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TREBOR SCHOLZ AND LAURA Y. LIU

# FROM MOBILE PLAYGROUNDS TO SWEATSHOP CITY



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**Situated Technologies Pamphlets 7:**

From Mobile Playgrounds to Sweatshop City  
*Trebor Scholz and Laura Y. Liu*

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*Front cover:* Film still from *Sleep Dealer*. Courtesy of Alex Rivera, [www.alexrivera.com](http://www.alexrivera.com).

*Back cover:* Lewis Hine, A typical view of Carmina Caruso, a ten year old Home Worker  
as she walks around crocheting as she goes. (Courtesy of the Library of Congress.)

*Contents spread:* Film still from *Sleep Dealer*. (Courtesy of Alex Rivera, [www.alexrivera.com](http://www.alexrivera.com).)

The Situated Technologies Pamphlet Series extends a discourse initiated in the summer of 2006 by a three-month-long discussion on the Institute for Distributed Creativity (iDC) mailing list that culminated in the Architecture and Situated Technologies symposium at the Urban Center and Eyebeam in New York, co-produced by the Center for Virtual Architecture (CVA), the Architectural League of New York and the iDC. The series explores the implications of ubiquitous computing for architecture and urbanism: how our experience of space and the choices we make within it are affected by a range of mobile, pervasive, embedded, or otherwise “situated” technologies. Published three times a year over three years, the series is structured as a succession of nine “conversations” between researchers, writers, and other practitioners from architecture, art, philosophy of technology, comparative media studies, performance studies, and engineering.

[www.situatedtechnologies.net](http://www.situatedtechnologies.net)

This rich pamphlet grew out of The Internet as Playground and Factory, a conference organized at The New School and held in November 2009. In this seventh pamphlet in the Situated Technologies Pamphlets Series, Trebor Scholz and Laura Y. Liu reflect on the relationship between labor and technology in urban space, where communication, attention, and physical movement generate financial value for a small number of private stakeholders. Online and off, Internet users are increasingly wielded as a resource for economic amelioration, for private capture, and the channels of communication are becoming increasingly inscrutable. The Internet has become a simple-to-join, anyone-can-play system where the sites and practices of work and play, as well as production and reproduction, are increasingly unnoticeable.

Norbert Wiener warned that the role of new technology under capitalism would intensify the exploitation of workers.<sup>1</sup> For Michel Foucault, institutions used technologies of power to control individual bodies. In her essay “Free Labor” (1999), Tiziana Terranova described what constitutes “voluntarily given, unwaged, enjoyed and exploited, free labor on the Net.”<sup>2</sup> Along these lines, Liu and Scholz ask: How does the intertwining of labor and play complicate our understanding of exploitation and “the urban”?

This pamphlet aims to understand “the urban” through the lens of digital and not-digital work in terms of those less visible sites and forms of work such as homework, care work, interactivity on social networking sites, life energy spent contributing to corporate crowd sourcing projects, and other unpaid work. While we are discussing the shift of labor markets to the Internet, the authors contend that traditional sweatshop economies continue to structure the urban environment.

The pages of this pamphlet unfold between a film still from Alex Rivera’s *Sleep Dealer* on the front cover and an image by Lewis Hine on the back. Set in the near future, *Sleep Dealer* imagines a world in which closed borders have brought an end to immigration, where workers in poor countries are plugged into a global digital network that enables them to control robots that work remotely in the Global North. Rivera’s protagonist lives in Mexico, but his workplace is the United States. Hooked up to the network, he delivers “work without the worker.” Lewis Hine, by contrast, documented domestic labor: children tying tags, doing crochet, sewing under the guiding control of a mother in tiny

living rooms or dirty kitchens. What are the flows or discontinuities between these forms of labor?

Liu and Scholz analyze the situation of digital labor in relation to the city but also suggest tangible alternatives. Today, we are not only “on” the Social Web, we are becoming it—no matter where we are. Internet users are becoming more vulnerable to novel enticements, conveniences, and marketing approaches. Commercial and government surveillance are sure to escalate as new generations become increasingly equipped with mobile platforms, interacting with “networked things.” The goal of this pamphlet is to start a public debate about contemporary forms of exploitation. Attention must be focused on social action and, while always in need of scrutiny, state regulation and policy.

*Omar Khan, Trebor Scholz and Mark Shepard*

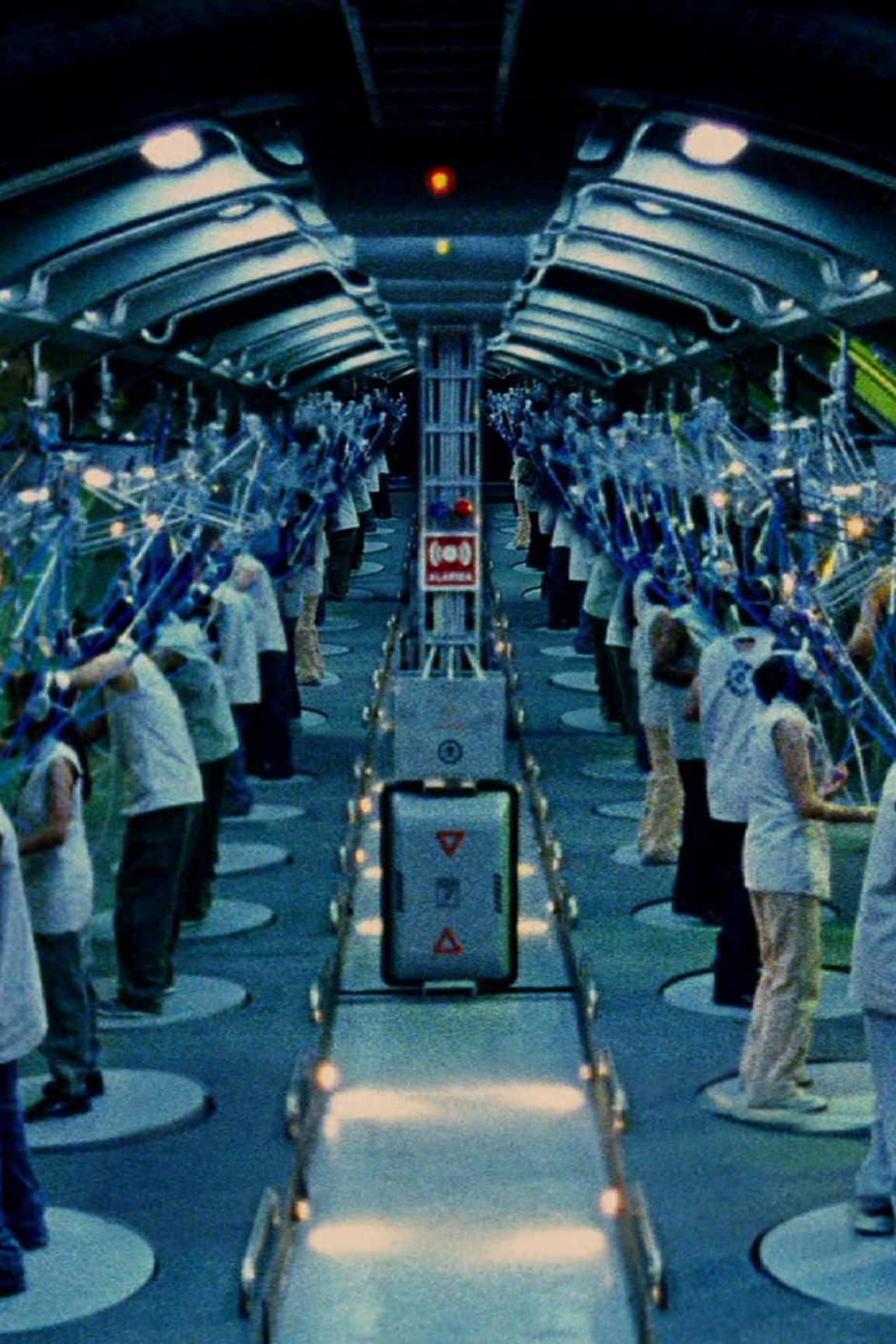
<sup>1</sup> Barbrook, Richard. *Imaginary Futures: From Thinking Machines to Global Villages*. London: Pluto Press, 2007. Print. 60.

<sup>2</sup> Terranova, Tiziana. *Network Culture : Politics for the Information Age*. Pluto Press, July 2004.

## THE AUTHORS

**Trebor Scholz** is a writer, conference organizer, Assistant Professor in Media & Culture, and Director of the conference series The Politics of Digital Culture at The New School in NYC. He also founded the Institute for Distributed Creativity that is known for its online discussions of critical Internet culture, specifically the ruthless casualization of digital labor, ludocapitalism, distributed politics, digital media and learning, radical media activism, and micro-histories of media art. Trebor is co-editor *The Art of Free Cooperation*, a book about online collaboration, and editor of “The Internet as Playground and Factory,” forthcoming from Routledge. He holds a PhD in Media Theory and a grant from the John D. & Catherine T. MacArthur Foundation. Forthcoming edited collections by Trebor include “The Digital Media Pedagogy Reader” and “The Future University,” both by iDC, 2011. His book chapters, written in 2010, zoom in on the history of digital media activism, the politics of Facebook, limits to accessing knowledge in the United States, and mobile digital labor. His forthcoming monograph offers a history of the Social Web and its Orwellian economies. <http://digitallabor.org>

**Laura Y. Liu** is Assistant Professor of Urban Studies at Eugene Lang College, The New School. Her research focuses on community organizing and urban social justice; the socio-spatial dynamics of immigrant communities; race, gender, and labor politics; and the relationship between methodology and epistemology in activism. Her published works include an article about the impact of September 11 on Chinatown in *Indefensible Space: The Architecture of the National Insecurity State* (2007, Ed. Michael Sorkin), as well as articles in *Urban Geography; Gender, Place, and Culture; and Social and Cultural Geography*. Liu is writing a book called *Sweatshop City*, which looks at the continuing relevance of the sweatshop metaphorically and materially within Chinatown and other immigrant communities, and throughout New York City. In 2010, she was invited to speak at the Knoxville Museum of Art on the exhibition, *Anne Wilson: Wind/Rewind/Weave*. In 2009 and 2008, she was invited to participate in the Workshop on Ethnographies of Activism at the London School of Economics. Prior to coming to The New School, she taught at Dartmouth College. She holds PhD and MA degrees in Geography from Rutgers University, and a BA in Architecture from the University of California at Berkeley.



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**TS** **Trebor Scholz:** The backdrop for our conversation is the Internet as Playground and Factory conference (IPF), probably the first large, international event that aimed to broadly map, describe, and theorize emerging forms of expropriation of users associated with the digital economy. This conference took place in 2009 at the New School University in New York City where over one hundred speakers and one thousand participants discussed the virtues and vices of “digital labor.” It became clear that the intensification of commercial and governmental surveillance performed by the booming data mining industry will make digital labor an issue of unambiguous importance—a bread-and-butter issue—over the next two or three years. Together, we can carry the urgency from the conference to this pamphlet and its readership of architects, artists, urbanists, and designers.

**LYL** **Laura Y. Liu:** I’m really excited to talk further about the fascinating issues around digital labor that will interest the Situated Technologies readerships you mention. I hope that urban planners and policy makers, geographers and other social scientists, ethnic studies and feminist studies scholars, and labor and community activists will also constitute the audience for this conversation. For me, the Internet as Playground and Factory was about challenging accepted categories involved in understanding the social experiences of space and of the interaction between sociality and power, beginning with the relationship between the virtual and the material in the built environment. No longer can we separate these spheres, as we have increasing interdependencies among them. Perhaps because I am primarily concerned with how spatial organization creates conditions of exploitation and hegemony in the world of work and also creates the context for counter-hegemony, I was also struck by how the conference revealed trouble spots in how we categorize our relationships to objects, spaces, and activities as simply “labor” or “play.” What happens when they overlap? How does the intertwining of labor and play complicate our understanding of exploitation and agency? Of production and productivity? Of the urban economy as a networked economy? I find myself having to think about urban ideas of the network in different ways once digital labor is involved.

**TS** How so?

**LYL** In terms of how the relationships between social networks, urban space, and information create hierarchies of power.



The Internet as Playground and Factory, first conference in the series The Politics of Digital Culture, The New School, New York City ([www.digitallabor.org](http://www.digitallabor.org)) November 2009.

For example, Manuel Castells has written extensively about the ways that information technologies, including those predating the Internet, have shaped cities and society. In his work, as in many urban theorists’, there are fairly fixed roles for different actors in the network economy in which power positions are clear and participation in the network breeds inequality. In other words, nothing is free. Castells’ “informational city”<sup>1</sup> and “network society”<sup>2</sup> are extensions of a larger body of urban theory about the world city<sup>3</sup> or global city prominently associated with people like Saskia Sassen.<sup>4</sup> This work sees a clear break between the declining urban manufacturing economy and the rising service economy. Central to the informational or global city is an economically integrated, if unequal, network economy that creates varying levels of economic integration of production and consumption activity. The conference challenged the idea that economic, digital, social, and other networks map neatly, transparently, or coherently onto cities, spaces, or regions in the global economy, in the ways that Castells, Sassen, and others might have us think.

As a geographer and urbanist who studies the ways labor, community, and politics are organized in cities, especially in immigrant and working

class neighborhoods, I examine how various social, political, and economic networks operate and are embedded into spatial contexts. The Internet as Playground and Factory highlighted the need to critically examine how the Internet of Things creates both connections and breaks among social and spatial networks of both work and play. It also brought together debates around the Internet of Things and labor in ways that rethink objects themselves as both products and instruments of labor. If objects are produced and consumed in an already existing map of power across space, then the rise of the Internet of Things requires that we consider how objects capable of connection facilitate different layers of integrated activity around labor, or sometimes fail it. At the same time, the spatiality of digital labor is something I do not see as necessarily subordinate to or derivative of the “non-digital” economy, but rather another sphere creating new forms of spatial and social connection, imbalance, and possibility.

