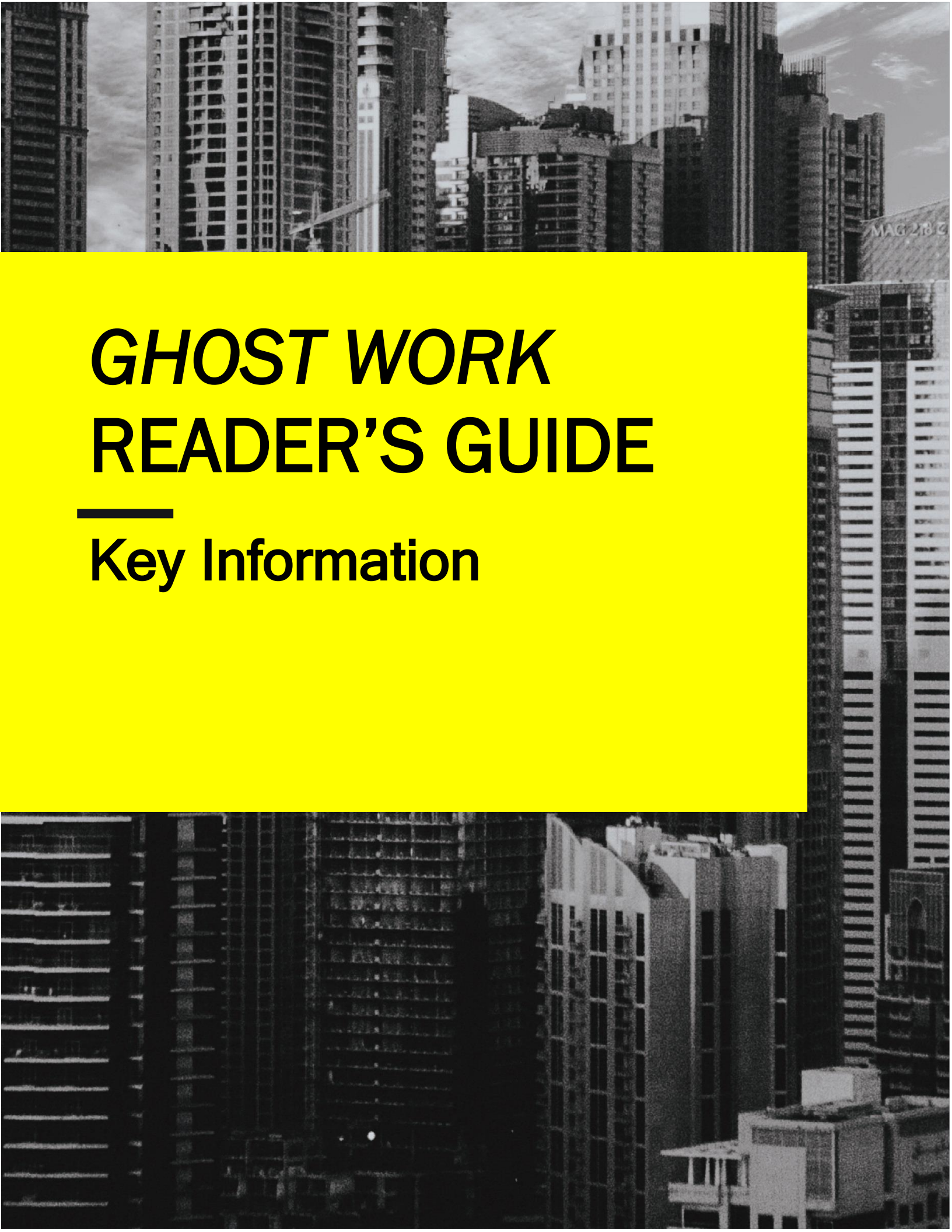

# *GHOST WORK* READER'S GUIDE

## Key Information

# *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass* (HMH 2019) by Mary L. Gray and Siddharth Suri

## This supplement to *Ghost Work* contains chapter summaries, selected facts and statistics, and discussion questions related to the book's main arguments.

Authors:

MARY L. GRAY is a Fellow at Harvard University's Berkman Klein Center for Internet and Society and a Senior Researcher at Microsoft Research. She maintains a faculty position in the School of Informatics, Computing, and Engineering with affiliations in Anthropology, Gender Studies, and the Media School, at Indiana University. Mary studies how technology access, material conditions, and everyday uses of tech transform people's lives and is a leading expert in the emerging field of AI and ethics, particularly research methods at the intersections of computer and social sciences.

