed and managed, but the case of AMT it is not one that reads positively. It was, however, striking that so little was known about the people who actually carried out this work. While it could be argued that it was difficult to get to know them (i.e. studying them was not straightforward), it was strange that not knowing or understanding the workers seemed almost like a wilful act. The discourse of AMT centred around machine metaphors ‘artificial artificial intelligence,’ ‘cogs in the machine’ an ‘API call.’ This seemed like a call for action, since much of CSCW’s history and mission (particularly in the European tradition) has been to consider end-users in design, in terms of understanding their work practices, problems, needs and so forth. And furthermore, as argued in a recent paper (Bjørn and Boulus-Rødje 2015), doing CSCW research and practice involves an interest in *intervening* in situations, often where there are inevitably *political* (or ethical) aspects in the choice. We should be open about these situations and document our work for inspection by others. Within our tradition it has been common to treat workers as key stakeholders, to work with them in specific design activities, and to seek to empower them through design. This has particularly been clear in CSCW’s links with the European Participatory Design (PD) tradition.

In contrast to having a prominent role in design Turkers fitted the profile of *invisible workers* talked about by Star and Strauss (1998): by not thinking about them as ‘real’ human beings with needs, problems and troubles, it was easy to consider them as troublesome ‘components’, needing to be controlled, and not worthy of the usual design considerations extended to other stakeholders. It was also easy to make up stories on their behalf such as they do this for fun. Suddenly the ethics and payments relevant for experimentation on campus did not apply. The parallels with other struggles to get workers and workers-rights recognised and established were eerie (e.g. see Star and Strauss 1998 for some wider ranging historical examples and Felsteiner 2011 for examples from very similar types of work). We do not take this as a grand conspiracy; quite simply in many cases it just seemed to be something people were not thinking about properly, or did not have enough of the right information.



Inspired by the ground-breaking work of people like Lilly Irani, Six Silberman, Joel Ross and Alek Felsteiner that had begun to raise the profile and plight of Turkers, and look to support them technically (most obviously through Turkopticon, a means of sharing Turker assessments of HITs—Irani and Silberman 2013) we thought it was important to do some in-depth qualitative studies of Turkers (Martin et al. 2014; Gupta et al. 2014). A second emergent purpose was to raise awareness amongst the research community that when academics used AMT they were accessing a disenfranchised, low-paid workforce, and ethically they had a duty to think about how they treated those workers. Surely we should apply the same principles as we do in our other research regarding duty of care, compensation and consent? At the time—the treatment of Turkers by academics was patchy, some good, some bad. Positively, there are now initiatives such as a voluntary set of good practice guidelines for academic use of AMT that has attracted a sizeable set of signatories (Salehi et al. 2015). This initiative is part of a larger advocacy project called Dynamo.<sup>15</sup> A combination of Turkers and researchers set up an online workers guild as a means for Turkers to organise campaigns and create pressure for changes in Amazon policy and requester practice.

As well as the work involved in making information about the Turkers and their plight widely known as a means of furthering their cause and engaging with them in advocacy activities, can we try to build technologies that will help them to turk better? CSCW design is often grounded on a deep understanding of the work and the workers themselves. The ethnographic approach is more usually employed to reveal the contingencies of ‘frontline’ work-in-action (e.g. Hughes et al. 1992, 1994; Gajera and O’Neill 2014). However, in this paper we have examined another form of work—the work to make turking work—and we want to consider how our findings on how AMT operates and is experienced as a transnational market bring their own implications for design. In terms of technology there are two very obvious sets of requirements. The first is *information*, the second is *effectiveness tools*.

Why do Turkers go on forums? Well, there are a number of reasons, some to do with social and community aspects, but overwhelmingly the main reasons and triggers are to find out as much information as possible in order to be able to turk more effectively. Who are the good and bad requesters and HITs, what HITs are best suited to me, what are the best learning strategies, when is the best time to turk, what tools can make things easier, how do I deal with problems, and so on and so forth? Better information equals more effective ways of learning and operating in the market. Turkopticon is a tool that provides more much needed information. But then, if you frequent the forums and so forth you can possess a lot of information, but then another problem is posed; how do you marshal that information to your best advantage? The answer is tools (scripts, apps etc.). These generally come in two forms—(1) tools that help you to navigate to and grab the HITs that you want

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<sup>15</sup> <http://wiki.wearedynamo.org/>

quickly, and (2) tools that help you to optimise the speed with which you can do HITs. Turkers have developed amongst themselves whole suites of tools that e.g. notify them when certain HITs become available, automatically grab those HITs, enable better search, enable shortcuts for quick navigation and form-filling, and other browser enhancements as well as tools that help assess pay rates and keep track of earnings etc. These can help change the value of HITs (i.e. make them more worthwhile because they can be done quicker) but also help Turkers to operate in the market, they can filter the good from the bad and spend less time searching and more time working on good HITs.