**TS** I agree that there are various false assertions of novelty of forms of digital labor. Like you, I’m interested in emphasizing the continuities between traditional forms of labor and their manifestations online. One of my main arguments here is that the Internet allows more and more people to do more and more for themselves and others while simultaneously making them more vulnerable to unfair treatment, expropriation, and even exploitation. In short, the Internet of Things prompts greater possibilities for the unwitting utilization of people.

Our digital footprint becomes somebody else’s business. The information that is collected about us makes our future behavior predictable as it establishes behavioral patterns. Law enforcement and numerous intelligence agencies may not track us individually at all times but they can recognize deviations from patterns of behavior; sudden changes in our spending or road trips that appear to be out of the ordinary. Such departures from our routine can make us look suspicious in the eyes of the law.

**LYL** The idea that deviation from pattern is cause for suspicion is such a deeply troubling idea. And it is stunning to think how the Internet of Things allows for the patterns of our behavior to become data commodities. It is as though the hyper-Fordist control over repetitious work in the factory has bled over into the expectation of our hyper-regularized mobility and activity throughout the city and other spaces.

How does this happen so seamlessly and what are the dangers in having our patterns monitored?

**TS** I wonder if surveillance is really invariably atrocious. Parents watch their children play from afar. Teachers monitor children during swim lessons. Police monitor our movements at intersections. “Auto-location” technologies help companies like Petsmobility.com to make it possible for dog owners to set “geo fences.” DigitalAngel.com delivers GPS/RFID-based location tracking services for livestock, and the military uses these devices on ships, aircraft, and submarines. It is even used to monitor the movements of fish and other wildlife. Such services also allow for the tracking of children and the elderly and finally, there is a multitude of ecological applications of the Internet of Things. In the broader context of our conversation, I don’t think that condemning all digital labor and the corresponding technologies of surveillance is a productive solution. In “*Gleicher als Andere*,” the German media philosopher Christoph Spehr describes his concept of free cooperation, in which he defines the option to bail out as an act of sovereignty.<sup>5</sup> However, for Internet users the refusal to participate is often based on privilege; for most people it is a personal and professional imperative to participate in living online environments. Going off the social media grid is not an answer that most people could afford as it would impact their professional success and personally isolate them. Free Cooperation—participating with the option of withdrawal—becomes an idealistic goal and a marvelous thing to do for those who can afford it.

At the same time, the instruments of digital labor are indeed everywhere; they are fast-changing and invisible. Without being recognized as labor, our location, input, and tracked mobility become assets that can be turned into economic value.

Let’s tease apart some of the dangers from the advantages of digital labor. In the past, when a new technology has taken off, there was enough time to think about possible countermeasures if necessary. Just consider the installation of surveillance cameras near cash machines, which led to the placement of signs pointing to the existence of such CCTV cameras. Caller ID led to the possibility of blocking such a service. But then, reflect on the contemporary situation when Facebook or Google introduce a new feature and there is absolutely no time for considered responses. As Internet users we trade our privacy for valuable experiences



and intra-communal linkages. The corporate Social Web molds us in its image. We are being worked on, sculpted over time. We are becoming the brand. We are not just on the Social Web but we are becoming it.

But let's look a little more closely at one example. Mary is an attorney and most days she takes Dan Ryan Expressway in Chicago to get to work. When her Mini Cooper passes by one of those large digital billboards that dominate the landscape, a message appears, saying something like "Mary, traveling at the speed of justice."<sup>6</sup> This dispatch is triggered by Mary's key fob, which interacts with the billboard. Drivers in the four pilot cities of this advertising campaign that took place in 2007 had to opt-in to prompt such pithy notes. Mini drivers could also personalize what it said on the big screen. BMW, the company behind this "youified" PR campaign, could potentially learn a lot about Mary, her day-to-day rituals and patterns of behavior. Because of the Internet of Things, too, we will have more and more choices, which will be partially trivial and could lead to what Barry Schwartz called a vertigo of choice.<sup>7</sup>

Already in the 1980s researchers started to embed sensors in the built environment but today, Google's "Internet evangelist" Vint Cerf predicts that personalized geospatial advertising will become a core feature of the future Internet.<sup>8</sup>

The Internet of Things isn't so new; corporations introduced ActiveBadge to monitor the movements of employees in the workplace already thirty years ago and practices of surveillance can be traced back at least to Jeremy Bentham who became best known for his idea of the Panopticon. ActiveBadge was also mentioned in the first pamphlet in this series of publications.<sup>9</sup> With roughly two billion Internet users and five billion cell phone subscribers, the scale and massification of participation have made the Internet of Things and digital labor far more urgent topics. Through the flourishing data collection industry, information gathering will become ever more pervasive and comprehensive. And what is most astonishing is that this entire process of expropriation has been breathtakingly normalized.

**LYL** I agree that we should not universally condemn digital technologies and surveillance, but I think we should be rigorously skeptical. As you describe, it's not just the corporation that gathers this

information, right? There may be data that the state contracts out to acquire and purchase from private companies. So we should remember where and how this information circulates when we talk about the increasing insinuation of these "instruments" into our networks.

**TS** That's accurate; the US government purchases most of their data mining services from private information brokers. But let's go back to the Internet of Things and give a little bit of historical background.

It wasn't always clear that the Internet is enmeshed with the built environment. During the early decades of the Internet, "cyberspace"—as science fiction author William Gibson called it—was seen as a completely separate "virtual world," unrelated to the actual economy. In "A Declaration of the Independence of Cyberspace," John Perry Barlow envisioned the Internet as a space that is not dependent on government regulation and the economic forces of the real life financial system.<sup>10</sup> Later, in the late 1990s, Castells and others argued that all dominant social functions are organized around networks. Today, in the overdeveloped world, the importance of networks is hard to deny and what used to be limited to technologies of the screen is now also embedded in sensor networks, RFID technology, global positioning systems, biometric surveillance tools, wireless and locative communication technologies, mobile devices, and instruments worn on the body. In 2006, Alex Pang, a Research Director at the Institute for the Future in Silicon Valley, referred to the situation in which information is being layered on top of the physical world and in which the offline/online distinction becomes increasingly meaningless as the end of cyberspace.<sup>11</sup>

In this conversation, I'm referring to the above-mentioned bundle of technologies as the Internet of Things, which is not entirely in keeping with Wikipedia's definition (if that is a reference we can accept) but at this point there isn't one agreed upon term. In the first pamphlet of this series, Mark Shepard and Adam Greenfield referred to these technologies as "ambient informatics," "situated technologies," or, to use Greenfield's term, "everyware."<sup>12</sup> Architecture theorist Malcolm McCullough refers to embedded systems/embedded gear<sup>13</sup> and science fiction author Bruce Sterling adds the concepts Blogjects and Spimes (objects that can be tracked over their lifetime) to this discussion<sup>14</sup>.

**LYL** You've described numerous intriguing examples of "every-ware" to me before. Can you elaborate on some of them here and talk about how they do and might work?

**TS** Sure. Just think of "smart cars" that alert us to a traffic jam ahead and then allow us, while standing in gridlock on the turnpike, to tune in to the iTunes library of the car next to us. The state of California is currently investigating the feasibility of wirelessly networked digital license plates, which could turn into small advertising screens the moment a car comes to a standstill at a traffic light or during congestion. (Perhaps the Internet of Things can rectify California's \$19 billion budget deficit.) Apart from that, networked bricks can report the structural integrity of buildings, park benches alert walkers to vacant places of rest, scales disclose our body weight to the Web where we can compare it with friends and where it will likely end up in a corporate database. While these may sound like visions of the future, these technologies are in fact already in operation. Our state-of-the-art passports are handed to us, complete with embedded RFID tags. Band-Aids, imbued with computational intelligence, can report our body temperature to the Web and as we are on our way to the hospital for treatment, we may as well take a last look at our umbrella because it may light up if a cloud burst is imminent. Once in the hospital, we may be in for a surprise because the data that we are providing in hopes of treatment may then be sold to for-profit medical organizations without our knowing consent.<sup>15</sup>



RFID embedded in US passport (Photo: Albert Lorzano)

**LYL** You make a very compelling case that what differentiates this new landscape are the vastly increased scale of the network and the accelerated speed of its implementation and operation, both of which potentially compromise users' (or regulators' or competitors') ability to respond, contain, or otherwise enact counter-measures. It is easy to overlook these unprecedented but less racy characteristics when you are caught up in the fetishism that sometimes surrounds the newness of the technology. And I think this is a major point for activists and those who want to deploy grassroots digital technologies against some of these corporate and state interests, which for me is one of the most intriguing issues explored in this pamphlet series. In the third pamphlet of the series,<sup>16</sup> Benjamin H. Bratton and Natalie Jeremijenko very cautiously suggest that direct action and other forms of political activity have at least the possibility of responding to social problems with a similar level of immediacy through real-time generation of data, though they are distinctly wary of ascribing any overstated political agency to data collection. But it goes back to your point about having the space and time (or not) for countermeasures. To further examine this, it would be helpful to have a better understanding of digital labor as a concept. In your lecture at the IPF, you introduced a useful typology that breaks down some key categories of digital labor. Can you remind us of those categories?

**TS** The idea of digital labor is broadly accepted when it comes to *distributed labor*, which refers to a variety of emerging online platforms where the workers are in fact paid. Some of the waged digital workers using this communication arena are paid as little as \$1.45 an hour for the completion of small mindlessly repetitive tasks that a machine could not perform.<sup>17</sup> With its Mechanical Turk service, Amazon.com positions itself as the "neutral" provider of a service; it does not want to get involved in the possibly flawed behavior of some employers who use Mechanical Turk (or MTurk). MTurk is mostly used by Americans based in economically depressed areas of the United States and it is also popular among Indians from regions of that country where English is not the first language. Indian workers state that they are using the service mainly to practice English.<sup>18</sup>

Another service called Tختهagle<sup>19</sup> is a business platform that is operated on cell phones. Tختهagle offers rural and low-income populations in sub-Saharan Africa a supplementary income, or payments in the form of cell phone airtime, in exchange for short translations, for example.<sup>20</sup>

Such cell phone-facilitated services are tremendously consequential because they are more scalable than desktop-based platforms. As I mentioned earlier, there are close to five billion cell phone subscribers and the density of such phone subscribers in poor countries is far higher than that in the overdeveloped world. Cell phones become a tool of accessing the ill-treated global workforce.

**LYL** You once said to me that the mobile phone has the potential to have a much more massive impact as an object and instrument of digital labor than some of the other technological devices we associate with the Internet. I appreciate you stressing the point here, and emphasizing its importance as the networked object that perhaps most facilitates labor across countries, regions, and hemispheres. Please go on.

**TS** Next, I'm looking at "data labor," which I am associating predominantly with rich countries where millions of people are wrapping their lives in digital media by providing information and profiles to social networking services or by publicizing their social graph, posting status updates or blog entries.

The sociologist Erving Goffman suggested that when people come together they exchange two types of information. First they "give" information, and second they "give off" information.<sup>21</sup> The information that they give away is largely conscious; it is what they would like to communicate. But at the same time, they are "giving off" information through their eyes, posture, and tone of voice.

Data labor could be understood as the process of "giving off" information. Most Internet users are not aware that their navigational stream, their serendipitous moving from one website to the next, is recorded in some instances. In addition, consider that the data that we knowingly give away in profiles—by blogging, tagging, commenting, or by submitting our own content—are commercialized.

**LYL** It's that idea of traces and patterns of activity as potentially meaningful or incriminating data, and as commodities themselves. I remain apprehensive about the cozy relationship between corporations and the state, linked through information.

**TS** Absolutely. Along those lines, it makes sense to separate out a third category: that of geospatial labor. Geospatial labor is based

on real-time information relating to our whereabouts and possibly even our movements. And these facts are compiled, aggregated, and sold to other businesses or the US government. In 2009 alone, law enforcement requested customer GPS data from the telecommunication company Sprint eight million times.<sup>22</sup>

Apart from this governmental surveillance, the commercial utilization of our location will thrive now that Facebook rolled out its geo-location check-in feature Places<sup>23</sup> to its more than 500 million members. This should be a jolting reminder of how deeply connected social networking services, digital labor, and the built environment really are.

Geospatial labor is closely linked to issues of "dataveillance." Systems automatically collect our toll on highways or bridges across the United States and we have become traceable at any given moment. It is disturbing to reflect on how little we know about the information that is collected from us. We don't know which stories are told about us, we cannot check if they are accurate, and we don't know for which purpose they are shared. Facebook, for example, states in its terms of service that it collects information from third parties about its users but it spells out nowhere what that exactly entails. This reminds me of Tim O'Reilly, the technology publisher who pointed out that we are participating without knowing that we participated and that that is where the power comes. The power that O'Reilly refers to is in the hands of for-profit organizations that live off our digital labor.

In addition, we may also consider the creations that fans fabricate, and acknowledge the substantial revenue for the owners of the original materials that result from such fan labor. For fans, it would be sacrilegious to try to commoditize their creations—and of course, it would also be completely illegal, as this work unambiguously violates copyright. Though fan producers cannot make money with their work, they can easily distribute their remixes, mashups, music adaptations, all fan fiction on LiveJournal, YouTube, or in other venues. Abigail De Koznik, a scholar of fan production, suggests that fans should seek compensation for this labor.<sup>24</sup>

**LYL** And yet in many cases they are commoditized. But yes, one measure of the purity of the fan labor product is the rejection of payment for the labor. I will come back to this idea further down to draw some parallels with other forms of unpaid labor.

**TS** Attention labor is a similar category that is fairly easily understood. It has to do with the amount of time that we spend online and where we spend it. Forty percent of all Web traffic is concentrated on ten websites<sup>25</sup> and 23% of all time spent on a single website is spent on social networking services.<sup>26</sup> The time that we are online is also time that we are exposed to advertising. Again, there are innumerable continuities between traditional and contemporary forms of labor—there is a long tradition of this in the context of radio and television.