SIDDHARTH SURI is a Senior Researcher at Microsoft Research – AI. He is a computational social scientist whose work lies at the intersection of computer science, behavioral economics, crowdsourcing and the gig economy. His early work analyzed the relationship between network topology and human behavior. Since then he became one of the leaders in designing, building, and conducting "virtual lab" experiments using Amazon's Mechanical Turk.

# Chapter Summaries

## Introduction – Ghosts in the Machine

Today, businesses can source, schedule, manage, ship, and bill a host of tasks through a combination of sophisticated software and the internet. Anywhere the internet connects us, companies, large and small, can turn this technological innovation into platform-driven job boards and labor pools. They mix application programming interfaces (APIs) and artificial intelligence (AI) to call people to tasks as disparate as delivering food, reviewing online content, captioning video, and debugging computer code. The work is done, at times in a matter of seconds, on-demand.

In some cases, people do on-demand information service work that helps industries develop the AI aimed at automating away the tasks in front of them. Software developers can't build software that models human decisions without people helping to improve the "guesses" that AI makes. Developers depend on on-demand workers to provide the best proxies for what humans are, collectively, thinking, such as whether an image is a dog or cat, a search engine result is useful or hate-filled, or an email is an advertisement or spam. Legions of hired hands "clean training data"—fix typos, add descriptive tags to images, and myriad other tasks—to make information intelligible to software programs. From there, engineers create maps of human decision-making to build algorithmic models that can automatically anticipate a reasonable person's next move. Yet, despite the specter of robots poised to take our jobs, replacing people's capacity for creative spontaneity and problem-solving core to most service work is a technically hard problem for computer science.

So, increasingly, people are also hired to jump into the workflow of automated systems that can't be trusted to make decisions on their own. These platforms pool the ability of people to immediately step in where the AI falls short. This new form of task-based work is not a niche job. It is a radical reorganization—arguably the dismantlement—of full-time employment itself.

When companies or consumers elide or fail to recognize people responding to these platform-driven work requests, on-demand jobs can quickly slip into what we call *ghost work*: labor conditions that fail to see or intentionally devalue people's collective contributions to our economy and society.

# Chapter One - Humans in the Loop

The first chapter offers an “under-the-hood” peek at API-driven work and the industries that use ghost work to train and fine-tune artificial intelligence or manage larger projects. It begins by telling the story of Amazon Mechanical Turk (MTurk), the first publicly-available platform to sell businesses and individuals access to a standing army of people signed up to do “microtasks” for pennies a task. Microtasks arose in the early 2000s. The term arguably no longer fits the varying size and scope of work delivered via APIs today. But, back in the early aughts, technology giants like Amazon, Microsoft, Google, and Facebook needed to develop automated systems for finding duplicate content, trouble-shooting spellcheck, rooting out broken hyperlinks, reviewing flagged content, and responding to customer demands.

By design, many API-managed labor platforms assume that people are interchangeable, anonymous, autonomous agents able to seamlessly plug into any task, anytime, anywhere. This work has been designed by its creators to conceal the humans who are essential to the smooth function of the most popular websites and mobile phone apps. They are latter-day ghosts in the machine, and the machine cannot run without them. However, in practice, actual people with normal constraints on their time -- from childcare to lengthy commutes to full-time service jobs -- do this work. We share what we learned about the lived experience of people doing ghost work in the United States and India. Some perform only a few tasks. Others stick with it for years. Everyone we met had a list of tasks that they preferred or tried to avoid. Most had learned the hard way how to survive the system’s inherent isolation and alienation. We look at what it means to become one’s own boss, though not quite independent or self-employed in ways defined by today’s official laws and employment classifications. In concrete ways, the platform design sets the terms of engagement for workers. Workers, in turn, contort themselves to fit the flow of tasks. This produces a mix of working styles: “Experimentalists” create value by refreshing the ranks and size of a platform’s labor pool, picking up one or two tasks before moving on to other platforms; “Regulars” routinely work; and “Always-on” dedicated workers perform 80% of the tasks.

