Naming Things is Hard: Real Title Following Colon

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ABSTRACT

With growing attention on gig work — ranging from the "sharing economy" to microtasks — scholars have made connections to frameworks like Taylorism, and mechanisms such as worker advocacy and empowerment, to make sense of our observations of on–demand work and the workers that power this movement. We argue that our the underlying trend towards "piecework" — driven in part by the discretization, routenization, and external management of said work — not only suggests, but in fact generates what we have observed: members of this transient workforce increasingly feeling disempowered, marginalized, and frustrated by the systems and platforms on which they work.

After evaluating this framing through a series of case studies in various industries falling broadly under the "gig work" category, we turn our theoretical lens to look to the future, to identify worthwhile questions and points of inquiry that researchers in social computing should consider as we attempt to anticipate and perhaps shape the future of work.

ACM Classification Keywords

H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous; See http://acm.org/about/class/1998/ for the full list of ACM classifiers. This section is required.

Author Keywords

Please don't make me pick keywords. This is like asking a teacher to give the bullet points of what a student missed in lecture.

INTRODUCTION

This section should outline the trend of contemporary gig work in the last 10 years, in particular tracking the changes since Kittur et al. discussed "The Future of Crowd Work" in 2013 [5]. This would review the literature since then, then point to the movements toward worker unionization, advocacy, etc. . . that have happened in the last year or two.

In the reflection on the literature published in the last 5 years since "The Future of Crowd Work", we notice a broader change in the form of work that's being done; motivated by this realization, we look at the emergent phenomena in piecework both as interconnected. By looking at the movements toward discretization, routenization, and management as necessarily linked — even causally — to one another, we give ourselves a framing of contemporary piecework that explains and arguably predicts what we have seen thus far.

Piecework as a lens to understand gig work

It's not new that researchers have discussed gig work as an extension or resurgence of piecework, but it is sufficiently important for the framing of this argument that it merits a more direct treatment and some explanation here. Kittur et al. investigate the future of crowd work by situating and interrogating it through "piecework", a term almost lost to history, but which for a time described work done in the home, in manageable tasks, often involving clear instructions and payment only for work completed, not work done (the differentiation, here, being that one would be paid for the *output* of the work, not the *duration*) [5]. This work was largely in textiles and was predominantly done by women, which by itself is a topic worthy of unpacking [8]. Given the scope, however, we will have to leave this complex topic with the superficial takeaway that piecework and microtasks share some structural similarities: 1) the work is done in the home; 2) the worker is paid for each discrete piece of work done, regardless of time or effort; and 3) the worker's status (not only socially, but also economically) is ambiguous, or at least the subject of some controversy.

Crowd work, they argued in 2013, represents a threat to the future of work inasmuch as it marginalized and perhaps even harmed workers; their driving question, then, was whether the future of (crowd, but arguably all discretized) work might be one in which they wish their children to participate someday; it seems strikingly like one that might have been asked as patches of denim were first being delivered to the homes of early pieceworkers.

This paper will argue that the similarity is more than striking; it was an inevitable milestone in the maturation of the type of work that is reemerging today. *How to continue???*

Context

Importantly, since the reemergence of piecework we've seen substantial frustration and resistance among the workers in this area [6, 4, 7]. This paper attempts to make sense of the broader research on this piecework, or "gig work", by framing this as one of several steps in the marginalization of workers, starting with the discretization of tasks, followed by routenization and

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the rise of workflows, and finally the external management of workers. All of this is to say that these milestones follow sequentially, not coincidentally but necessarily, and that by tracing this path using the corpus of scholarship on labor and workers we can both make sense of past events and perhaps reasonably predict next steps.

We explore each topic — discretization, routenization, & management — by looking at case studies in social computing. Having validated this lens as a way of reasoning about contemporary piecework, or "gig work", we turn to look ahead, envisioning future areas that researchers in social computing — and particularly digitally mediated work — should explore.