In 1977, the economist Dallas Smythe<sup>27</sup> introduced the concept of the media audience as a commodity that is manufactured and sold by advertising-supported media. Smythe argued that the act of consuming media represents a form of unwaged labor that audiences performed on behalf of advertisers. Desire for products would be called up and translated into demand for commodities. Nowadays, social networking services are making people available by providing experiential hubs.

This mapping of numerous categories of digital labor—from distributed, attention, data and fan labor to geospatial labor—is inevitably incomplete. Various forms of labor are overlapping and all blend into each other. Nevertheless I think that these categories are helpful to understand what I mean by digital labor. These categories make it easier to think about the paradoxes and complex trade-offs in a more nuanced, specific way.

Internet researchers perpetually see the ground shifting below them. We are facing constantly emerging trends, tools, and platforms. Some things about the Internet have not changed at all over the past forty years but it may still be premature to go beyond speculative propositions and critical reflection on specific networked practices.

**LYL** Your typology of digital labor categories is very helpful for thinking about the important distinctions but fuzzy edges around work and play, and between the overlapping and sometimes identical spaces of cities and of the digital world. Ultimately, I think digital labor reveals that we need to define labor itself much more broadly, certainly beyond the traditional definitions. We need to acknowledge that pleasure and play can be a part of labor. I know we agree that unpaid labor is a crucial category to consider.

**TS** Definitely. Nowadays, waged digital labor is not endemic for the digital economy. Most work is performed as part of a perceived trade-off for free-ish, convenient services. Digital labor is a productive instrument central to contemporary capitalism. Communication generates economic value that can be cashed in by those who first manage to occupy emerging marketplaces and capitalize on the net effect. But in the end, we are all tenants on commercial real estate and our land-fee is paid for—almost inscrutably—with our attention, data, and content. Comparisons to unacknowledged, invisible, domestic work that you put forward are paramount. If there is a free section of a particular service, then we pay for it with another feature that is not free. Contrary to print, radio, and television, what generates economic value is embedded in the medium itself; it dissolves into the background, as media historian and theorist Kazys Varnelis and others remind us.

**LYL** The tenancy and real estate analogy suggests the lever of control comes down to ownership and brings to mind the line from Proudon: “Property is theft.” It’s the dark side of things being “free-ish,” as you say, but never fully free. I’m interested in your last remark, that one important difference with digital labor is how the generator of value, and of course profit, is embedded in the medium itself and “dissolves” into the background. We lose sight of the acquisition of, or more pointedly, the production of value. This can contribute to the concealment of its utility. Having multiple uses for data creates trouble when one use renders the others hidden. I am reminded of those booths you often see at neighborhood events, where local police departments offer free fingerprinting services for children, playing up the value of fingerprints as necessary data for identification should a child go missing. But can we overlook the other ways fingerprints are used? Shouldn’t we feel troubled that these children’s fingerprints might easily find their way into databases used for criminal checks, etc., especially when they were acquired by a police department to begin with? It requires a certain amount of vigilance and awareness to always consider who might gain control of voluntarily offered data. I would add that a level of vigilance and awareness are sometimes required just to see the labor itself and the way it’s used.

**TS** Being cognizant of these processes of expropriation should indeed be conceived of as a necessary skill, part of our 21st century media fluency toolbox. I’m calling it “value fluency,” an understanding of what generates economic value in the context of the Internet.

In his essay “Google’s PageRank Algorithm” Matteo Pasquinelli describes Google as a machinic parasite of the common intellect.<sup>28</sup> Pasquinelli argues that Google isn’t simply an apparatus of surveillance or control, but a machine that captures living time and living labor and that transforms common intellect into network value. It collects a “cognitive rent,” so to speak. For Pasquinelli Google’s wealth results from parasitic income; its Page Rank Algorithm allows Google to have a monopoly on data and that establishes its cognitive hegemony. With a nod to Deleuze and Guattari, Pasquinelli refers to this as machinic surplus-value. He describes Google as a global rentier who is exploiting the new lands of the Internet without a need for strict enclosures or content production. And he defines Google as a parasite of the digital datascape, which provides seemingly free services but then captures value through a pervasive form of Internet advertising (AdSense and AdWords). In what Gilles Deleuze called “the control society,” Google benefits from the free labor of “liberated” multitudes on the Internet.

In my work, I am especially interested in using the idea of land and the land fee. Yochai Benkler describes networked peer production as being removed from market motives.<sup>29</sup> Indeed, but through our attention and online activities—and also in the context of sharing—we generate economic value that is then absorbed by a few large companies; the economy of commodification and absorption of surplus value takes place in the same network where the peer-to-peer sharing economy plays out. While people in sharing economies help themselves and others, all of these networked social formations, globally, reside on corporate property. There is no “outside” of the commercialized Internet. In that sense even “free” techno-social platforms that allow users to create objects or experiences extract economic value for those who own those participatory environments.

The virtual world Second Life is one example. Here, residents create virtual objects that contribute to the experience of Second Life. It makes this virtual world into an experiential hub that is worth exploring for the richness of user-facilitated experience. A few years ago LindenLab was celebrated when it handed over the intellectual property of all creations in the world to its residents. This is an interesting example that shows that intellectual property and the attendant issue of copyright can actually be relatively peripheral to issues of digital labor. Let me elaborate. Linden Lab provides the virtual real estate on which thousands of residents built

a multitude of objects. The main value of all these three-dimensional creations is that they facilitate a rich experiential environment that attracts new users and retains existing ones. In some regards, it doesn’t matter who owns the virtual objects within Second Life. Linden Lab’s transfer of IP rights was more of a publicity stunt as ultimately users couldn’t remove the objects from the virtual worlds anyway. The real value is not the content but the people who are logging on and spending time in the virtual world; their cognitive labor is the crux of the environment. To go back to Benkler, residents in Second Life jointly produce objects and they can realize themselves and help each other but at the same time they are generating value for Linden Lab.<sup>30</sup> Peer production contributes to the greater good but simultaneously becomes an engine of digital drudgery.

**LYL** That’s a fascinating example and really challenges any oversimplified understanding of ownership. You reveal the false symbolic value of giving over intellectual property rights when the mechanism that extracts user labor is still in place. We need to always ask, which aspects of ownership? We need a value fluency for the land and lots, not just the buildings that sit on them. Added value still comes from users and supports the whole enterprise. The example also shows why we must move between the micro and macro in terms of scale to understand labor, digital and otherwise. You have mentioned to me the need to always be case specific in coming to a nuanced evaluation of digital labor. I agree, but would also insist that we simultaneously need systemic analysis, too.

**TS** It may be too early for systemic analysis but what kind of systemic interpretation did you think of?

**LYL** Well, to shift gears a bit, one of the most pressing questions that has emerged in urban studies has to do with understanding cities and labor at the level of large scale shifts in industrial restructuring. So for example, we can see certain labor issues emerge in neighborhood gentrification. New York City’s municipal government has rezoned many of the city’s industrial districts to be residential luxury or loft spaces, changing the landscape of jobs and work in those areas. But to see the whole picture, we need to ask, how is this neighborhood or citywide shift intertwined with larger processes of globalization and restructuring that are changing all levels of our relationships to

places in the city and to cities themselves? As a crucial component, what is the role of the state, local and national, in this changing picture? This is a major question for what architect Michael Sorkin has dubbed the “National Insecurity State” and its self-created problem of “Indefensible Space.”<sup>31</sup>

At the same time, we need to think about changes in social reproduction brought by the industrial changes most often associated with shifts around production. The geographer Cindi Katz has written extensively about how global economic restructuring hugely affects social reproduction and has altered children’s everyday lives in cities like New York as well as in rural Sudan.<sup>32</sup> Partly, she investigates children’s geographic mobility and environmental knowledge in different places and under different political and economic systems to see how their entire social world changes. She notes that, for New York City children, urban restructuring has reduced children’s experiences of public space in negative ways as public spaces of and for play have atrophied or become fortified. Similarly, in Sudan, integration into the global economic system has meant children must venture further to gather fuel and food. In each case, many of the changes in work and play are determined by fairly large structural forces. Through an analysis of the intertwining of work and play—what she calls the “playful” quality of children’s work and the “workful” quality of their play—she finds evidence of creative responses to larger shifts, themes relevant to what we are talking about here in the blending of work and play.

**TS** In the discussion leading up to The Internet as Playground and Factory conference last November, there was much debate about the conceptual work surrounding terms like work and non-work, playgrounds, the factory, users, operators, exploitation and expropriation. And indeed, many of these categories are blurred, and need to be used interchangeably in day-to-day deliberations. That’s also why I am appreciative of the term workfulness that you brought up. Within this conceptual tension, your work on sweatshops and labor struggles in the immigrant industries of New York is closely linked to fairly pronounced exploitation of labor. I’m thinking in particular about the garment industry and the restaurant sector. How would you relate the exploitation that you expose in restaurants to the work that we discussed here?

**LYL** To begin with, I appreciate that you see the connections between my research on sweatshops and labor struggles in general, and the realms of value generation and digital labor that you talk about. Many urbanists describe these systems as essentially different, positioning sweatshop workers in an outdated Fordist manufacturing economy, while placing digital workers in the increasingly predominant post-Fordist service economy. The global cities literature I mentioned above, in fact, relies upon this industrial economic shift as the central restructuring force of economically dominant cities in the US and the over-developed world in general. In this view, sweatshops are talked about in two ways: either as leftover industrial residue that will mostly eventually disappear from the economies of “core” countries as they increasingly outsource to countries in the global “periphery,” or as a metaphorical analogy for the work of programmers, academics, bankers, lawyers, etc., who often work as sub-contractors or in other ways engage in temporary or contingent white-collar work. I agree that this metaphor has symbolic discursive power, but I’m concerned with the ways the sweatshop is not just a metaphor.

For example, there are important similarities between the Fordist sweatshop and what I would call the post-Fordist sweatshop. Without discounting the differences, I argue that the global city is still a “sweatshop city,” one dominated by a spatial hierarchy of work that is unevenly visible and intentionally obscures certain relations of work. It’s worth remembering that Fordist factories remain throughout the city and not just as a residual form. For some industries, proximity still matters. In the case of garment production, while certainly the industry does not have the presence it once did in New York City, there is still value in being near a major fashion center, what we might consider the positive “externalities” of being within a local fashion network. Externalities, or external economic factors, are an important category when thinking about how industries make location decisions. With proximity, designers can visit production sites; subcontractors can quickly deliver to finishers who do detail work; production can be linked to retail venues that exist in the city. The “just-in-time” demands benefit from closeness. Using Los Angeles as a case study, Ed Soja has shown that the garment industry in that city experienced growth in the 1990s, suggesting that the post-Fordist city is not an un-Fordist city.<sup>33</sup>

Of course, the spatially integrated structures of local industries are accompanied by an industrial structure of “vertical disintegration” that

creates a pyramid of production through the subcontracting system, a classic feature of the sweatshop system. The processes and labor conditions in one stage of production are isolated from others, structurally and spatially. Through layers of subcontractors, manufacturers and designers are able to deflect responsibility for labor conditions. Workers in the lowest tiers of the pyramid are least protected, most vulnerable, least secure, most contingent.

There's a parallel here in the information-based post-Fordist city. If we look at vertical disintegration in the industrial process and spatial isolation of worksites along a linked chain, the sweatshop city can be seen in the post-Fordist city as well. The key industries driving urban restructuring in global cities are in producer services (services usually performed by firms for other firms), such as legal, advertising, finance, accounting, real estate, insurance, etc. But there is a pyramid or chain here, too, in that the rise of producer services partially relies on the vertical disintegration of firm structure. Vertical disintegration changes the corporation from one with all in-house functions to one that contracts them to outside firms: in other words, outsourcing. Just as the Fordist sweatshop economy is characterized by delinked chains of the industrial process that separate the factory from the manufacturer or retailer, so the post-Fordist sweatshop economy is characterized by delinked chains of the corporation that separate the advertising from the market research from the financial management. What I am calling the sweatshop city is thus a particular organization of social relations in urban (and other) space.

And this is where we probably have some disagreement about how useful exploitation is as a lens of analysis for digital labor and urban environments. I think it remains an important central category.

**TS** In the realm of digital labor and its underlying technologies, exploitation in the classical Marxian sense can definitely be found. I think of Christoph Spehr's film "On Blood and Wings" that remixes vampire film footage to comment on the problems of the multitude in Marxist theory.<sup>34</sup> For Marx, the vampiric nature of commodity capitalism pretended to sustain the workers while siphoning up their lifeblood. First of all, I agree that the digital workers who are appallingly underpaid on Amazon's Mechanical Turk are exploited. Specifically, Amazon.com needs to stop playing the role of the "neutral" bystander that merely provides an innocent platform. They cannot stay clear of the ethical

problems caused by their service. In the most technical sense of the term exploitation, workers on MTurk are under-compensated for their labor. I agree with you in this instance. In the absence of meaningful regulation, minimum wages, and health insurance, exploitation is taking place in the context of distributed digital labor.

**LYL** Okay, so we are in agreement there.

**TS** At other times, however, I do not think that exploitation is a meaningful term to describe the work that is taking place. The potential of the Social Web for economic expropriation isn't always realized. Is the blogger who is posting an entry to his site exploited by Google? What harm is done and to whom? Are all the users of Flickr who are industriously tagging their photos deceived or ripped off? Are Facebook users exploited? They do entrust their data sets—consciously and unknowingly—to companies like Facebook and those pieces of information are indeed collected, analyzed, and sold. Initially, companies like Odeo or Facebook employ user data mainly to increase their user base but once this is accomplished, less benign uses of the data kick in. But I think that exploitation is not the right term inasmuch as it calls up pictures of traditional industrial exploitation that are simply not fitting here. Users are often aware that value is generated through their online presence; Facebook's interface has become the retina that stares into the eyes of its users.