# Chapter Two - From Piecework to Outsourcing: A Brief History of Automation's Last Mile

There are historical precursors to today's ghost work. To understand the needs of those toiling in the wake of AI's advancement, we need to examine the past roots of present day sensibilities around why a job is or is not considered valuable work. It took generations of labor organizing and social norms to define full-time employment as necessary and meaningful. Along the way, technologists and business interests, with a mix of motivations, set their sights on automating as much human labor as possible. Neither those advocating for decent, full-time work nor those building systems to obliterate it noticed the persistence, typically on a contingent, contractual basis, of certain tasks that couldn't be automated. Chapter Two lays out necessary historical background that helps explain how automation's shortcomings — not its advances — have defined the meaning and value of human labor. In the late-1800s, textile mills in Lowell, Massachusetts, paid farm families to hand-fashion cloth pieces into shirt flourishes that were still too delicate to churn out on the factory floor. Similarly, today's companies perfecting search engine queries hire workers to test their latest ranking, relevance, and crawling algorithms. Technological advancement has always depended on expendable, temporary labor pools.

# Chapter Three - Algorithmic Cruelty and the Hidden Costs of Ghost Work

Chapter Three focuses on algorithmic cruelty. The APIs and platforms guiding ghost work create frustration for those hiring workers, too. This system, as it currently operates, doesn't work well for anyone. But ghost work can lead to negligent – or downright inhumane– treatment of workers in particular. This chapter explores workers' experiences toiling for a faceless computational process instead of a human boss. We also talk to full-time employees subcontracting out work only to learn that they, too, must take on some of the costs and risks supposedly eliminated by ghost work. Then we talk to workers in the U.S. and India who lost their jobs and final paychecks with no explanation and no opportunity to appeal. Readers will learn that no laws regulate or guide ghost work. We uncover myriad points of inefficient design, including Joan's need to constantly refresh the API's search results to land new tasks; Justin's frustration with sinking unpaid time into web searches to complete tasks ;

Ayesha's constant stress over the timer counting down the Real-Time ID Check task; and the fact that companies decide whether or not workers receive a final payment for tasks completed.

Of course, any freelancer will tell you that getting paid is the hardest part of the job. But, according to a national survey we conducted in partnership with Pew Research, 30 percent of those doing ghost work reported not getting paid for work they performed. At least most traditional freelancers and contractors have a human contact at the company, someone to call or email if an invoice goes unpaid. They may even have a contact who will advocate on their behalf if a payment is late. But the opaque employment terms of ghost work have made collecting one's wages even harder. These common experiences of algorithmic cruelty running roughshod through ghost work make clear why many workers feel that their site of employment doesn't care about them (at best) or is exploitative (at worst).

# Chapter Four - Working Hard for (More Than) the Money

Despite the hardships ghost work almost inevitably entails, people have a range of reasons for returning to it day after day, whether they're experimenting with ghost work, doing it routinely, or making it their source of full-time employment. Chapter Four explores the value that people find in ghost work beyond making money. They tell us they are learning something new about themselves, finding future work that might lead to stable employment, feeling productive, and having a chance to control their work schedule and the types of work that they take on. They avoid the grind of commutes and office politics that they associate with previous 9-5 jobs. They can legitimately claim to be part of "the tech world" even if they lived far from Silicon Valley. They feel more independent and accomplished because they know their accumulated reputations were hard-won. And many feel like they are part of a team, some for the first time in their working lives. Many workers create environments for themselves that foster respect, even if not from the companies assigning them jobs and paying them for work. These workers said they were learning new skills that gave them hope that they would branch out their employment opportunities down the road.

## Chapter Five - The Kindness of Strangers and the Power of Collaboration

One of the biggest surprises our research revealed was how hard workers strive to add to their lives what the on-demand economy seems bent on deleting – human connection, dignity, and the sense of doing meaningful work. People doing ghost work are not always the atomized, autonomous laborers they are assumed to be. Instead, they often work within a tight social network. As Chapter Five shows, the thing that unites those most successful at ghost work – those 'Always-on' and the 'Regulars' – is their ability to lean on one another. This kind of collaboration flies in the face of the assumptions made by designers of APIs who treat all tasks as equally doable and all humans as interchangeable cogs. Engineers assume that better matching algorithms alone make it easier for workers to complete tasks. Yet, companies cannot eliminate a worker's desire to invest in her job as something more than an economic transaction. The personal stories of these workers prove that no automated system can erase the need for connection, validation, recognition, and feedback. This chapter explores how those doing ghost work rely heavily on each other as a way to cope with being employed by non-human computational processes.

