

# Digital Labor

The Internet as Playground and  
Factory

*Edited by*  
**Trebor Scholz**



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*Digital Labor* calls on the reader to examine the shifting sites of labor markets to the Internet through the lens of their political, technological, and historical making. Internet users currently create most of the content that makes up the web: they search, link, tweet, and post updates—leaving their “deep” data exposed. Meanwhile, governments listen in, and big corporations track, analyze, and predict users’ interests and habits.

This unique collection of essays provides a wide-ranging account of the dark side of the Internet. It claims that the divide between leisure time and work has vanished so that every aspect of life drives the digital economy. The book reveals the anatomy of *playbor* (play/labor), the lure of exploitation and the potential for empowerment. Ultimately, the 14 thought-provoking chapters in this volume ask how users can politicize their troubled complicity, create public alternatives to the centralized social web, and thrive online.

Trebor Scholz is Associate Professor of Culture and Media at The New School.

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I dedicate this book to the memory of my grandmother Herta Fritzsche, who was born in 1917 and labored as a home worker most of her life.

R. Trebor Scholz

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# INTRODUCTION

## Why Does Digital Labor Matter Now?

*Trebor Scholz*

In 2009, the Internet as Playground and Factory conference at The New School, a university in New York City with a rich history of critical theory and student activism, asked whether Marxist labor theory, with its concept of exploitation of labor, is still applicable to emerging modes of value capture on the Internet. This book is a result of this international conference that I convened.

What does it mean to be a digital worker today? The Internet has become a simple-to-join, anyone-can-play system where the sites and practices of work and play increasingly wield people as a resource for economic amelioration by a handful of oligarchic owners. Social life on the Internet has become the “standing reserve,” the site for the creation of value through ever more inscrutable channels of commercial surveillance. This inquiry has important ramifications for struggles around privacy, intellectual property rights, youth culture, and media literacy.

To this collection of essays the authors bring a common commitment to understanding the complex implications of new forms of waged and unwaged digital labor. Throughout this publication, you will find the consistent analysis of digital labor as a continuation of the social relations surrounding the traditional workplace. While also exploring discontinuities, shifts of labor markets to the Internet are described as an intensification of traditional economies of unpaid work.

Over the past six years, web-based work environments have emerged that are devoid of the worker protections of even the most precarious working-class jobs. Amazon.com's Mechanical Turk is only one example. These are new forms of labor but old forms of exploitation. There are no minimum wages or health insurance, and so far federal and state regulators have not intervened. Digital labor matters; such underpaid, waged occupations must not be ignored when thinking about cognitive capitalism.



But several authors in this book are also thinking about unwaged labor, the activation of our behavior on the social web as monetizable labor. This argument is frequently challenged because in opposition to traditional labor, casual digital labor looks merely like the expenditure of cognitive surplus, the act of being a speaker within communication systems. It doesn't feel, look, or smell like labor at all. This digital labor is much akin to those less visible, unsung forms of traditional women's labor such as child care, housework, and surrogacy.

In 2011, the value of Facebook was pegged at \$100 billion, which can be linked to vast financial speculation but also the company's collection of user data over a seven-year time span. Intimate forms of human sociability are being rendered profitable for Facebook, which makes it such a big-ticket company. Facebook sells its user data to its customers, which are mostly third-party advertisers. The social web appears to be free for us to use, but there are hefty social costs; oligarchs capture and financialize our productive expression and take flight with our data. We, the "users," are sold as the product. The loss of our privacy, with all its psychological and political consequences, buys us the convenience of "free," innovative services. All of life is put to work, unfairly harnessing implicit participation for wild profits.

But can we really understand labor as a value-producing activity that is based on sharing creative expression? Harry Potter fans produce fan fiction and give their creative work away for free in exchange for being ignored by the corporation that owns the original content. Such unpaid labor practices also include "game modding" and the submission of "captchas." Does it really make sense to think of these activities or the updating and "liking" of status updates as labor? Many contemporary discussions on productivity take as a starting point the ubiquity of pleasure online and relate this to the eroding distinction between work and play. Alexander Galloway writes that it is impossible to differentiate cleanly between nonproductive leisure activity existing within the sphere of play and productive activity existing within the field of the workplace.