**LYL** But the narrow association of exploitation exclusively with traditional industrial work is one of the things I, and others, argue very strongly against, especially with respect to long-standing and burgeoning arenas of service work. I'll come back to this, but what would you call it instead?

**TS** Expropriation is a term that is accepted by scholars and which also resonates with Main Street Internet users. I understand that there could be some kind of false consciousness, but that idea is also somewhat paternalistic in that it tells people what to feel. For *Two Bits* author Chris Kelty,<sup>35</sup> exploitation is just too vague as a term. "Mines exploit the earth, directors exploit starlets, capitalists exploit laborers, so yeah, not as good [a term as expropriation]," he wrote. It is true that very few users of Facebook or Foursquare would say that they are exploited; those voices do exist but they are in a minority. Far larger groups of

people would agree that they are used. You are of course right, Laura, that this could all just be about false consciousness and E.P. Thompson's *The Making of the English Working Class* (1964) comes right to mind.<sup>36</sup> For one, I would say that the spectrum of our experiences and work practices that make up digital labor may be more diverse than the working conditions of English factory workers. There are many moments in which the Internet doesn't at all function like a factory. We should not lose sight of the interruptions by solely emphasizing continuities.

**LYL** But wouldn't we say that the working conditions of most industries are more diverse than those of English (or other) factory workers? I'm not saying these workers are deluded into false consciousness as much as I'm wondering whether it is required that workers, users, etc. name something exploitation for it to be exploitation. What do you understand to be the difference between being used and being exploited? Is it a matter of scale or degree? Or are they qualitatively different experiences?

**TS** We could consider Zappos, the online shoe retailer, as an example that speaks to your question. Its CEO, Tony Hsieh, is a sought-after motivational speaker in the corporate speaking circuit because his stated goal in life is to make people happy, and that includes not only his customers who enjoy free return shipping for 365 days but also his employees who are unusually loyal to the company despite the fact that they are not paid especially well. Hsieh explains that beyond 1980s style positive thinking, he is giving employees the impression that they are in control of pay raises and their own career advancement. Friendships with colleagues are encouraged through rituals like the public sharing of confessions. In sum, Tony Hsieh describes his company as one big happy family.

Doesn't this just sound almost identical to Frederick Taylor's manipulation of workers by virtue of having detailed background information on their personal traits? The employer really wants to understand what motivates a particular worker and then he or she uses that information to manipulate workers with the goal of profit maximization. Even if these "Zappotistas" are contented at work, they are exploited if they really are underpaid.

Beyond this example, we are really witnessing a fulfillment of Taylorist and Fordist dreams of control and efficiency.<sup>37</sup> For Taylor and Ford, direct

control over the movements of workers was limited to the factory, as that is what they paid for. But with the Internet of Things, control enters domestic space and generally all realms of existence. Just like with previous forms of "sweatshop" labor there is a stark asymmetry between workers and the enterprises that benefit from their labor.

**LYL** But it's not just underpayment, right? It's the entire set of social relations. Like you, I'm much more inclined to say it is worker manipulation than false consciousness, say in the case of Hsieh. But how do we situate a blogger in terms of their relationship to these social relations? Are they in a kind of gray area that is neither exclusively work nor play? Is it also that their work does not exist in the formal economy? Many features of the sweatshop city are also grey to the extent that sweatshop labor in the nineteenth and twentieth, and now twenty-first centuries often incorporates the gray or informal economy in which spaces and practices are obscured from formal labor markets and regulation. Other aspects of "grayness" come from the overlap of family and other social relations on top of worker-manager relations. This is apparent in the industries I research, many of which constitute a relevant segment of the urban economy and one often driven by immigrant labor: garment, restaurant, domestic work. We might say that the



Lewis Hine, Whole family rolling cigarette cases, the mother was licking the papers as she worked (Courtesy of the Library of Congress)





Lewis Hine, *Garment Workers on East Side 4:30 P.M.* Vicenzie, 14 years old. Jovannina, 9 years old. Michael, 5 years old. (Courtesy of the Library of Congress)

spatial dynamics of the sweatshop city, including digital labor, are about the contraction of social relations, say when families or other members of tight social networks perform labor as a unit, but also the expansion of distance between the seat of control and accountability and the worker herself, a classic feature of the subcontracting economy. I've recently begun to think about the documentary photographs of Lewis Hine and other social reformer photographers and how they depict labor, especially of families and children. Hine's photographs of homemaker families, usually in their homes or on the streets nearby, reflect the pervasive blurring of work and play in urban spaces of the informal economy.

We also see this in the way workplaces are reframed as "family," as in your Zappos example, or in many other worksites. Restaurants are the classic "we're one big family" place to work. The company town is another classic example of a paternalistic space of work but also recreation, culture, etc. that also draws upon ideologies of the family and the tight-knit small town. Every time I hear about a corporate campus with laundry and gym facilities, free food and cappuccinos, gardens and massages, I

think about the company town. Not to say I don't want subsidized on-site resources, like childcare. But the amenities are about producing a certain controlled space and worker-subject.

Along the lines of these comparisons, our conversation is pushing me to think about the very definition and terms of digital and non-digital work. How different are they? Are there ways for exploitation to lurk in these new forms regardless of the potential for digital workers to earn money, to have perks, to mix play with work? The opportunity to make money is not mutually exclusive with exploitation, after all. A better measure may be the comparison of wages to profit and of course the question of who has control. Once we are talking about labor, digital or otherwise, that is not in the control of its producers, there are attendant exploitation issues to consider. Perhaps some of those are novel, but many more of them, I would argue, are mundane. Not mundane in the sense of unimportant, but mundane as in similar if not identical to other forms of labor exploitation, and also mundane as in normalized. Where you ask, "what is distinct about digital labor taking place in a social factory," I might ask, "how does digital labor fit within the frame of traditional labor?" To qualify, I do think there are important reorganizations of space, place, and scale in the urban restructuring that has occurred with these changes in digital labor. But peoples' experiences of their spatial mobility, and of technology in the broadest sense, are always being reworked.

**TS** But is not this where the difficulty starts? On the one hand, the tools of the means of communication are in the hands of those millions of Internet users but indeed the grounds on which all of this is playing out are privately owned. Again, I completely agree that this bait-and-switch digital economy is an extension, a shift of traditional labor markets to the Internet.

Small acts of labor have been outsourced to customers for a long time; just think of fast food restaurants where customers take on the work of waiters. In 1954, Ray Kroc took over from the McDonald brothers and perfected the art and science of putting the customer to work.<sup>38</sup> Or, consider the rituals at airline check-in terminals, which help to reduce ground personnel. In a similar fashion, groceries now offer self-service lanes that allow patrons to check out in self-service mode.

**LYL** Your examples helpfully illustrate what are varying levels of exploitation as well as issues of expropriation, but also where I think we have some productive disagreement around their definitions and value. In terms of the worries over commercial and state surveillance and its invisibility, I'm in total agreement. I also support the inclusion of expropriation as a notion that captures a sense of extraction or taking. But we should clarify that we are really talking about exploitation in two different ways. One is exploitation as in alienation from labor in a more strictly Marxist political-economy sense, and the second is exploitation in more broad strokes of daily use, as in being taken advantage of, manipulated, or co-opted. In your examples above, super-exploitation is on the one hand about cruelty, but also perhaps about coercion. Then, too, there is the issue of wages and whether that factors into the measure.

Even with these different definitions, I think the concept of exploitation retains value as an insistent reminder that issues of social justice are embedded in the uneven relationships involved in data labor and geospatial labor. Certainly, we should deploy the term with nuance and complicate it in the same ways that the analyses of racial and sexual oppression have changed to incorporate agency, contradiction, and the reality that we occupy numerous subject positions beyond merely "oppressor" and "oppressed" or "exploiter" and "exploited," and crucially, that those positions are linked to relationships between spaces and places as well.

These are all issues I think digital labor can get us to examine but that I find applicable in many cases of "non-digital" labor as well. If I'm making an extremely high wage, but my working conditions demand a punishing amount of work hours, am I exploited? This is where you hear about the "white-collar sweatshop."<sup>39</sup> Can one exploit oneself? The traditional roles may be upended. Part of the issue also seems to be some difficulty reconciling injustice with the pleasure and value that data labor or geospatial labor generates for the data worker/user. But are fun and exploitation necessarily mutual exclusions? Should our recognition of exploitation depend on the user, subject, or producer being aware of their exploitation, or beyond that, evaluating that as the primary characterization of their work? Maybe what we need here are more ways of understanding what it means to work in contexts of both concentrated and dispersed power where things are neither exclusively free or not. I like your term "free-ish" in that it implies a sense of contradiction or ambivalence to these services. You seem to be reacting against the ways that

the discourses of exploitation and of sweatshops suggest a bleak picture of worker abuse, but does that framing—an intentionally political one—necessarily preclude other overlapping elements? Isn't the mixture of expropriation, exploitation, fulfillment, resentment, and even enjoyment quite common in our experiences of work?

All of this urges us to rethink how we characterize different kinds of work. Service, as a category of work and of industry, but also as a category of consumption, is a way to look at contradictory labor and consumption processes. Many of your examples talk about labor that is captured in the process of simultaneously consuming and producing a service, forcing us to consider the blending of these activities. This is incredibly thought-provoking to the extent that the exclusivity of these categories bears questioning in all kinds of realms, not just in terms of Internet connectedness to work, objects, and space. I think this pushes the limits of how we define a factory and also the concept of service itself.

**TS** We agree on the ambivalences, but I still think expropriation is more apt. To explore the ambiguities of expropriation further, let's have a look at the case of the Amazon.com book reviewers. The most productive among them have contributed over 20,000 reviews without ever getting paid. People like Harriet Klausner, the former number one reviewer, think of their volunteer labor as a career, and cherish their status within the community of reviewers. The motivations of a reviewer who ranks less prominently are unclear. Harriet Klausner was number #1.<sup>40</sup> She is (or at least used to be) the Queen of the reviewer community. But what is in it for reviewer number #1149? For those reviewers, there is still the fact that they can possibly influence people with their opinion of a given book. If their reviews are well-written and persuasive, they may well have some power to influence prospective book purchases.

Another example of volunteerism is Google's Image Labeler. The premise is that machines are notoriously bad at recognizing what is in an image. When you do an image search on Google, the search engine has no way of determining if there really is a cat in the picture; it simply analyzes the frequency of the term "cat" in the proximity of the image tag. Now, with the assistance of this game, Google's Image Labeler, vast numbers of images are tagged with keywords that make the image searchable. How does it work? If you go to the website and start playing, you are anonymously paired up with a partner. You are both shown the same image

and when the keywords that you find to describe the image matches, both of you can move on to the next picture and your score goes up. Luis von Ahn, the creator of the ESP game that was then bought by Google, emphasizes that his game makes people do all the work by taking advantage of their desire to be entertained. You pay for your play.

Like in many other areas of the economy, Google benefits because their product is improving through this kind of volunteer work but it is also the public at large that is served by this boost of the image search capability.

You will find further variants of voluntary digital labor on websites like Apple.com where thousands of people who paid for Apple products now spend their free time and cognitive surplus to perform customer service functions that were previously performed by paid Apple employees. Surely, this isn't at all exclusive to Apple; this practice of unpaid volunteering for commercial entities is deeply naturalized and can be found all across the Web.

A little more surprising is the example of volunteers who work entire shifts without compensation. The *New York Times* reported about people who voluntarily work pro bono for the telecommunications company Verizon by providing customer service online. One such volunteer stated that he gets a lot of satisfaction out of helping Verizon customers to make better use of Verizon products and he went on to say that one of his answers can help thousands of people. And Verizon may even add a red square around his online profile.<sup>41</sup> Praise, social capital, and peer recognition are currencies in this post crunch economy where more than 30% of people who just entered the job market cannot find a job or already gave up looking.

In the late 1990s, AOL toyed with the communitarian spirits and hopes of voluntary chat room moderators who worked for free in anticipation of future employment with the company. When that didn't come through, some of them sued for back wages.

Users of Mechanical Turk reported that they appreciate the immersion of clicking mindlessly for hours while watching television at the same time. Workers in areas of India where English is not the first language use Mechanical Turk to improve their command of the English language. Critic and legal scholar Lawrence Lessig writes in his book *Remix*, that



Faces of Mechanical Turk (Courtesy of Andy Baio, waxy.org)

if those within the sharing economy begin to think of themselves as tools of a commercial economy, they will be less willing to play.<sup>42</sup> I am not sure that the fact that people recognize that they are exploited or expropriated would in fact turn them away from the work. People engage in all kinds of exploitative arrangements knowingly, out of financial desperation. There is fairly wide spread interest, for example, in exploring these new landscapes of geographically distributed digital labor as a way of delivering opportunities to the staggering numbers of the currently unemployed.

Even the highest traffic blogs make relatively small amounts of money from Google's AdSense but they also generated fairly small amounts of economic value for Google. At the same time, Google is able to generate wealth through what I may call the *long tail of digital labor*; even if they only make small amounts of money from each individual blogger, there is an additive quality to the value of digital labor that millions of bloggers bring about. The degree to which bloggers are used is microscopic but multiplied by almost two hundred million, it adds up to significant wealth. We call this micro-exploitation, or expropriation.

This kind of volunteerism is part and parcel of the economy. In the United States, technology gurus promise that our life will become ever more efficient, personalized, and safe. Convenience and this American technology spectacle are paid for with privacy and the complete monetization of each and every part of our lives; the Italian philosopher Paolo Virno even suggests that our life itself is put to work. For him, the distinction between labor time and non-labor time has disappeared.

One difference to traditional forms of labor is that we are now exposed to real-time, always-on data collection and analysis. We are all real-timers now. We are feeding our data to commercial enterprises and the government.