## Chapter Six – The Double Bottom Line

On-demand labor does not have to be atomized and alienating. Several platforms are holding themselves accountable for the jobs they create as they build out software-as-service. Chapter Six focuses on in-depth stories of two platform-driven services, the social entrepreneurial commercial start-up, LeadGenius, and Amara.org, a not-for-profit site dedicated to captioning and translating video content for many languages. Both on-demand platform services aspire to meet a "double bottom line" of exceptional fiscal gains and positive social impact, offering examples of how this work need not be ghostly and could be done differently today. Unlike the aforementioned tech giants, these two platforms have deeply invested in fostering worker interaction and task collaboration.

For example, LeadGenius built a minimum wage, set hours, created a mentorship system, and support advancement into full-time employment. We meet people who have moved from hourly work to full-time employment in LeadGenius' Bay Area headquarters. Amara allows workers to choose between

volunteering and doing paid work. In these ways, LeadGenius and Amara allow workers to control their own destinies. They offer models for how to support teams that are collaborative, cooperative units, even though they neither rely on sharing the same location or investing in the same number of hours, as traditional coops do. Amara in particular points to a possible future that puts the worker in the driver's seat, able to set her schedule, negotiate wages and profit-sharing opportunities, and make decisions about when and how to contribute her time and effort to projects that she values beyond a pay check. Helping workers connect, fostering rather than ignoring or stifling their collaboration, and rewarding them for teaching each other aren't just the right things to do in ethical terms. They can all improve the quality of work produced via a platform, thus improving customer satisfaction and earnings.

## Conclusion – The Task at Hand

Even with innovative platforms designing with the best of intentions, those doing ghost work shoulder a disproportionate share of the costs in the digital economy. The book's concluding chapter considers both technical and cultural changes that could make the difference between a future dominated by bad temp jobs and one full of valued, sustainable employment alongside AI. It imagines how to best approach the paradox of automation's last mile as it exists today and account for the value of the people who fill that void. Platform-driven innovations deliver goods and services to businesses and consumers under the pretense that a magical brew of APIs and artificial intelligence have eliminated what traditional employers used to pay for - namely, recruiting, training, and retaining workers. By spending time with hundreds of people doing ghost work, we saw that automation, far from eliminating those costs, shifts them to workers. If the ghost economy extracts value and saves costs by eliminating the traditional stability and security attached to full-time employment, this workforce will require – and deserves – a different set of benefits and safety nets.

The labor of hardworking people around the world should not be hidden by APIs and presented to consumers as seamless artificial intelligence. . We must reimagine a social safety net detached from the hours and places that we work. As platform economies regularly upend what counts as "skilled" labor, we must rethink how we train and compensate workers and put a higher premium on their willingness to step into the breach at a moment's notice. We need opportunities for workers to control their credentials, identities, and reputations, no matter which platform they use to pick up their next project. Ultimately, we

need to build systems so that the worker, rather than the API, controls her employment opportunities. We should penalize employers for misclassifying, delaying, or failing to pay workers, which remains one of the greatest injustices against freelance workers today.

# Selected Facts and Statistics

## The Gig Economy and changes in the labor force

According to the U.S. Department of Labor's Bureau of Labor Statistics, only 52 percent of today's employers sponsor workplace benefits of any kind.

- Bureau of Labor Statistics' 2017 Contingent and Alternative Employment Arrangements
- U.S. Census Bureau's May 2017 Current Population Survey (CPS)
- See the Introduction, pg. XXIV.

Per BLS estimates,10.1 percent of U.S. workers work without an explicit or implicit long-term employment contract.

- ---

In 2017, the BLS reported that at least 31 percent of the U.S. workforce claims that it does some form of alternative work arrangement that includes freelancing or independent contract work for hire.

- ---

If trends continue at the current rate, economists estimate that by the early 2030s, tech innovation could dismantle and semi-automate roughly 38 percent of jobs in the U.S. alone.

- John Hawksworth et al., UK Economic Outlook: Prospects for the Housing Market and the Impact of AI on Jobs (London: PricewaterhouseCoopers, 2017).
- See Introduction, pg. X

The World Bank projects that the professional on-demand digital labor market, delivered through platforms like those we've studied, will grow to a $25 billion-a-year market by 2020.

- Siou Chew Kuek, Cecilia Paradi-Guilford, Toks Fayomi, Saori Imaizumi, Panos Ipeirotis, Patricia Pina, and Manpreet Singh, "The Global Opportunity in Online Outsourcing," World Bank Group, June 2015
- See Conclusion, pg. 168.