CASE STUDIES

The past decade of research has shed light on crowd work from various perspectives, and revealed

Discretization

I want to argue that modern gig work is discretized, and that this parallels some of the piecework that we're historically familiar with Work has become discretized in the last 10 years, particularly in the information work sector. Breakthroughs like "Find–fix–verify", "Cascade", etc... make it easier to assign smaller components of work to myriad workers and recompose the constituent parts into something more complex [1, 3]. Some work has even turned to "break it down", inasmuch as decomposing what we might call "macro" tasks into micro-tasks [2] (*there's a lot more to talk critique from this paper; sorry Justin.*).

The parallels between this kind of work and historical piecework of the turn of the 20th century is by no means new [*citation needed — who said this first? most notably? Turner?*]. *Elaborate on gig work, piecework, etc...*

Routenization

The **discretization** and decomposition of work certainly facilitates breaking tasks down, parallelizing work, and getting more done across a broader array of people; but the key advantage in turning macro tasks into many micro tasks is that we can make that work *routine*.

By making larger bodies of work less contextually situated, we can define processes that make that work and the instructions thereof useful for virtually anyone with shared cultural or intellectual background.

Routenization can be seen in the contemporary in workflows [*There are various papers that talk about creating a workflow; maybe this is where FFV belongs? Foundry?*].

Harken back to piecework and the instructions that denim workers had to make clothing; the instructions were clear and scoped enough that you could repeat the task ad infinitum.

External Management

Discretization, enabling **routenization**, thus allows us to evaluate work in abstraction. This means that we can

I want to cite Justin's work on crowdsourcing effort to highlight that we can evaluate workers for the work they do with increasingly finite amounts of time; also, Ranjay's work that embraces failure because we can essentially algorithmically make sense of failure (let's call it noise) and re–capture signal.

Resistance

So it's not surprising, then, that workers are frustrated: Turkopticon, Dynamo, and many other pieces of work point this out [4, 7, 6] [*also want to cite Brian's work from CHI this year*]. In popular culture, reporters have inquired about what "the future of labor unions" will look like [*Imagine I had cited an online article and it wasn't totally inappropriate for a conference*].

The parallels here would be difficult to ignore; Lily and others have pointed this out, but it's worth thinking about the broader trend of resisting management, driven by routenization, enabled by discretization. Do that here.

Looking forward

If we agree that discretization, routenization, management, and even resistance necessarily follow one another according to this theoretical lens, then we have to use it to attempt to envision what comes next.

I've been going back and forth regarding how to frame this paper; the approach that tries to look at things that are similar vs things that are different doesn't seem to work, but I've left the thoughts here because it's not all completely bad.

THINGS STAY THE SAME

How is gig work the same as it's been historically?

I think this section would be compelling to draw parallels between the narratives drivers gave about the flexibility, autonomy, etc... and that which we might have seen among pieceworkers (predominantly women, who benefited from being able to work from home).

Flexibility

Are there cultural differences between the people that did piecework and the people that do gig work now? I'm not sure there are significant differences that have affected the outcomes so far.

Many of the workers to whom piecework appealed were mothers, wives, etc... who mostly stayed at home for various reasons (certainly largely it was cultural — women weren't afforded equal access to labor opportunities, making in–home job opportunities not only compelling, but also one of few available options).

Gig workers are in some senses similarly constrained: workers on Amazon Mechanical Turk — those that use it as a primary source of income, at least — report being homebound for various reasons (e.g. medical, parenting, etc...). Society and circumstance have made it difficult or impossible to join the contemporary, conventional workforce; gig work re–opens that door.

But there are differences; during our research over the summer, we spoke to drivers on Uber and Lyft, cleaners, and other gig workers. Many of them told us about their home lives — about children, spouses, and other commitments — to which

they wanted to dedicate more time. One driver (let's call him Raúl) told me about how he drove for Lyft after working as an inventory manager at a hospital for more than nine years.