As I said before, the government buys those data largely from private information brokers. To make matters worse, the information that is recorded and aggregated could be false. The consequences of such erroneous information—dubious data—in the hands of the government can be far more devastating than getting fired from a job or having trouble getting health insurance; those affected can face arrest or deportation and there is enough we can do about it as we cannot access these data.



Maine Fusion Center (Courtesy of Public Intelligence)

Just think of the more than seventy Fusion Centers all across United States, which merge information from various levels of government, the military, intelligence services, and the private sector. Fusion Centers were first established in the fall of 2001 to fight terrorism and detect the activities of foreign spies. But in reality, these Fusion Centers uncomfortably match private and public interests. A FBI agent may sit next to a highway patrol officer who sits next to a representative from a large corporation. The ACLU and other institutions are warning us of “mission creep” in these centers, which refers to the expansion of the original goals of these centers. Once the tools of control are in place, it is tempting to use them to catch criminals or even stop insurance fraud, a practice that was started in California already. Beyond the gray areas and complexities of exploitation and expropriation, it is these realities that I worry about most.

On the one hand services like Foursquare can be incredibly useful. However, I also have to acknowledge the dark visions of Total Information Awareness that were put forward by former national security adviser Admiral John Poindexter and despite the fact that Congress has rejected his plan, today's Terrorism Information Awareness Act doesn't really look all that different because it provides the government with legal justifications to “ingest” information from a plethora of databases, blogs, e-mail traffic, intelligence reports, and soon the mighty wealth of data pulled from the Internet of Things. This makes 1984, J. Edgar Hoover,

or the smell archives of the former East German Stasi look (and smell) like an old shoe.

Even Secretary of State Hillary Clinton closely associated security with technology on the occasion of her major policy speech on Internet Freedom in January 2010. She praised the fact that some of the victims of the earthquake in Haiti could be rescued from under the rubble because their GPS cell phones made them findable. I'm of course on board with her optimism in this specific case but I also remember that the current administration, despite its many achievements, has re-authorized three contentious provisions of the US Patriot Act. Since 2004, the US government started over two hundred data mining programs, more than thirty-five of which are capable of linking the harvested data to specific individuals. While most Americans have never heard of companies like ChoicePoint or Acxiom, they are involved in a vast number of background checks relating to decisions about your health insurance, car insurance, employment, and rental agreements. Again, we do not have access to the data mosaic that these companies compile. I also cannot forget that Eric Lichtenblau of the *New York Times* revealed the fact that the National Security Agency recorded millions of phone calls by US citizens on domestic soil, which most legal scholars would agree is a violation of the 4th amendment; it is unconstitutional. Private information brokers sell our data not only in the context of commerce but also for the purposes of government surveillance. I will come back to this idea of an "Orwellian economy" and more importantly, what we can do about it. We can't just point out what's wrong and then call it a day. We need to think about concrete political action,

**LYL** Again, we are very much in agreement about the blurring of state and corporate interests and the possibility and reality of state abuse of power. I would add to the problem of "mission creep" a kind of "state sector creep" where the breach of boundary between state and corporation extends to one between state and non-profit sector. Geographers and urbanists speak of this as the "shadow state," a term coined by Jennifer Wolch to talk about the incorporation of the voluntary sector into the state in response to declining welfare state provisions in the US.<sup>43</sup> More recently, activists and activist-scholars have taken on the Non-Profit Industrial Complex for being less about emancipation and more about its own self-generation and perpetuation of the status quo (*The Revolution Will Not Be Funded*, 2007).<sup>44</sup>

Both of these examples rely on the creep of information, and money, between these sectors.

But to stay with labor exploitation just a little longer, I think your term "micro-exploitation" may be narrowing the gap between our interpretations. And the idea that these micro-jobs cumulatively do offer some income generation to the global ranks of the unemployed echoes the debates around whether sweatshops are good or bad. Some view them as a necessary and beneficial rung on the ladder of industrial and economic development. Journalist Sameena Ahmad argues this position against Naomi Klein<sup>45</sup> and comes disturbingly close to claiming that corporate brands and outsourcing promote democracy and social justice in developing countries, a notion you have criticized around the celebration of Twitter. But to help sketch out the range, could you give an example of a service or tool that you find truly exploitative?

**TS** Of course. Exploitation in new social media environments is rarely fertilized by sweat and watered by the tears of the seven-year-old child who works sixteen-hour days in the factory. This kind of exploitation, powerfully described by Marx, still exists today, even in the United States, sometimes even adjacent to each other in New York City. I mentioned MTurk but another lurid example is Facebook's self-translation application, which was launched late in 2007.



Faces of Mechanical Turk (Courtesy of Andy Baio, waxy.org)

The *Los Angeles Times* article reads: “users around the world are translating Facebook’s visible framework into nearly two dozen languages—for free.”<sup>46</sup> The move to translate the site’s interface into so many languages was rushed because from Germany to China, many Facebook clones had emerged and got rapid traction. It is astonishing that a company with the net worth of Facebook wouldn’t hire professional translators who would have done a fine and probably more accurate job. However, Facebook had no problem finding volunteers. Close to 10,000 people helped translate the site’s interface and they did so rapidly; the German version took a short two weeks. On the homepage of the translation application it says: “we have opened the translation process up to the community because you know best how Facebook should be translated into your language.” This is definitely disingenuous but nevertheless in the Russian translation section alone, some 2,190 amateur translators were motivated enough to submit 40,759 translations of language used in Facebook’s interface (as of April 2008). I contributed a little bit to the Russian translation and could see how excited users were to be able to decide what the best translation of words like “poke” would be. But while I acknowledge some joy in the translation process I do think that this translation practice was exploitative in the sense that users volunteered and performed what is otherwise well-paid work for free. On the other hand it would be difficult to talk of deception in the context of these Russian volunteers. They knew what they got themselves into and didn’t expect remuneration. One explanation for their participation may be that they are deeply “encultured” into capitalist ideology that may make the association with a large dynamic brand seem desirable.

Another example may be more familiar as it received significant media attention. I am talking about the 100,000 “gold farmers” who worked in China’s gaming factories four years ago—far outside of urban areas earning virtual currency by shooting virtual enemies in online games.<sup>47</sup> There are moments of exploitation where Internet users are indeed clearly utilized in a cruel manner. There are stories of gold farmers sleeping on the floor next to their computers.

But while “gold farmers” and Facebook lay translators make for dazzling stories, they are not representative of what happens online. Both expropriation and exploitation speak to the stark ethical problems with participation in the social environments of the Internet.

**LYL** I agree, although I suspect sweat, tears, and sixteen-hour days are sometimes entirely appropriate descriptions of digital labor! Do these ethical problems bring us back to thinking about the role of the state and the need for regulation of a potentially unjust social relationship, especially one that takes place outside any recognized workplace? In garment factories and restaurants there is rampant lack of enforcement of existing labor law. In other less formalized labor, there is the need to establish and push the law, say around what constitutes overtime for a live-in domestic worker.

But what about in the social factories you describe? Again, it seems to me an extension of the realm of work that takes place in the informal economy. The parallels are strong in terms of the structure of this work, if we look at the “piece rate” wage system, which traditionally is often connected with work in the informal economy. So the MTurk worker and the garment worker, for example, are each performing a kind of contingent labor in which the unit of work itself is broken down into a small piece so as to allow for flexibility in contracting. Of course, in the garment industry or domestic work, this type of work lends itself to being unregulated.



Lewis Hine, Annie Fedele, 22 Horce Street, Somerville, Mass. Doing crochet on underwear in dirty kitchen. (Courtesy of the Library of Congress.)



Lewis Hine, Home work on tags. (Courtesy of the Library of Congress.)

With distributed waged labor, it seems we agree on its potential to exploit in the classic sense of alienated labor, wages, and working conditions. To continue with the parallel, if part of this form of labor is its dispersal to sites across the globe, then digital examples such as MTurk and Txteagle are not different from the commodity chains we trace in the garment industry. A typical commodity chain for a piece of clothing might begin with raw materials, such as cloth, made in one place or country; cutting, stitching, assembly, and finishing in a second; packaging and shipping in a third; and design, marketing, and retailing in a fourth or fifth. Several parts of this process may take place in a space not easily recognized as a workplace, such as a garment worker's home or the stoop or street, or an underground factory in Sunset Park, Brooklyn with blacked-out windows.

Like the MTurk worker, the textile worker is the lowest waged along the chain, and does repetitive tasks that cannot be mechanized. The difference is of course the use of the Internet or mobile phone to perform the labor. But isn't the spatial disintegration of the work the same? In fact, the appeal you suggest such work offers to those who perform it are the same features often touted to garment workers who do "homework" of clothing, or piecemeal assembly at home. Sewing a couple of seams and button holes, like inputting, categorizing, or translating small pieces of data, can be done in your "spare time" at the pace you like, among and with your family and friends, in the social environment of your choice. However, pieceworkers I have spoken to have also noted the downside of such homework arrangements. There is no regulation of the workplace, obviously, and family members are drawn in as part of the laboring unit. Parents might exploit their children to do such work. Low wages and piece rates further push workers to speed up their work and do as many units as possible in their "off time," often in addition to other jobs they have. The spatial dispersal of this work also mirrors the vertical disintegration of the industry, and with it, the shielding of those in control from accountability for the conditions of work. Outsourcing thus serves as a method for corporations to avoid labor (and environmental) regulation.

This brings to mind David Harvey's work, someone urbanists and architects will be very familiar with. In particular, I'm thinking of Harvey's seminal concept of the "spatial fix," in which he examines the relationship between capital and space.<sup>48</sup> The double meaning refers to

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Mechanical Turk homepage. (Courtesy of Amazon.com.)



Lewis Hine, Family of Mrs. Donovan . . . tying tags for Dennison Co. (Courtesy of the Library of Congress.)

capital's geographic expansion and investment across space (the literal "fixing" of capital in the land and built environment) as a way to resolve (or "fix") the crisis of over-accumulation. Most often, the spatial fix invokes capital mobility, in which new locations resolve the underutilization of surpluses. But it is worth remembering both sides of Harvey's argument. The spatial fix also represents the intensification of connections and investment in local places through infrastructure, land, real estate, etc.; that territorialization means there is a distinct spatiality to where distributed labor markets are as well. It is no accident that garment workers are overwhelmingly immigrant women in industrialized cities or rural-to-urban migrant women in export processing zones in developing countries. The particular "face" and place of distributed digital labor would seem to represent its own distinct geography, albeit one that may be harder still to pin down. We might even be able to conceive of the face and place of the other categories of digital labor as well, would you agree?

**TS** Yes, we agree that distributed waged labor fits effortlessly into historical frameworks of exploitation. But again, I think the

challenge is to look at the categories of labor that significantly break out in terms of scale, scope, speed, social convergence, and genuine utility. Online activities liberate and constrain us simultaneously. Do you want to turn a blind eye to these important particularities?

**LYL** Absolutely not. I do not want to overlook them but instead to find their linkage with other forms of labor that also break from the frame, and that people have thought about extensively in theorizing work. Unpaid data labor, your second category, reminds me of the pioneering work of the Wages for Housework Campaign of the 1970s, led by Selma James, Mariarosa Dalla Costa, and others.<sup>49</sup> They argued for the wage compensation of "caring work" including childcare, elder care, cleaning, cooking, and other domestic labor done primarily by women. This is particularly relevant for service work where there is no clear product to remind us of the labor process involved in its making. Debated then, and still, is the idea that unpaid labor is unequivocally labor, and by being unpaid, it becomes invisible in the economy it contributes to.

Similar debates have arisen in my research around women's domestic work for their families in immigrant communities in New York. When community labor organizers examine the particular situation of women workers, they draw attention to not only the conditions of paid domestic work, but also the unpaid domestic work they do in their own families that contributes to the "double day." These organizers argue that devaluing such work carries over and contributes to the devaluing of paid caregiving work, such as home healthcare, babysitting, housecleaning, and many of the other domestic industries where immigrants in the sweatshop city are concentrated. Yet there is real contention over work that is also care. In my research, I also spoke with some immigrant women workers who feel their caregiving work within their own families is not work at all, but something done out of love, devotion, or other motivations. They even say calling it labor and trying to monetize it devalues and "cheapens" it. I'm reminded of your fan labor category, where devotion is as much the social product as anything.

One might similarly argue that the unpaid data provision of blogging, updates, and social networking may be enjoyable, and motivated by personal satisfaction, but still generates value for the economy that is made invisible and therefore contributes to the notion that similar paid forms of work can be undervalued. After all, someone else does it for



free and even enjoys it. This reinforces the idea that we need to delink enjoyment and personal satisfaction from whether particular forms of work are underpaid or unpaid and potentially exploitative. Notably, in 1995, at the UN Fourth World Conference on Women, the Platform for Action called for countries to measure the value of unwaged caring and other work for inclusion in national statistics.<sup>50</sup> On its face, caregiving work might not seem extremely relevant to unpaid data provision. Uploading content is qualitatively different from cleaning someone's house or making a meal. However, it is precisely the need to examine different forms of work as labor that distinguishes the Wages for Housework campaign and its descendants.

In terms of your third category, geospatial labor, we agree on the significant problem of surveillance through new forms. These forms of labor create potentially new ways for corporations and the state to monitor populations and activities. The double edge between usefulness and violation that you talk about invokes the now familiar post-9/11 policy trade-off: have public safety or have your civil liberties, but do not expect both. And yet, for many poor, working class, immigrant communities of color, there was never a trade to make. Here again the collapse of surveillance from the state and from employers evokes the social factory understood most broadly.