Labor economists Lawrence Katz and Alan Krueger estimate that, in the past decade, temporary and alternative 20 contract-driven work delivered through self-employed workers or those temporarily employed by staffing agencies—the so-called casualization of the workforce—rose from 10 to 16 percent, accounting for all net employment growth in the U.S. economy.

- Lawrence F. Katz and Alan B. Krueger, "The Rise and Nature of Alternative Work Arrangements in the United States, 1995-2015" (NBER Working Paper Series, no. 22667, National Bureau of Economic Research, Cambridge, MA, September 2016).
- See Introduction, pg. XXV.

Economist Lawrence Mishel and his research team estimate that between 0.5 and 1 percent of working adults in the U.S., or 1.25 to 2.5 million people, participate in the gig economy. But they come to that number through a very specific study of Uber drivers and the assumption that Uber and other ride-hailing mobile apps make up the bulk of gig work.

- Lawrence Mishel, Elise Gould, and Josh Bivens, Wage Stagnation in Nine Charts (Washington, DC: Economic Policy Institute, 2015), http://www.epi.org/publication/charting-wage-stagnation/.
- See Introduction, pg. XXV.

A study produced by the JPMorgan Chase Institute found that 4.3 percent of U.S. adults, or 10.73 million people, had worked an online-platform-economy job at least once between 2015 and 2016.

- Farrell, Diana, and Fiona Greig. The Online Platform Economy: Has Growth Peaked? (JPMorgan Chase Institute, 2017).
- See Introduction, pg. XXV.

In 2016, a Pew survey that found that 8 percent of U.S. working-age adults, roughly 20 million people, earned money doing tasks either offline or on. That means approximately 12 out of every 100 working-age Americans already does some form of on-demand work.

- Smith, Aaron. Gig Work, Online Selling and Home Sharing. Washington, DC: Pew Research Center, 2016.
- See Conclusion, pg. 169.

A 2016 research study estimated that, in the U.S. and the Europe alone, around 25 million people did some form of on-demand gig work online —accepting project-driven tasks from companies that assign, schedule, route, and bill work through websites or mobile apps. If 25 million job opportunities seems small, consider that this type of job did not exist prior to the widespread adoption of web-based application programming interfaces (APIs) in the early 2000s. At this rate of growth, if combined with current trends in the growth of contract staffing and temp agency services, 60 percent of today's global employment will likely be converted into some form of on-demand gig work by 2055.

- James Manyika et al., Independent Work: Choice, Necessity, and the Gig Economy (Washington, DC: McKinsey Global Institute: October 2016), http://www.mckinsey.com/global-themes/employment-and-growth/independent-work-choice-necessity-and-the-gig-economy;
- See Conclusion, pg. 169.

# Quick facts about select On-demand Platforms

Among the four platforms studied in *Ghost Work* (MTurk, UHRS, Lead Genius, and Amara), between 46 and 71 percent of the workers listed 'earning money' as their primary motivation for doing on-demand work.

- See Chapter 4, pg. 100.

On the other hand, between 29 and 54 percent of workers said their primary motivation was self- improvement, such as gaining experience or learning new skills, or reasons of self-determination, such as utilizing their free time or being their own boss.

- ---

While earning money is important, it's not the only reason workers do on-demand work.

- ---

## MTurk

Almost 70 percent of MTurk workers have completed a bachelor's degree or higher in educational attainment. MTurk workers also skew young: 76.9 percent are between the ages of 18 and 37, the same bracket of years when people are most actively seeking their first career-defining job.

- See Chapter 1, pg. 10.

Only 4 percent of MTurk workers are skilled, practiced, and lucky enough to earn more than $7.25 an hour completing tasks.

- ---

75 percent of MTurk workers do on-demand work on other platforms, including Microsoft's UHRS, Lead Genius, and Amara.

- ---

On MTurk, approximately 98 to 99 percent of all tasks are posted by just 10 percent of the requesters. This means that the markets are extremely concentrated for on-demand work tasks, which in turn exacerbates the power imbalance between workers and requesters.

- See Chapter 3, pg. 92.

Roughly 25 percent of workers in the U.S. and India were referred to MTurk by a friend.

- See Chapter 5, pg. 125.

## UHRS

On UHRS, nearly 80 percent of workers are between the ages of 18 and 37.