I asked him why he quit that job and forewent the benefits, predictability, and career growth opportunity that his old job offered. He told me that when his daughter was born, he was overcome with a desire to spend more time with her. No longer satisfied with work where he often left before his daughter would wake up and return after she fell asleep, Raúl decided to start driving for Lyft, because he could drive in the evenings when his daughter was asleep.

Other drivers reported similar benefits; gig work affords its workers flexibility that conventional careers don't allow.

Routenization of work

This leads into the next section, but I want to bring up the process of making work about mass–manufacturing, at least inasmuch as the instructions are the same for everyone.

The Internet arguably has made it much easier to broadcast those instructions, but it's had this deeper effect of enabling some amount of back–and–forth between the worker and the (algorithmic) manager.

Taylorism

The routenization of work makes it possible to measure that process, optimize it for certain characteristics, and ultimately lead to Taylorism and scientific management. This is not new; researchers have studied and written about the slow creep of algorithmic management and discretization & routenization of work tasks.

We hope to take a step back from the context in which this work is often applied, and look for its place in the larger trends and theories to make sense of the trends of gig work at large.

Industrialization and the automobile assembly line makes this famous, but piecework functioned on the principle that everyone was making similar or identical garments and other products.

Now, we see Turkers being evaluated on the outcome of their work conforming to norms, sometimes bootstrapped, as in Ranjay's talk on "Embracing Error to Enable Rapid Crowdsourcing", but more conventionally in work flows like "Find–Fix–Verify".

This might be an opportunity to reflect on how pieceworkers internalized the work they were doing, responded to the stress of the uncertainty of potentially rejected work, etc… but I'm not familiar with research in that space.

The emergence of decentralized workplaces

The practice of in–home piecework was consumed by the centralization of factories (the effect of which we'll talk about later, since we can talk about how this made unions more practical), but for a time many pieceworkers at the turn of the 20th century worked out of their homes. Strikingly, many of the gig workers Kittur et al. discussed in 2013, and indeed many more continue to do what we might call "information work" — that is, work that predominantly demands human computation — but increasingly we're seeing the movement toward transient work that largely requires embodied presence [6] (and others).

What was this about?

I was going to check in quickly and take a photo of your whiteboard (hoping that you'd kept our conversation notes around) but your room was *literally* full of people lol.

THINGS ARE CHANGING

The medium on which this work is being done — and to an extent the medium used to manage workers — has dramatically changed things as well, however; workers are distributed around the world, working out of their cars in the cases of livery services (notably, never returning to a base of operations) across and between cities as well as nations, or in their homes (paralleling the trend of piecework even more closely).

Trying to understand how gig work has differed from piecework should at least start with looking at the different characteristics of the work involved. After that, we should think about how the demography and culture of the people engaging in this kind of work have changed versus that of the pieceworkers.

Differences in the work itself

Gig work has all of the above similarities with piecework, but there are key differences.

Piecework emerged at the turn of the 20th century, right at the time that telecommunications began to boom in the United States. *Did telecom enable remote management?*

Gig work in its contemporary formation is largely mediated by ubiquitously accessible digital media (the Internet, telephony, etc…) and importantly has relied on this technology to facilitate the remote management of workers [6].

Has the work fundamentally changed, or are we just being managed remotely in different ways? I'm not entirely sure.

How does this work differ from the experience of being "on–call" that is so familiar to retail employees? How does this work differ from the work in which truckers, taxi drivers, and other independent contractors have been participating for decades? We argue that the substantive difference in these markets is the speed of the market itself, motivated by the technology which mediates it. Because workers can be sourced and dispatched virtually instantly, businesses that engage in this kind of work (e.g. Uber, Amazon Mechanical Turk, etc…) have taken to removing other bottlenecks, like vetting workers upfront

MORE DELIBERATE WORK

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