On whichever side of this argument you may fall as a reader, the topic of digital labor is an invitation to dust off arguments about the perilous state of privacy, unequal wealth distribution, and the private exploitation of the public Internet.

One significant event in this debate occurred in 1867, when Karl Marx distinguished between necessary labor time and surplus labor time. The former is labor that is entirely aimed at the worker's survival, while the latter is meant to describe any additional labor time. In 1966, Norbert Wiener warned that responsive machines would intensify the exploitation of workers and even replace them altogether. In 1981, Dallas Smythe suggested that audiences are produced and sold to advertisers as a commodity. The audience, Smythe wrote, commits unpaid time and in return can watch a program along with ads. Twenty years later, Maurizio Lazzarato defined such immaterial labor as an activity that produces the cultural content of the commodity. Already in 2000, Tiziana Terranova examined new forms of capitalist exploitation of unwaged free labor, thinking about the viewers of broadcast media and the burgeoning Internet.

Audience manufacture, a salient topic in the digital labor discussion, reached a first height in the 1920s, when radio started to establish commonalities among suburbanites across the United States. Communities that were previously connected through national newspapers started to bond over radio and, starting in the late 1940s and 1950s, over broadcast television. Also cinema played a significant role in the capture of the masses and the creation of a common culture. Now, in the overdeveloped world, people are leaving behind their television sets—gradually but increasingly—in favor of communion with and through digital networks.

Beyond this historical context, *Digital Labor: The Internet as Playground and Factory* also contains the voices of those who are cautious of a discussion of digital labor altogether. Jonathan Beller and others remarked that we can fall victim to a technocratic fetishization of the Internet that takes away from a full acknowledgment of the “real” places of exploitation—namely the slums of economic developing countries. Digital labor in the overdeveloped world is contingent upon the sweat of exploited labor in countries such as China.<sup>1</sup>

The focus on the Internet and the attendant issues of time theft and addiction may distract us from perhaps the most important issues of our time. Bluntly put, time spent on Facebook stops us from giving love and affection to others or from furthering projects that undermine capitalism. What’s more, many people still labor on farms and in factories, and let’s not forget the working poor, undocumented workers, and youth in rural areas for whom access to the Internet is not a given.

“The digital” does not sum up our entire condition. The essence of technology is not solely technological. But without falling for the fallacious rhetoric of “Twitter revolutions,” digital media have also been instrumental for social movements worldwide. It is time to rethink well-worn conceptions of the digital divide by acknowledging the unprecedented global turn in online sociability. While the 2 billion Internet users are indeed a global minority, the 5 billion people and their families who use cell phones are not. Facebook is becoming available on cell phones all across Africa, and it should be understood that digital labor is not just a predicament for the privileged few. Our silence will not save us from the tyranny of digital labor.

## About the Organization of This Book

Following the structure of the Internet as Playground and Factory conference, this book is arranged in four parts. The first part, “The Shifting Sites of Labor Markets,” introduces the broadest issues in the debate. The second part, “Interrogating Modes of Digital Labor,” provides examples and case studies of emerging digital work environments. The third part, “The Violence of Participation,” focuses on questions of exploitation. The fourth part, “Organized Networks in an Age of Vulnerable Publics,” reflects on near-future scenarios, including peer-to-peer alternatives.

In the first part, Andrew Ross provides a wide-ranging and sobering overview of the implications of digital technologies and monetizable labor. He states that the profits of the owners of Google or Facebook are evidence of the current rent extraction boom. Ross also thinks through the class action suit against Huffington Post. The question is whether HuffPo had a contractual obligation to share the spoils of the sale to AOL with the bloggers who created the content for the site.

The entire fabric of our everyday lives, rather than merely our workplace toil, becomes the raw material for capital accumulation. Ross points to the fact that corporate America enjoys a \$2 billion annual subsidy from largely unpaid or underpaid internships alone. Ross also asks us to consider that the vast majority of human labor, historically and to this day, is performed without remuneration—only 7% of India's workforce, for example, enjoys regular wages and salaries. Digital technology, to be sure, didn't give birth to free labor, but it has proven highly efficient as an enabler of dicey work arrangements.