- See Chapter 1, pg. 18.

More than 70 percent of workers on UHRS are male.

- ---

More than 85 percent of workers on UHRS have a bachelor's degree or higher.

- ---

## Lead Genius

Approximately 70 percent of Lead Genius's on-demand workforce—called researchers—have a bachelor's degree or higher.

- See Chapter 1, pg. 23-26

Globally, women make up 49 percent of Lead Genius's workforce, although among a sample of India workers there were 10 percent more men than women.

- ---

84.5 percent of workers on Lead Genius are between the ages of 18 and 37.

- ---

More than 25% of workers came to the Lead Genius platforms through a word-of-mouth employer recommendation.

- ---

Almost 75 percent of workers use Lead Genius and at least one other platform to do on-demand work. More than 60 percent of workers on Lead Genius rely on the platform, in addition to at least one other income stream, to meet their basic needs.

- ---

According to Lead Genius, one out of every three workers supports a household of three or more people.

- ---

All new hires on Lead Genius start out on a 90-day trial. If they make it through the first 90 days, they keep up their requirements by logging in and staying connected to teams for at least 20 hours a week. If they consistently make it to their shifts on time, they get an automatic bump of 8 percent in their hourly pay.

- ---

## Amara

In 2015, Amara broke even with earned revenue for the first time. They did it by selling the value of their double-bottom-line strategy.

- See Chapter 1, pg. 26 - 31

The Amara on-demand team that started with roughly 200 members now numbers upwards of 3,000.

- ---

An average of 350 people a month are paid to do captioning and translation work on Amara.

- ---

Reflecting the Pareto distribution, roughly 10 to 20 percent of the people affiliated with Amara do 80 to 90 percent of the work.

- ---

# Employment Classification

The BLS estimates that 10.1 percent of U.S. workers work without an explicit or implicit long-term employment contract. Keep in mind that this survey counts only people who hold an alternative employment arrangement as their primary or stand-alone job. If a person does on-demand work while also holding down a nine-to-five job with a single employer for a set salary or hourly wage—a very common trend among the most active workers we met—they are even harder to identify, let alone count.

- Bureau of Labor Statistics' 2017 Contingent and Alternative Employment Arrangements
- U.S. Census Bureau's May 2017 Current Population Survey (CPS)
- See Introduction, pg. XXIV.

At the height of the Great Depression, triggered by the 1929 stock market crash, more than 15 million people, or just over 20 percent of the U.S. adult working population, were unemployed and had no security beyond what their families could provide. By 1930, accidents at industry work sites had killed scores of workers across the country. The 1935 passage of the Wagner Act, officially called the National Labor Relations Act, established the first legal right of most workers, with the notable exception of agricultural and domestic workers, to form labor unions and collectively bargain with employers.

- See Chapter 2, pg. 46

In the late 1980s, Microsoft was thrust into the spotlight, not so much for its status in the growing tech industry as for a troubling trend in its staffing procedures. Microsoft was assigning temporary (or contingent) workers tasks that were virtually identical to what their permanent staff did. These "permatemps" spent years with the same responsibilities, reporting to the same management, and on full-time hours. By 1989 the IRS had grown wary of this arrangement and audited Microsoft's staffing procedures. The agency ended up deciding that about 600 of Microsoft's independent contractors should be reclassified as permanent employees, because their work was entirely under Microsoft's control. In 1992, a group of temporary workers filed a class-action suit (*Vizcaino v. Microsoft*) claiming that they were common-law employees and should receive the same benefits as permanent staff. In 2000, after nearly 8 years of litigation, roughly 8,000 Microsoft permatemps received a settlement of $97 million. Without a court ruling, the question of what kind of worker these

permatemps were and what kinds of protections they deserved has never been fully resolved.

- See Chapter 2, pg. 56-57

# Money Troubles

According to a 2016 national survey that the *Ghost Work* authors conducted in partnership with Pew Research, 30 percent of gig workers reported not getting paid for work they performed at least once.

- See Chapter 3, pg. 90.

In 2015, the Freelancers Union, in the United States, found that 70 percent of those freelancing in the current economy do not get paid by at least one client and 71 percent have struggled to collect payment for work at least once in the course of their career.