I recall walking around Chinatown right after September 11 and seeing every level of the state embodied literally in those standing on street corners: New York City Police; Port Authority Police; State Troopers; the National Guard; Bureau of Alcohol, Tobacco, and Firearms agents; FBI agents; and US federal Marshals. It was a staggering instance of what Mike Davis described as the "militarized New Urban Order" in Los Angeles that followed the unrest of 1992.<sup>51</sup> Anyone walking past certain check points was asked to show identification, to give the address where they lived or where they worked, to justify their movements. Not surprisingly, many immigrant workers stopped going to work or avoided leaving their homes. The confluence is also present in the application of the Employer Sanctions provisions of the Immigration Reform and Control Act of 1986 (IRCA). Where this provision was intended to penalize employers for knowingly hiring undocumented immigrants, one effect has been to increase discrimination of immigrants—documented, undocumented, and even naturalized citizens or citizens by birthright. In my research in Chinatown, for example, community organizers report that factory

bosses use IRCA as a threat in order to control undocumented workers, thus closing the gap between employer and state surveillance. Arizona's passage in April 2010 of the extraordinarily sweeping immigration law, Senate Bill 1070, now being tested in the courts, represents an extreme state-level extension of police powers against anyone suspected of being undocumented. Similarly, it was state workers at the Department of Workforce Services who allegedly leaked 1,300 names of allegedly undocumented Latino/a immigrants in Utah in July 2010.

**TS** But we would need to distinguish between these state and corporate abuses of police power and constitutional and civil rights and the separate issue of labor as exploitation, right?

**LYL** Certainly. I don't mean to conflate the two issues. But instead of thinking of the expansion and "creep" of state powers as concerns specific to immigrant communities where undocumented immigrants live or to places where the state is not necessarily viewed benevolently, we can see how the networked object reveals a much wider ubiquity. The Internet of Things promotes the possibility of what we might call "state geo-omnipresence." As you show, the work that objects do to create networks is not merely about commercial relationships, advertising, or extracting labor; it also incorporates the eye of the state. The overlay of neoliberal ideas about individual choice may obscure this dual function.

**TS** Yes, convenience and a variety of opportunities for consumption will swaddle more and more people into these ever-present networks of hidden commercial and governmental control. Similarly, legal scholar Daniel Solove asks "How can the free flow of information make us more free yet less free as well?"<sup>52</sup> We'll opt into these systems simply by crossing the street.

**LYL** Right, and as with cell phone tracking and Facebook privacy settings, users are told if they are worried, to opt out. No one is making you carry that phone around. But if, as you note, the Internet of Things is expanding, then opting out becomes less and less of an option. Indeed, as opting in becomes the default, opting out requires more and more specialized labor itself. Users are often confounded about how to undo Facebook settings, shield personal information, turn things off. Never mind what to do after the fact, if say I am captured on

Google Street View in an identifiable location that draws attention or if my idiosyncratic shopping habits are noted or if the particular route I take on my commute is tracked? To create barriers between myself and the networked object, between myself and information about me, requires work.

**TS** Exactly. Who has the time, know-how, and continuous attentiveness to privacy? And more importantly, what is our response? I think it is unrealistic to ask for all instruments of corporate surveillance to be shut down by 4:00 am tomorrow morning. Read/write (and potentially delete) privileges for the data that are recorded about us, however, is a commonsensical demand that could be realized in the near future.

**LYL** I think we should demand more. Without being reductive or taking away from the agency of these participants in the social environments of the Web, there is a neoliberal victory of discourse and ideology in the argument that social benefit precludes exploitation taking place or that security trumps privacy. Individualism, consumption as liberation, the whole “commodify your dissent” idea, to use the *Baffler* phrase,<sup>53</sup> these notions return us to the Gramscian notion of hegemony. There is an issue of political ideology that accompanies the idea of the new, liberatory, or at least less exploitative Internet of Things, that denies the possibility that capitalist logics are still primarily at work. Profit we can seem to recognize, but not exploitation. But profit, exploitation, and alienation can co-exist quite easily with a sense of community and collaboration. We can see this erasure performed by much of the urban planning literature on technology-driven industrial districts. AnnaLee Saxenian’s work on Silicon Valley and Route 128, for instance, idealizes and celebrates the competitive but collaborative network of decentralized, flexible small firms and their culture of innovation.<sup>54</sup> Bennett Harrison’s work is a corrective to this notion, showing that even in a vertically disintegrated firm structure, large firms can retain power over networks of suppliers and other smaller firms.<sup>55</sup>

These are fundamentally urban and spatial issues in that these processes and the people taking part in them are always grounded somewhere. Urban studies, urban planning, architecture, geography, regional science and the spatial sciences suggest that new technologies always reconfigure space because the spatial and the social are interconnected.

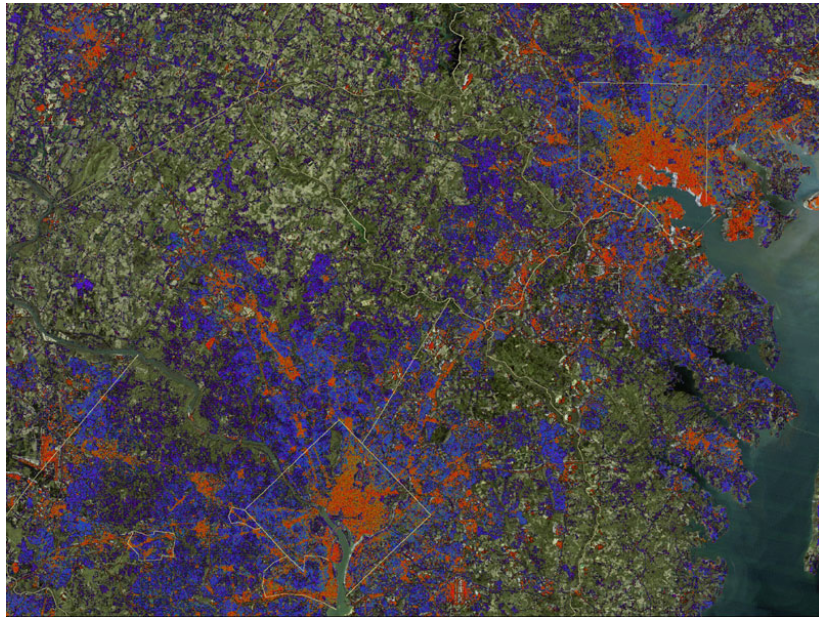
However, there are ways in which geo-spatial object-making also reinforces the geo-political landscape at the global, national, state, and local levels. The digital divide is an obvious example in which who you are, where you are, and your ability to access and influence new technologies are intertwined.

We always need to consider the identities of the social actors involved. There is a tendency to strip away the identity of the agent at certain times, but not others. So, I was really intrigued by your answer to the question, “who is the Mechanical Turk worker?” You suggested two groups of MTurk workers dominate: American Midwestern workers who may be doing this work as a form of entertainment, and Indian workers who want to learn English. Here Lisa Nakamura’s work<sup>56</sup> is valuable for showing how these power relationships map onto a geo-political set of relationships that are fundamentally and dramatically uneven. And I think the question of exploitation is not erased but instead multi- and perhaps over-determined by these multiple reasons for doing work. So if I do this because I can do it in my spare time and it’s fun and I make a little money, and you do it because you are in extreme poverty and it’s one form of work you have access to and perhaps you want to learn a skill or language, does that take away from the possibility and likelihood that exploitation is taking place for both of us? If we contextualize this work within urban and other regional and national environments, I think we can have multiple, even contradictory readings that support both the potential for pleasure and for exploitation.

In line with the discussion of pleasure, which would be another way of saying play and fun, I think it’s useful to consider the analyses of the complicated relationship between pleasure and exploitation from other fields. Gender studies and feminist studies, for instance, have long been engaged in an extensive and contested discussion of the sex industry as a site of exploitation, objectification, and coercion, but also, for some, of pleasure, self-empowerment, and sex-positivity. Sexual labor then, suggests that either/or models of exploitation/pleasure are too reductive to capture the simultaneity of these elements. I see a strong parallel to MTurk, but also the other categories of unwaged digital labor. And once again, just because some workers in this field choose to do it and find it pleasurable, does not cancel out the issue of it being labor and being exploitative. But probably we do need better language and categories to describe and analyze the extensions of unequal power.

**TS** Let me try to respond to the neoliberal triumph of discourse and ideology; I do not think that pleasure, collaboration or social benefit preclude exploitation. Your earlier comparison of digital labor to sex work is compelling for that same reason. But there are also discontinuities operative in that tension between digital labor and the non-digital work that you describe. Optimism over the benefits of digital labor must be tempered with the awareness of potential hazards, but we can't ignore the complexities that emerge with the digital. The desire for networked sociality is more granular than the current binary model exploitation/non-exploitation suggests. One such particularity is the social convergence of acquaintances, colleagues, lovers and ex-lovers, and relatives in the quasi-private milieus of today's social networking services. Such social convergence does not rule the work places that you characterized.

Clearly, users and the owners of social information spaces are differentially positioned, which also relates to discontinuities. First, I think that the scale, breakneck speed, pervasiveness, and invisibility are different.



This image shows Landsat data from March and April 1998 of the Washington/Baltimore area. A special algorithm has been applied to illuminate the changes in low-density residential land use, which exemplify sprawl. (Photo provided by <http://earthobservatory.nasa.gov>)

In addition, it may be worth noting that most of the kinds of labor that I am discussing here are not situated in any kind of traditional work environment. Your research focuses on the garment and restaurant industry but digital labor is really better understood through the perspective of the social factory, which emphasizes that workers who are not paid, generate the economic value outside the recognizable workplace.

To get to further discontinuities, I may ask: What are characteristics of Facebook that organize the users' pleasure? There is indeed a social convergence of acquaintances, colleagues, lovers and ex-lovers, and relatives in the quasi-private milieus of today's social networking services. Perhaps you can find a discontinuity here. The comparison to unacknowledged, domestic work that you put forward makes a lot of sense, especially with regards to the invisibility of digital labor. What exactly does its entertainment value consist of? From the very early days of Facebook, Mark Zuckerberg emphasized that the site wasn't solely about entertainment but that he aspires to building a social utility. What happens in the process of using social networking services? What is the relationship between pleasure and ideology? Is this pleasure just a trick that is used to manipulate the masses to lock them into the eternal status quo of exploitation? On the one hand, Facebook functions like a Band-Aid that addresses, however temporarily, problems resulting from urban sprawl, like the difficulty of children and young adults to "hang out" together in the face of a pervasive culture of fear among parents. "Kids" may prefer face-to-face encounters but as that is often not an option, social networking services provide a space to "hang out" with friends.

Facebook offers true use value for the life of many individuals. One in eight Americans found their life partner on a social networking service, for example. Users have access to knowledge, informal mentoring, event updates, insight into the lives and minds of their colleagues and acquaintances and friends. All this could be considered pleasurable and of genuine utility. It is hard for me to recognize a similar degree of so multifaceted helpfulness in the traditional work settings that you describe.

But again, there are continuities, and one of them is the institutionalization, the confinement of immigrant workers to their workplace. It is true that Facebook users cannot take any of their photos, social graph (list of friends), or activity streams with them when they decide that it is time to switch to another platform. They are locked in.

Especially for undocumented immigrants, it is difficult to report abuse. Social networking services like Facebook are also incredibly hard to leave gracefully but, of course, that parallel is not unproblematic. We cannot really compare the suffering and exploitation of somebody working in a sweatshop with the issues of the “worried well” and their Facebook accounts. To workers who grind away in a garage or restaurant, any critique of the Social Web will sound like an elitist problem that they wished they had. There are definite qualitative differences between the suffering of immigrant workers and the problems of the more 500 million Facebook users.

In the dot-com world (and among religious sects), it is a common business model to make your organization or service ridiculously easy to join and impossibly hard to leave. Of course, it is possible to delete your Facebook account but for those entering the job market, there is also a professional and social imperative to partake.

**LYL** OK, I think our disagreement remains in place. I would say your point about the social factory argues for extending our ideas of where exploitation occurs and between whom and for getting us “outside the recognizable workplace,” as you put it. I am centrally interested in expanding our notion of the workplace beyond the traditional factory site, as part of the ongoing reconfiguration and reevaluation of work. And I am not suggesting that the severity of exploitation or of labor abuses can be seen equivalently in all these cases. However, I still say that there is political value in seeing the continuities as well as the complexities. Sociality, for example, is an extremely big part of a lot of traditional workplaces. In ethnically segregated environments, your co-workers are often your neighbors, friends, enemies, family, etc. In migration studies, the social network as a mechanism for economic and political integration and survival generates enormous attention. Less attention is paid to the way social networks are potentially constraining and create obligations, limitations, and even hazards. I’m not saying these are identical cases, but I see parallels. And again, for me exploitation does not necessarily conjure extreme suffering or egregious abuse.

But maybe the focus on the worker is less helpful than returning to the object, the commodity. Perhaps what we need is to rethink the concept of the “read/write object” not just as any object, but as a commodity situated in the urban environment. When we look at commodity chains, we

usually see a structure of disproportionate unevenly distributed control and benefit. Users/producers may have some control, but the lion’s share is concentrated at the top. Ultimate control lies elsewhere when someone can pull the plug on the platform itself. Even neo-classical economics would agree here. Certainly, at the IPF conference, discussion of Google consistently invoked the economic concepts of monopoly and oligopoly. These issues of course suggest the need to think about state regulation. How does policy figure into this?

**TS** Certainly, regulation is important but it isn’t entirely clear what that process would look like. In other words, should it really be the Federal Communications Commission (FCC) that is in charge of the Internet? So far, Congress hasn’t given the FCC the authority to regulate the Internet. The recent example of the AOL-owned social networking service Bebo made it very clear, however, that regulation is generally needed. AOL had bought the company in 2008 for \$850 million but in April 2010 it announced that it considered shutting down the site, as that would be cheaper than selling it. In the end, AOL did sell Bebo but it is remarkable that they pondered the option of shutting it down, which would have meant that thousands of users would have lost all their data.<sup>57</sup> Situations like this clearly call for government regulation as a guardian of the public interest, in my opinion. Other examples that call for regula-



City Time Hand Scanner (Courtesy of Laura Y. Liu)

tion include frictions between what users want to do and what platform owners allow them to perform. An example of that is the creation of several profiles and particularly the creation of anonymous profiles, as the German sociologist Jan Schmidt points out.<sup>58</sup> Schmidt also points to the need for “informational self-determination,” the broad control over the users’ self-presentation, for example. Even more importantly, I argue for a strong need for robust antitrust regulation to determine the power of the oligarchical sites of today’s Internet.