In her chapter "Free Labor," Tiziana Terranova discusses what she calls free labor as work that is not based on employment, work that is unpaid and freely given. For companies it is very clear that the new source of added value in the digital economy is user participation. Terranova states that, "in 1996, at the peak of the volunteer moment [in AOL chat room moderation], over 30,000 'community leaders' were helping AOL to generate at least \$7 million a month."

Sean Cubitt continues this line of thought by describing how social networking commercializes the gift of labor, not as individual activity but as aberrations from the average, which can be read as tendencies and exploited as such. He writes that the battle for the Internet is not yet over, but in critical strategic and tactical fields such as codecs and HTML5, capital is winning. Technological rule-making directly determines civil liberties online. Technical standards such as MP3, mpg, and Bluetooth are increasingly determined by private or hybrid private/public institutions, which become points of control over global information architectures.<sup>2</sup> While design decisions can have serious consequences for our freedom, it is only a small group of people that has control over the entire Internet. There are significant battles on this level. Victims of Hurricane Katrina, for example, couldn't register for federal emergency help unless they used the Internet Explorer browser. Technical standards are politics by other means.

McKenzie Wark states that the vectoral class, a term that he developed in *Hacker Manifesto*, has less and less interest in the viability of national spaces of production and consumption; it can do without factories. Wark also cautions against the rhetoric of "gamification," because it could be conceived of as getting people to do things without paying in exchange for symbolic rewards.

In the second part, "Interrogating Modes of Digital Labor," Patricia Ticineto Clough addresses labor metrics and affect. She wonders if it is possible that labor is not measurable on the parasitic platforms of the social web. Clough suggests that in financial capitalism, wealth is produced external to capital's organization of labor or external to the accumulation of capital through production. She writes

that philosophy is registering the ongoing reconfiguring of labor, measure, and affect accompanying the effort to make productive the micro affects of matter itself.

Ayhan Aytes, in his chapter, poses that if the digital network is the assembly line of cognitive labor, then the Mechanical Turk is its model apparatus. Crowdsourcing, for Aytes, is a hybrid concept that merges the neoliberal outsourcing paradigm with the crowds on the digital networks. He continues that the unregulated nature of the emerging global cognitive labor market evokes the *Gastarbeiter* (guest worker) program of the economic wonder years of postwar Germany. This German *Gastarbeiter* program has been a prominent model for establishing a legislative immigration system without rights.

Abigail De Kosnik investigates the work of fan moderators, writers, and artists who post and comment on YouTube, Facebook, Twitter, and other social media sites. Their number is in the millions, and their free labor activities contribute to far more massive corporate revenues than the \$7 million monthly garnered by AOL, mentioned also in Tiziana Terranova's chapter. The abundant contributions of fans to the Internet can be regarded as labor, she writes. Fan labor can ramp up the buzz and reputation of a product, and fans are booted into this emerging labor market. De Kosnik concludes that corporations should value fan labor as a new form of publicity and advertising. They should compensate fans who could understand their work as the first rung on the reputation ladder for aspiring creative professionals.

Jodi Dean contemplates blogging. As bloggers, she writes, we expose ourselves, our feelings and experiences, loves and hates, desires and aversions, but we need to be reminded of our exposure, our visibility, vulnerability, and ultimate lack of control. Access to my friend is a way of getting access to me, Jodi Dean notes. For Dean, publicity is the ideology of communicative capitalism, which suggests work without work (work without pay or work that is fun) and play without play (play for which one is paid and play for which one pays with enjoyment). Convenience trumps commitment. Dean concludes that in this economy, a lucky few will get nearly everything, but most will get very little, almost nothing.

In the third part, "The Violence of Participation," Mark Andrejevic reports from the new frontiers of data mining. He makes the case that the commercial appropriation of information meets an abstract definition of exploitation. Andrejevic argues that it is indeed the sign of a certain kind of material luxury to be able to be exploited online—to have the leisure time and resources to engage in the activities that are monitored and tracked. Google tracks its 1 billion unremunerated users and sells their data to advertising clients, who consequently target users with ads. The intertwining of labor, leisure, consumption, production, and play complicates the understanding of exploitation, but Andrejevic remarked that the potential usefulness of an exploitation-based critique of online monitoring is that it invites us to reframe questions of individual choice and personal pleasure in terms of social relations.