- Sara Horowitz, "Special Report: The Costs of Nonpayment," Freelancers UnionBlog, accessed May 8, 2018, http://blog.freelancersunion.org/2015/12/10/costs-nonpayment/
- See Chapter 3, pg. 90 - 91

The Federal Reserve Board's annual Report on the Economic Well-Being of U.S. Households found, in 2018, that 40 percent of people in the United States did not have the means to cover a $400 emergency expense without borrowing money or selling something.

- See Chapter 4, pg. 94.

Factoring in inflation, real wages in the United States were only 10 percent more in 2017 than they were in 1973, putting annual wage growth at a glacial pace of 0.2 percent a year over the past 40 years. The top 1 percent of wage earners have seen their annual pay increase 138 percent since between 1979 and 2013, while the bottom 90 percent of workers saw only a 15 percent increase in their annual pay over the same period. This means that the typical full-time job can't offer enough to be the sole source of income.

- Jay Shambaugh Nantz et al., Thirteen Facts About Wage Growth (Washington, DC: Brookings Institution, September 25, 2017), www.brookings.edu/research /thirteen-facts-about -wage-growth/
- See Chapter 4, pg. 99.

One in six people employed full-time have irregular work schedules and ten percent of workers employed full-or part-time get their work schedules less than a week in advance.

- Board of Governors of the Federal Reserve, Economic Well-Being 2017.
- See Chapter 4, pg. 99.

# Discussion Questions

1. What is “ghost work”?

2. Why are most consumers unaware of the existence of people doing ghost work?

3. How did Gray and Suri find the workers who participated in their research study?

4. What does the research method of ethnography bring to the study of ghost work?

5. At several points throughout *Ghost Work*, it is clear that workers are invested in making this job better or, at the very least, making it work for them. In what ways do you see workers organizing to make this happen?

6. The refrain that robots are coming to take our jobs is still common. How do the research and arguments found in *Ghost Work* challenge that assumption? How does *Ghost Work* suggest that there is another way of looking at automation that should be considered when talking about the future of work?

7. Often, on-demand platform jobs and the life of an independent contractor are considered “flexible” yet the research behind *Ghost Work* found people had to be hyper-vigilant about securing work. What do you now know about “flexibility” often associated with online work? How does this relate to the inflexibility of workers behind the scenes of artificial intelligence?

8. Why can’t we automate out the need for people, eventually, once we have data to model a human decision?

9. What is the “paradox of automation’s last mile”?

10. Early in the book, it's asserted that the presence of a ghost workforce is neither inherently a bad nor a good thing. How could this work be made a

more positive experience – for all those involved? Does the opaque nature of ghost work make it inherently precarious?

11. The introduction of the book describes a worker named Joan and her experience, after years of practice, now able to piece together roughly $40 worth of tasks at the end of a long workday. Does this online marketplace drive down what professionals would otherwise be able to charge for work? How would we improve the pay for people doing ghost work online?

12. As more work transitions online, what are some full-time fields you see transitioning to ghost work, or more "macro-tasks," in the near future?

13. Throughout the book, the history of employment is referenced as evidence that ghost work is not the first instance of a contingent workforce being undervalued, despite its critical role doing something technologies can't do on their own. Is there anything particularly unique about the latest version of this kind of work?

14. How was the Microsoft permatemp case a missed opportunity for organizing contract workers' rights?

15. The book describes an instance when Amazon Mechanical Turk workers pulled together to advocate for better work conditions, driving a letter-writing campaign to Amazon's CEO Jeff Bezos. Do you think that people doing ghost work will begin to mobilize to fight for better conditions and employment rights for fellow on-demand workers?

16. What are the reasons that large, established tech companies, like Microsoft and Amazon, might either fight for or against implementing any of the *Ghost Works*'s recommendations to improve services for both companies in need of ghost work and workers picking up the jobs?

17. The subtitle of the book suggests that there is a way to stop Silicon Valley from building a new global underclass. What proposals in the book are the most compelling? What would you suggest?

18. The book's conclusion offers specific recommendations for a better, more sustainable future for ghost work. It suggests that such things as basic healthcare options, control over scheduling and projects, and collaborative tools for teamwork are necessary for a "labor commons" like those produced by platform companies. What are the business reasons that more companies might operate like LeadGenius and Amara, the companies discussed at length in the penultimate chapter, "The Double Bottom Line"? And if businesses don't adopt these approaches will trends continue to shift the burdens of this work life, such as dealing with broken software, the administrative overhead, benefits, learning curves that come with on-demand work, to workers' shoulders?