Along this line we developed a technology called *Turkbench* (Hanrahan et al. 2015)—this technology regularly scrapes AMT and then re-orders the HITs according to highest pay rate and other Turker preferences (what qualifications they have, which requesters they have blocked etc.) and produces a dynamically up-dating proposed schedule for a period of time (e.g. 2 h). In order to determine pay rates Turkbench initially uses HIT completion times (i.e. the time requesters set) but then refines these with Turker data on the actual completion times—in this way it also has a directly cooperative dimension. The idea being that Turkers can select through these proposed tasks without having to go through laborious searches, thus enabling them to find e.g. a series of one-off well paid tasks. Normally they would not do this because the search time overhead would be too great. The principle of the technology has been well received, and although there are some technical and practical problems with it, it has really helped Turkers find some good jobs. We cover the details in more depth elsewhere (e.g. Hanrahan et al. 2015) but the key point to understand here is that in building a technology like this we aim to support Turkers by *rendering the market* in a manner that is more suited to their needs personally (through preferences) but also more generally (they all seek the best paid work). All of the small-scale technologies they use in these situations when put together have the potential for making a modest collaboration-based *market intervention* i.e. by making the bad and good jobs more visible and easy to avoid or access it can focus market activity away from bad jobs and employers towards the good. If there is a critical mass and the tools are powerful enough this might just change the way the market operates.

This is a key reason why we introduce globalisation as a topic; the fact that AMT is a global market, with a lack of regulation and largely opaque functioning creates opportunities for the unscrupulous to force down wages and manipulate different groups of workers. As previously stated, comparisons can be drawn with other new types of technologies and markets, particularly companies such as Uber and Lyft, operating in the peer economy. Such companies also circumvent national or regional legal frameworks and can be exploitative of workers. Similarities can also be seen in the way that the platforms operate. For AMT, Uber and other similar markets, the platform provider tries to extricate themselves from labour relationships—yet the way the platform operates (technically and in terms of policies) clearly controls and defines the marketplace. In Uber this can be seen in the way their algorithm controls pricing and how drivers' adherence or otherwise to Ubers rules and regulations (such

as accepting or cancelling rides) impacts on their ratings and consequently ride assignment (Lee et al. 2015; Raval and Dourish 2016). The exact workings of the platform, the policies and the algorithms remain hidden to the workers, leaving them to try and ‘work it out’ for themselves (Lee et al. 2015). As we have demonstrated here, Amazon, through the AMT platform, operates with similar opacity, e.g. as regards Masters qualifications, suspensions and so on. Furthermore, the workers on Uber and Lyft, just like Turkers, end up using discussion platforms to chat with one another in an attempt to work out what is going on, to share experiences and so on. Therefore a lot of the work to make turking or driving work is carried out outside of the platform which is supposed to support that work. This is perhaps unsurprising given the sometimes adversarial relationships between the ‘independent contractors’ and the platform provider.

These are relatively novel forms of technology instantiated global capitalism, are certainly ambiguous in societal value, and are likely to grow in number. For these reasons we believe that understanding AMT within a theme of recent developments in global capitalism around technologically instantiated markets drives interesting comparisons and points to novel design directions. This is an interesting potential direction for CSCW—rather than pleading with market players to be better employers, maybe one can make a different type of intervention that encourages better behaviour. It deserves more examination, particularly because while intriguing as a possibility it raises some key questions and risks not least of which are: (1) How do you plan for and control the effects of an intervention and what about unforeseen consequences—do you just have to be experimental, reactive and iterative? (2) Can your interventions support different worker groups—e.g. newbies and experts, Indians and Americans—fairly and effectively at the same time? And (3), is this a good way to conceive of things, and will you reify pre-existing inequalities amongst workers or create new winners and losers? Here is a great CSCW challenge.

## 7. Conclusion

In this paper we have looked at a number of ways in which the two key, globally separated communities who work in the transnational digital labour market of AMT orient to, are affected by and understand how its global nature impacts upon them. Furthermore, we have looked at how they think about and understand one another. In framing this material we have brought in discussions of globalisation because we believe it provides a context within which we can grasp this material in a powerful way. In talking about globalisation we have discussed some theoretical positions but our main position here is to treat it as a complex set of phenomena impacting on peoples' everyday lives. By thinking in terms of globalisation it allows us to better understand the nexus of capital, technology, labour, trade and law that plays out in the transnational context of AMT. We hope we have made clear the ways in which AMT is a bit more than a simple technology platform for distributing work—and it forms part of a larger phenomenon of changing work and labour relations that we

suggest CSCW should be interested in. Ultimately these things are experienced by real people as part of their daily working lives—in the technologies, relationships, issues and problems they grapple with in doing their work and trying to understand how things work. We have also tried to demonstrate how approaching this topic and this material in this way provides a variety of design opportunities, within the CSCW tradition, whereby we can study, design for, and co-design with Turkers—trying to help them in a practical and ethical way, citing briefly our own technology development. We present the idea that a form of CSCW activism could focus on providing tools that enable Turkers to operate more effectively in the labour market, and that if these were truly successful and achieved critical mass they could provide some *positive market manipulation*. When so much these days is beholden to markets, and citizens often do not have the agency to change the rules and regulation, there remains the opportunity to innovate in such a way that you can begin to re-balance those markets by reconfiguring them from within.

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