Andrejevic also discusses peer pressure and the obligation to network online, which is becoming institutionalized, and the fruits of this labor are recognized as a source of value. Commercial surveillance has become a crucial component of our communicative infrastructure, he observes. Exploitation, however, does not mean that workers don't take pleasure in the success of a collaborative effort. There are moments of pleasure despite the fact that we are losing control of our productive and creative activities. While his critique of exploitation does not disparage the pleasures of workers, it also does not nullify exploitative social relations.

Jonathan Beller argues that there is no easy distinction between financialization and digitization. For him, the Arab Spring, Los Indignados in Spain, and the worldwide protests of 2011 all transmit a radical disaffection with the capitalist organization of representation and assert the living history and potential of insurrection.

Lisa Nakamura's chapter examines the racialization of digital labor by Chinese gold farmers in the massively multiplayer online role-playing game *World of Warcraft*. These "farmers" produce and sell virtual goods such as weapons, garments, animals, and even their own avatars to other players for actual dollars. Asian gold farmers are constructed as unwanted guest workers within the culture of *World of Warcraft*. While on guard when it comes to explicit references to racial conflict in the real world, the game is premised upon a racial battle in a virtual environment.

The fourth and concluding part of this book, "Organized Networks in an Age of Vulnerable Publics," discusses alternatives to the logic of the network. Which tangible and imaginative suggestions can we offer that some of us could implement, today, after putting down this book?

For users, the web signals a double bind between the benefits of weak ties, the real possibilities of getting a job, and an awareness that their participation greases the wheels of the corporate Internet. How much power should society allocate to the major sites on the Internet? Shouldn't critically important digital platforms be regulated or even nationalized? What are the temptations of dominance? Should Google be able to dictate who has access to Google Books and perhaps only give full access to the highest bidder?

According to Mark Zuckerberg, "sharing and connecting are core human needs."<sup>3</sup> For him, consumer-communication is at the heart of the service that he offers. But self-disclosure is misunderstood if we talk about it in terms of basic needs. We don't always get what we want. Is it really self-disclosure when we vote thumbs-up or thumbs-down? Seeking praise and peer acknowledgment, hundreds of millions of post-job workers are flocking to the social web like moths to the light, trying to get noticed by transforming themselves into something quite generic. Instead of projecting identities that conform with what employers might expect, is there not an opportunity for collective self-becoming?

If class consciousness across social networks is an unrealistic proposal, maybe a call for political consciousness could lead to a fight against mindless individualism or the power imbalance between intermediaries and users.

Michel Bauwens argues that in conditions of social strife, capitalist corporations can be transformed into worker-owned, self-managed entities that create their own commons of shared knowledge, code, and design. The task of movements of cognitive forms of labor, he writes, is to try to create a new hegemony and a new commons-based alliance for social change, which challenges the domination of capital.

Ned Rossiter and Soenke Zehle explain the current transformation of networks into autonomous political and cultural “networks of networks.” Zehle and Rossiter emphasize that in order to affect politics of the universal on its computational terrain, we have to take the condition of variational territories and topologies of code seriously. Such an action intervenes on the algorithmic level, they write.

How do we carve out autonomous spaces for creative resistance when frictionless sharing of network interaction undermines our privacy and when digital infrastructures of control invisibly capture value from all areas of our lives? Which practices and instruments provide us with true social power—the power to act collectively and form publics of common concern?

Are we willing to sit at the table and negotiate future scenarios with intermediaries, or is the end of capitalism a precondition to kick-start our actions? Christian Fuchs calls for a different world today. He demands that the communicative commons of society should not be privately owned or controlled. The commons should be available to all, without payment or other access requirements. A more pragmatic, near-future approach would be the establishment of legal jurisdiction that imposes restrictions on outsourcing services online, providing workers with some basic rights.

Digg.com’s Digital Boston Tea Party or the so-called Facebook riots about the newsfeed, Beacon and the various other privacy hiccups are referenced frequently. The social web does empower consumers in their negotiation of the rules of their own consumptive activities by these “spectacles of democracy,” as I call them, but do not give license to citizens in their struggle for meaningful social change. Instead of riots, what we witness are just-in-time user feedback loops.

Apart from such rebellions, further considerations include the building of actual alternatives—technical and social infrastructures—and the possibility of refusal of or withdrawal from the Internet.