**LYL** But too often government is not acting as the guardian of public interest and seems to be closely aligned with corporate interests instead. For example, in 1998 Mayor Giuliani contracted with Science Applications International Corporation (SAIC), a massive defense contractor, to create a computerized time-clock system for New York City employees called City Time, which affects roughly 165,000 workers.<sup>59</sup> The program has recently come under investigation by the City Comptroller, John Liu (no relation), for funneling huge amounts of money to SAIC and other contractors over the years. This criticism dovetails with the objection by city employees over City Time’s use of biometric “hand geometry” scanners in place of time sheets, a definite “real time” technology.

Several city agencies, represented by the municipal union, District Council 37, have been battling with the Bloomberg Administration for years over the scanners. Perhaps the most vocal groups have been the Civil Service Technical Guild (Local 375), which includes the city’s engineers, architects, urban planners, scientists, and other technical workers, and the Department of Parks and Recreation. They have objected to the technology as demeaning and controlling.<sup>60</sup> More troubling, I would say, is the role of SAIC as a “stealth corporation” little known despite being a hugely dominant player in government contracts, according to a scathing exposé in *Vanity Fair* in 2007.<sup>61</sup> As a giant in military contracts, SAIC trades in what it calls “information dominance” and “information warfare.” The case illustrates a counterexample to Mary in her Mini Cooper.

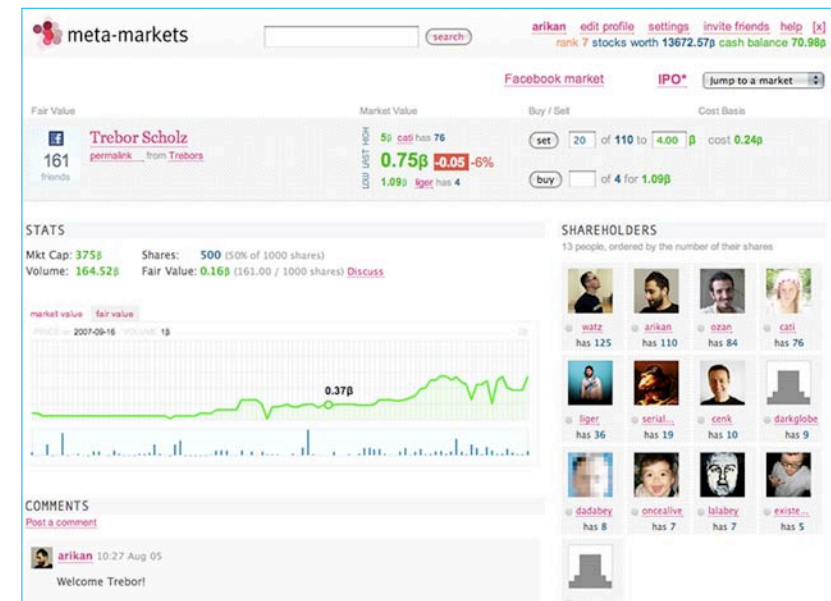
**TS** In Mary’s case, control is far less visible than the biometric time-clock in the workplace. But it’s interesting that SAIC is so little known; there’s definitely a parallel to Fusion Centers but also “stealth surveillance” companies like ChoicePoint. We’d learn a lot if we could

rip the veil off these stealth companies. In the case of the digital billboard advertising campaign, BMW, the company behind the PR stunt, claims that they did not make use of the gathered data. Other companies, no doubt, would ruthlessly exploit this geo-spatial information.

We both agree that digital labor has reached the street. This phenomenon needs to be mapped and theorized, but ideas also need to lead to tangible solutions.

In the 1960s, Ted Nelson, one of the inventors of hypertext, dreamt of a network—Project Xanadu—in which each user would receive micro-payments for their minute contributions; this contribution may be as small as a blog entry or a comment.<sup>62</sup> Nelson’s financial formula wasn’t feasible given the complexities of international banking, for example. But his basic impetus that we should get something in return for our labor was useful.

Given that we are frequently participating unwillingly by providing data such as our activity stream unknowingly, I am calling this the “violence of participation,” substantiated by the fact that we cannot gracefully exit



Burak Arikan, Meta-Markets (Courtesy of Burak Arikan <http://burak-arikan.com/meta-markets>)

cognitive capture machines like Facebook. In other cases we cannot even join particular environments without giving away our personal information. Transparency and loss of privacy become the condition for our participation. There is a definite price to be paid as we cannot take our social graph, images, and other entries with us. Equally, nothing is free in the Internet of Things; our attention data and content pay for what looks at first like a free service. One of our central demands should be the valid exit strategy out of the oppressive constraints and fixtures of cognitive capitalism.

**LYL** Burak Arikan’s Metamarkets art project plays with this idea by creating a stock market for trading shares of “social web assets” produced through social networking. But while the Metamarket offers a sharp social commentary on cognitive capitalism and its stealth method for creating value, what can you tell us about tangible models for policy and regulation?

**TS** It is worth looking to policy decisions in the European Union because they are taking a harder stand when it comes to protecting the civil liberties of their citizens online. In 2009, the European union released a document called the “Safer Social Networking Principles for the EU,”<sup>63</sup> in which data protection, copyrights and other guidelines are brought together. It also provides human rights guidelines for Internet service providers. Germany, for example, released an official government statement in support of the Firefox browser because it allows for plug-ins that protect Internet users from commercial surveillance. In 2010, Google Street View was introduced in Germany but only under the condition that faces and license plates get blurred and real estate owners can opt-out of the inclusion of their property in Google Street View. This shows that companies are willing to air on the side of privacy if governments demand it.

With the new invisible worlds of network objects, such regulatory intervention becomes more urgent as these technologies become undercover agents of enterprises and intelligence gathering projects. Essentially, I do not believe that competition between companies will lead us to a situation in which the power balance between users and dot-com companies has significantly changed. Companies should indeed feel compelled to open their data silos and let users peruse what they have on them, but I think that the day that this will happen is in the all too distant future. What should be regulated?

First, we may ask how much power a company like Google or Facebook should really have. In 1998, Microsoft had to face anti-trust charges when it bundled its Internet Explorer browser without extra charge with every copy of its Windows operating system, which had a 90% market share at the time. Today, Facebook can force opt-in defaults on its 500 million users and get away with it. AOL can ponder shutting down Bebo because that would be cheaper than selling it. And none of these actions led to anti-trust charges.

Like Nelson, we can ask what we get in return for our digital labor, for becoming completely transparent in the eyes of business and law. Read/write access to the stories that are told about us must be a right of all people. Daniel Solove observes: “We want information to flow openly, for this is essential to a free society, yet we also want to have some control over the information that circulates about us, for this is essential to our freedom as well.”

We should be able to fact check the narratives and records about our patterns of behavior and we should know to whom these data are sold and for what purpose. We should then be able to either edit the information, reject certain classifications like sexuality or location data, or completely remove ourselves from these data warehouses after deleting all information about us. Various versions of a Bill of Rights for users of the Social Web are circulating online; one statement at Opensocial.org demands that user data must be portable, accessible, and verifiable. One pragmatic approach to the question of transparency would be disclosure. Each time when data is collected about us, we would be informed about it; we would learn for which purpose the data would be used. This could be implemented with a browser plug-in, for example, not unlike Firefox plug-ins like “RetailMeNot.” The legal scholar Frank Pascale suggests that if there is an equivalent to a credit report—something like a security report—then such records should be accessible for all persons in the US. However, I’m using many “should-statements” here and perhaps we should rather look at concrete procedures to put these things in place.

**LYL** You mean like a normative framework?

**TS** Yes. In his 1998 book *The Transparent Society*, David Brin describes the social system in which data collection is not ruled

out but equally distributed.<sup>65</sup> In other words, everybody becomes similarly transparent. To what extent such vision is realistic, remains to be seen. Privacy scholar Helen Nissenbaum argues that equally distributed transparency does not mean equal power in a social context of extreme power imbalance.<sup>66</sup> It isn't the same for somebody with far-reaching powers to become transparent.

**LYL** To go back to Bratton and Jeremijenko's third pamphlet in this series again, *Suspicious Images, Latent Interfaces*, they are productively critical of resting too easily on transparency as a political goal. They suggest that transparency of an object's production or consumption—and here we can add of its data about us—is inadequate without some way of impacting its narration, mediation, or active structure. The critique of transparency seems crucial. What else do we need to consider?

**TS** We may ask what reasonable expectations of remuneration for our digital labor may be. Nowadays, reasonable expectations of privacy melt into nothingness and for some people that just means that they will withdraw, go off the social media grid.

Nissenbaum projects that there will be two types of users. One will seek out alternative online social networking initiatives that are more sensitive to the contexts of information. The second type of user will “adjust their own patterns of sharing and revelation to the constraints and performances of design characteristics affecting information flows. Caution will result in less self-revelatory, more stereotypical displays in the vein of personal advertisements, less genuinely communicative. These displays might be compelling as public performances, less the stuff of genuine personal engagement.”<sup>67</sup>

In terms of the first type of user that Nissenbaum describes, there are already various free and open-source platforms that could be inhabited by migrating Internet users within weeks. This is a call to undermine ethically questionable social practices not merely by attacking them but by engaging in other practices, which would then function as an indirect critique. However, at least in the near future, Internet users are locked up in the monolithic, oligarchical services of the Web. N-1.cc,<sup>68</sup> Opennetwork, Crab Grass, Buddypress,<sup>69</sup> or even the for-pay Netscape-owned NING are all partial responses to the need for decentralization but they

will not lead to an overall coup d'état that brings all mainstream sites to their knees. One problem is the often lacking ease-of-use and absence of a decent graphical user interface of such alternative sites. Any software that users need to install on the server, is only of use for the small tech savvy elites of Internet users.

A related question is why there is no publicly funded social networking service, a NPR of social networking. Projects like Kickstarter<sup>70</sup> do help to finance projects in that vein but the problem of users who cannot easily migrate remains.

Even the comparatively small numbers of people who are leaving Facebook now are ultimately of little concern to the company. Facebook doesn't care about “Facebook Suicide,”<sup>71</sup> the numbers are too insignificant.

Short of significant government regulation and unprecedented pressure from users, a more participatory vision of the future of network culture for the public good will have no effect.

Overall, people mount little to no resistance to being used online because they are productive in ways that they are not even aware of; they simply muddle along passively. Or, they stand there like a deer in the headlights. It is high time that we organize beyond what I call the Spectacle of Internet Democracy where users simply negotiate better terms for their own consumptive activities. Facebook may have yet another “privacy glitch,” end-users may complain, and the company may pull back a little bit only to implement a feature that has a similar effect weeks later. Access to tools that allow for self-expression, doesn't turn citizens into politicized agents. To those in the US this might mean vigorously defending the Fourth Amendment, but it also means learning and teaching media fluency, “value fluency,” and privacy fluency. By value fluency we refer to an understanding of how Internet users create economical value on the Social Web. For now, the fifty clicks that are necessary to adjust Facebook's privacy settings in your favor are only the domain of a small digital elite. And even if this particular process changes, other barriers will be put in its place. In the face of the Internet of Things, when we don't even have the license agreement in front of us when we are crossing the street, we are all test subjects in a commercial petri dish. We are roaming the playgrounds of the sweatshop city.

**LYL** I agree. That sounds to me like a call to political action. Perhaps we can summarize a few key points we think are most important for readers to keep in mind as they think about what is to be done. From my view, comparing digital and non-digital realms of labor and control is valuable precisely for thinking about action. I argue for the political and intellectual value in seeing the connections between the realms of labor, the sites of work, the spaces of the city, and the role of the state across digital and non-digital labor, whereas you argue for a stronger sense of difference.

**TS** Well, it is difficult for me to broadly accept the term exploitation as a descriptor of the vast variety of experiences and practices that rule network culture. We are dealing with a social tapestry of enormous complexity. Again, I think that we need a more complex approach to the traditional rhetoric of exploitation. In the digital domain, a vast variety of “workful” social milieus are about cognitive exploitation. That becomes most obvious in the context of distributed labor (e.g., Mechanical Turk or Txteagle) but at other times, these characteristics are less suitable (e.g., Facebook). In the latter context I would talk of an expropriation of the Commons. In our discussion, I established that there are new phenomena; numerous discontinuities between traditional and contemporary forms of digital labor, even if these breaks are only partial. First and foremost, much of the work that I’m talking about is not paid, the vast majority of digital labor is performed for free. Beyond that, I think that the term exploitation applied to the Social Web is problematic because it belittles the suffering of undocumented immigrants, refugees, or workers in Kenyan stone quarries.

Most importantly, the scale of the social factory has exploded; it reaches all pockets of everyday life, every minute in the day, whether we are in the city, suburb or countryside. With the Internet of Things, all activities become monetizeable work. We are monitored and the resulting data creates profits. Beyond the scale issue, new instruments of expropriation are introduced with breakneck speed; they are completely pervasive, largely invisible, they are sprouting up everywhere, and this commercial surveillance is conducted in real time. Another possible discontinuity is the social intersection of colleagues, friends, ex-lovers, acquaintances, friends from high school, and family members—all converging in this workplace. In addition, an unprecedented degree

of utility results from digital labor. People experience unprecedented benefits. There are, of course, many continuities but there are also qualitatively new forms of control.