There are a few nonproprietary social networking services, but at this point, they do not reach considerable membership. I hope that one day a mass exodus from Facebook will happen. The social networking service Diaspora is designed for that purpose.<sup>4</sup> Other initiatives include the independent citizen media project Crabgrass, which is especially designed to meet the needs of bottom-up grassroots organizing.<sup>5</sup> We can think of sites like Craigslist, which, despite recent controversies, is a good example of an online business that is not focused on profit maximization but rather on user satisfaction.

But the Internet is so intensely subjugated to corporate interests that even if you jump ship, if you abandon the Facebook Titanic today, chances are that you are jumping on to the next life raft that is likely just as profit oriented. Wikipedia,

Crabgrass, Diaspora, and Craigslist are exceptions; they are not practical models for the entire Internet. On the Internet, even peer-to-peer sharing practices, the exchange of the “gift” that almost always takes place on corporate turf, creates capital for those from whom we rent those platforms. In the age of friendship marketing, we rent the product of our own labor, as McKenzie Wark puts it.

Those who called for an all-out refusal of the sunless digital cycles of capitalist production and reproduction need to acknowledge the rare privilege of such position and need to understand that the engagement of users is not entirely voluntary. The violence of participation is about data mining on the one hand and the personal and professional price they would pay for their refusal of mainstream social media services on the other. Refusal would be tantamount to social isolation. Furthermore, in *Convergence Culture*, Henry Jenkins accurately points out that the debate keeps getting framed as if the only true alternative is to opt out of media altogether and live in the woods, eating acorns and lizards (Jenkins, 248–9). Instead, we can produce real counterpublics, support civil disobedience actions, and create networks of solidarity by diversifying/hybridizing our social media practices.

On the social web, we are getting used, we are using each other, and we can act together. Which social practices make it easier for us to be powerful together? Which political stance do we take by aligning ourselves with a particular network or service? Surely, we will want to question all those dear friends who only care about the bottom line instead of really doing something magnificent with these emerging online platforms. And if you think about it, well, wouldn't you like to stir up some serious havoc in the playground that is the factory?

## Notes

- 1 Recent reports about Foxconn showed the atrocious working conditions under which iPads are produced. Nick Wingfield, “Apple’s Suppliers Pressed to Improve Workers’ Lot,” *New York Times*, April 1, 2012. Web. June 13, 2012.
- 2 For an excellent discussion of network governance, see Laura Denardis’s two recent books, *Protocol Politics: The Globalization of Internet Governance*. Cambridge, MA: The MIT Press, 2009; and *Opening Standards: The Global Politics of Interoperability*. 1st ed. Cambridge, MA: The MIT Press, 2011.
- 3 Justin Smith, “Exclusive: Discussing the Future of Facebook with CEO Mark Zuckerberg,” *Inside Facebook*, June 13, 2012, <http://www.insidefacebook.com/2009/06/03/exclusive-discussing-the-future-of-facebook-with-ceo-mark-zuckerberg/>.
- 4 “Diaspora\*,” *Diaspora\**, June 13, 2012, <https://joindiaspora.com/>.
- 5 “All about Crabgrass—Groups,” <https://we.riseup.net/crabgrass/about>.

## References

- Galloway, Alexander. 2007. “We Are All Goldfarmers.” *Culture and Communication*. [http://cultureandcommunication.org/galloway/interview\\_barcelona\\_sept07.txt](http://cultureandcommunication.org/galloway/interview_barcelona_sept07.txt).
- Jenkins, Henry. 2008. *Convergence Culture: Where Old and New Media Collide*. Revised. New York: NYU Press.

- Lazzarato, Maurizio. 1997. "Immaterial Labor." *Generation Online*. <http://www.generation-online.org/c/fcimmateriallabour3.htm>.
- Marx, Karl. 1867. *Capital*. Vol. 1: *A critique of Political Economy*. Trans. Ben Fowkes. London: Penguin, reprint 1992.
- Smythe, Dallas W. 1981/2006. On the Audience Commodity and Its Work. In *Media and Cultural Studies*, eds. Meenakshi G. Durham and Douglas M. Kellner, 230–56. Malden, MA: Blackwell.
- Wiener, Norbert. 1954. *The Human Use of Human Beings: Cybernetics and Society*. Jackson, TN: Da Capo Press.