**LYL** Agreed. However, I still maintain that exploitation is a flexible concept that can accommodate a spectrum from the minor to the extreme. Politically, it’s more valuable to recognize micro-exploitation in some of the discontinuous situations brought by the Internet of Things than to deny its relevance. Sure, we could conceptualize a new politics around expropriation, but if we draw these various forms together, we expand the notion of work itself, which has implications for situations well beyond digital labor. Most importantly, we evaluate yet more domains where social reproduction and production come together, even if in a fragmentary way. The labor of social reproduction—caring for families, education, cultural practices, etc.—is often positioned as less important, less “real” labor, than production. Most of the time, it too is unpaid, and not uncoincidentally, devalued. Usually, it is gendered as women’s work. Much of the time, it disrupts the boundaries between social groups, creating intersections across friends, colleagues, family, in just the way you mention. Its existence in both public and private space creates a similar scale of ubiquity to the social factory. I do not deny that there are differences but I propose there are meaningful political alignments.

**TS** Well, we agree that there are more similarities than differences. Our views conform when it comes to my call for a value fluency, by which I refer to a broad understanding of the mechanisms of commercial surveillance. At the same time, I am emphasizing a privacy fluency, which speaks to governmental “dataveillance.” When we are talking about any kind of new media fluency, it is important to first dispel the myth of the digital native: people born after 1980, generations that grew up enmeshed in digital technologies. Their familiarity doesn’t mean that they are fluent when it comes to the ways that their privacy is invaded or economic value is extracted from them. Youth do not magically intuit these literacies. In fact, they have been so naturalized into expropriation that it is extremely hard for them to recognize when they are used in this way. We also see eye to eye when it comes to the need for governmental regulations and in which areas this should take place, such as antitrust legislation and user protection (e.g., the Bebo example). Finally, we are in agreement on the proposal that data about us should be portable, accessible, and verifiable by us.



One response that we haven't discussed very much is the use of technologies against the intention of their creators, a route many hackers have followed. In 2009, Dr. Mark Gasson, a British researcher at the University of Reading, implanted a computer chip that was infected with a computer virus in his hand. The chip is a high-end RFID tag not unlike those that are implanted in cats and dogs. Every time the researcher uses his RFID tag to enter a building on the campus or start up his computer, he infects communication systems with his computer virus.<sup>72</sup>

**LYL** We have definite agreement on value fluency and regulation, especially around an increasingly fuzzy border between the state and contracted corporations, many of which like SAIC then subcontract to other private entities. And as you seem to have anticipated, we see a productive role for hackers, artists, activists, and even academics in redeploying technologies. I think of artist Judi Werthein's piece, the Brinco Shoe, designed for border crossing migrants.<sup>73</sup> The shoe incorporates a compass, a flashlight, painkillers and a map. Even though there is nothing digital about the shoe, one can see it transformed into an integrated object quite easily.

Without deferring to a pollyanna optimism, I think we both believe in the sphere of social action of all kinds as a motor for change.

Another point I would add is that we are both acutely aware of the spatial and scalar dimensions of the Internet of Things being embedded in space. New spatial configurations demand new social responses and this is no exception. We seem to agree that no one space or scale of interface and mediation can be essentialized as a privileged site. This seems very much in line with the way that Bratton and Jeremijenko refuse the idealization of the local while also reaching for a structure of participation at the micro level that can aggregate into a larger event. This is no different from any political problem that requires action at the local level but needs to find a way past its parochialism. The Internet of Things, then, might suggest different catchment areas for different political issues, and require the ability to move between scales. You can draw a parallel in the workers' center model of community organizing that evades the divisions around workplace politics (e.g. the shop floor) and community politics (e.g. siting and land-use disputes). In my research I have found that, by creating political action at a scale and space that joins both, usually neighborhoods, workers' centers offer some resolution of this spatial divide, even if still fraught.

**TS** One of the key problems with organizing users on social networking services, especially those that are as colossal as Facebook, is the multinational nature of the platform in addition to the revolving door of such services with some users being active only for a short time. In August 2010, a British advertising expert founded a Facebook Union with the primary goal of drawing attention to the fact that "online tools really aren't free. We pay for them with micropayments of personal information." The negligibly small numbers of union members turns this project into a conceptual statement rather than a starting point for negotiation with real power. But that could change now, given that local organizing of Facebook users is becoming easier with their geo-locative feature called Places.<sup>74</sup> Now, a Facebook Local 1 in New York City is imaginable. The politics of abstract virtual space can now be transferred onto real space. Do you think that it is possible to organize online as if it were a sweatshop?

Laura, you mentioned to me that in traditional labor struggles this is referred to as the problem of the "unorganizable" worker. Many years ago I did a project on McDonald's and called several branches in New York City asking if they were unionized. None of them were organized and one reason for that is the fact that fast food workers are often only employed for very short periods of time and their income is so low that even a small union fee would be an undue financial burden.

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63



Brinco Shoe, Judi Werthein. (Courtesy of the artist.)



Facebook Users Union (Courtesy of <http://facebookusersunion.ning.com/>)

**LYL** Facebook Local 1! Let's start it. Yes, the unorganizable worker is, no surprise, contingent, perhaps not a native English speaker, often an immigrant, frequently an isolated worker, sometimes a temp, considered to be an independent contractor, very often poorly paid. Doesn't that remind you of a digital worker? In the 1980s and 1990s, Justice for Janitors (J4J) of SEIU, the Service Employees International Union, tackled this problem by working with the spatial conditions of janitorial labor. Organizers would visit job sites after hours, when a single cleaning staff might be on her shift alone. They made sure to cover bathrooms and hallways, to be where they could connect with workers. They would emphasize the non-outsourcability of service work that is necessarily rooted in place: janitorial work, security detail, etc. At a time when mainstream unions were at a loss, J4J created an entirely new spatial strategy for labor organizing.<sup>75</sup> As I mentioned, workers' centers are another version, creating neighborhood-based locations for labor activism across trades, rather than workplace locals.

**TS** Interesting. Well, again, beyond traditional modes of organization such as unions, there is also the possibility for "user rebellion." As Henry Jenkins and others have pointed out, fans and all net users can

now negotiate the terms of their consumption to a larger extent than they were able to in the past. Jenkins writes that, "The old model, which many wisely dismissed, was that consumers vote with their pocket-books. The new model is that we are collectively changing the nature of the market place, and in so doing we are pressuring companies to change the products they are creating and the ways they are creating and the ways they relate to their consumers."<sup>76</sup>

I can go along with this to an extent and there are plenty of examples of such "user rebellions." Facebook witnessed much of that with the introduction of ever-changing features such as the newsfeed, its various privacy settings, the opt-in default for Beacon, and other features. The response is usually that the company listens and makes some compromise, but a week later other features are introduced that make the previous change insignificant. Again, I refer to such user rebellions as Spectacles of Internet Democracy as they are limited to a negotiation of consumptive power. Internet users are defined in their role as consumers instead of being treated as full-fledged citizens. Capitalism has always given space to such critical movements, and it has continuously allowed a certain maneuverability for people who could complain and renegotiate some rules. These Spectacles of Internet Democracy could also be interpreted as nothing but a constant built-in product feedback loop. One thing is clear; this has nothing to do with deep-rooted social change.

**LYL** I see a strong parallel to the consumer boycotts deployed by student and other anti-sweatshop activists against manufacturers who use sweatshop labor to make clothing. While they are a form of rebellion and even action, they remain limited in their consumer frame. Some even suggest that they worsen the problem by creating a false sense of social action and thus cut off more substantive organizing. I think these are yet more examples of why sole focus on production or consumption is limited and organizing needs an expansive, systemic, but also locally grounded approach.

What about the idea that the Internet itself creates new avenues for social activism? In *Situated Technologies Pamphlets 1: Urban Computing and Its Discontents*, Adam Greenfield and Mark Shepard argue that it is flawed to assume urban computing is "a panacea for broken communities." They instead push the idea of meaningful participation beyond the mere idea of "presence," in terms of objects mediating an environment

or generating data or of our own social presences in the urban world. I found that discussion very useful for reinforcing that, whatever these new alternative possibilities might be, they mean nothing without an intentional and explicit politics around them. So we will always need political thought and action.

**TS** Absolutely. For decades, artists and technologists have brought about proposals that document their own technological imagination, often serving the public interest. Their motivation is that the design and application of emerging technologies should not be left to for-profit organizations. Technical artifacts materialize ideas of what constitutes desirable user behavior. Artists demand the end of the “black box.” So we have to ask, how can applications like RFID be used for the public good without profit motives being the driving concern? Wireless networking is another example. As Laura Forlano and Dharma Dailey discuss in *Situated Technologies Pamphlets 3: Community Wireless Networks as Situated Advocacy*,<sup>77</sup> artists and technologists set up NYC Wireless,<sup>78</sup> which offers free wireless access all over the city. The project demonstrates that this service can in fact be offered for free and it establishes expectations for such a resource to be free. It’s unlikely that very many people would prefer paying \$40 a month for a subscription to the Starbucks wireless network when a free wireless network would just be a click away. The coffee chain had to rethink their approach to charging for the service and now is considering also offering it for free.<sup>79</sup>

You could also think about the likely anti-trust litigation that will be brought against Apple.com for blocking Adobe’s Flash from the iPad. Mobile devices like the iPad are strictly proprietary, highly vendor-specific, and tinkerers cannot open the hardware. And beyond that, Steve Jobs took it upon himself to restrict what iPad users can do, access, and contribute to the Internet. Apple’s technological research and development process is completely closed off from the public. A group of artists, activists, and technologists called Preemptive Media<sup>80</sup> is closely involved in beta testing emerging technologies based on independent research and public input. They are using criteria and methods that differ from those of businesses and government, which means that they will come up with different results. Preemptive Media hopes that their work will influence policy making in the area of emerging technologies. I feel particularly drawn to this project as it clearly shows the possibilities for political engagement. Of course, we definitely should look to the east



Lewis Hine, High up on the top floor of a rickety tenement...this mother and her two children, boy 10 years old and the girl 12, were living in a tiny one room, and were finishing garments. (Courtesy of the Library of Congress.)

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and the democratizing opportunities of the Internet of Things; but I'm not buying the celebratory rhetoric around the Twitter Revolution, as you noted above. However, it would be correct to acknowledge the role of cell phones and texting in the ad hoc mobilization of large numbers of people for protests in Moldova, the Ukraine, Iran, and also Spain. Mobile phones definitely have strong political potential in societies that are in transition.

Other examples that show positive applications of the Internet of Things were showcased as part of Mark Shephard's Sentient City exhibition at the Architectural League in New York City in 2009.<sup>81</sup> Various works in the exhibition followed an ecological orientation; for example, tracking the route of a piece of trash from its initial disposal, through the streets of Manhattan, and finally into the landfill, or developing a garbage bin for recycling that ejects all objects other than empty aluminum cans. And for the next pamphlet we have invited Rob Kranenberg to talk about an Alternative Internet of Things that would allow communities to "rebuild institutional functions: slow down, mediate, negotiate, educate, and take a long term perspective . . ." <sup>82</sup> Will this take hold for digital labor? Given what we have explored in this pamphlet about the ways that digital labor plays out online and in cities, I hope so.

**LYL** I agree, Trebor. The dangers and possibilities are all there. But I look forward to seeing more of these alternative forms and to the incorporation of new organizing methodologies and technologies with traditional ones.

**TS** Thanks, Laura. Questions about labor are taking on new dimensions in this digital age and it's essential that we revisit them. What's ahead will be marvelous; it makes me feel electrified to think about it but also a little bit alarmed.

## NOTES

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UPCOMING

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Tools of Mediation for Emerging Actors in the Internet of Things

*Rob von Kranenburg and Christian Nold*

The history of ubiquitous technology has so far only created a range of placebos that promise ease and choice, while actually fortifying and privatizing public space and dumbing down people’s sense of self. Today, analogue notions of privacy are untenable in a world full of mobile phones. In the current discourse of anti-terrorism, fear of change, and economic crisis, the bureaucratic reflex is to embrace the security paradigm and head for a total surveillance society. In contrast we are seeing the emergence of a new set of responsive collectives made up of grassroots activists, government experts, academics and business people with a shared vision of neighborhood and tribal democracies built on taking risks, being pro active at the local level while creating alternative global chains.

This text proposes a model for processes, methods and concrete tools of mediation to bring together the full variety of actors as a heterogeneous network. The aim is to provide citizens with individual and community tools that rebuild institutional functions: slow down, mediate, negotiate, educate, take a long-term perspective, and strive to live together.

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**The Situated Technologies Pamphlets series** explores the implications of ubiquitous computing for architecture and urbanism. How is our experience of the city and the choices we make in it affected by mobile communications, pervasive media, ambient informatics, and other “situated” technologies? How will the ability to design increasingly responsive environments alter the way architects conceive of space? What do architects need to know about urban computing, and what do technologists need to know about cities? Situated Technologies Pamphlets will be published in nine issues and will be edited by a rotating list of leading researchers and practitioners from architecture, art, philosophy of technology, comparative media study, performance studies, and engineering.

**Situated Technologies Pamphlets 7:**

From Mobile Playgrounds to Sweatshop City

*Trebor Scholz and Laura Y. Liu*

This rich pamphlet grew out of The Internet as Playground and Factory conference (The New School, November 2009) that examined the unacknowledged labor that goes into the production of public culture online and the ways in which the booming data mining industry intensifies hidden commercial surveillance. In this pamphlet, Trebor Scholz and Laura Y. Liu reflect on the relationship between labor and technology in urban space where communication, attention, and physical movement generate financial value for a small number of private stakeholders. Online and off, Internet users are increasingly wielded as a resource for economic amelioration, for private capture, and the channels of communication are becoming increasingly inscrutable. Liu and Scholz ask: How does the intertwining of labor and play complicate our understanding of exploitation?

Today, we are not only “on” the social Web, we are becoming it—no matter where we are. Internet users are becoming more vulnerable to novel enticements, conveniences, and marketing approaches. Commercial and government surveillance are sure to escalate as new generations become increasingly equipped with mobile platforms, interacting with “networked things.” The goal of this pamphlet is to start a public debate about contemporary forms of exploitation.



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