Methods of the Precarious: Attachments, Utopian Glimmers & Awkward Engagements

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Introduction

An assortment of methods and approaches towards technology production such as design thinking, start-up incubator spaces, makerspaces, etc. are positioned across diverse regions as hopeful interventions into increasingly precarious work and living conditions. Makerspaces and incubator spaces at universities and middle schools have popped up in the thousands across regions as politically and economically diverse as the United States, China, South Korea, Indonesia, Ghana, Peru, and Spain, all the while proliferating the same seductive promise: teaching people how to make, build

and solder would also teach them how to take things (and life) into their own hands and prepare them to take on complex societal challenges from unemployment to political instability and environmental havoc. In other words, when high-school and university curricula are redesigned to train students in starting up businesses, they are not only trained how to solder components onto a circuit board or how to apply design thinking or the lean start-up model to their next pitch in front of a venture capitalist, they also learn that their future and the future of their society, and even their nation, rests on their ability to lead an entrepreneurial life, i.e. the ability to remake themselves into doers, creators, and makers not only of their own technologies, but also their own livelihoods. What remains silenced is how this call for an entrepreneurial life further benefits those who have already subscribed to and managed to succeed in one particular way of doing tech production, i.e. the kind associated with the office aesthetics, work and spare time practices of flexible tech labor, often highly masculine and racially white (Neff 2012).

A central aspect of my research over the last six years has been to unpack how it could happen that methods including but not limited to the lean start-up, making, design thinking, incubators, and so on began to be seen as hopeful intervention into the very precarious,

racialized and gendered conditions they further expanded. In my analysis, I have been drawing from an interdisciplinary set of scholarly work including feminist technoscience, postcolonial studies, critical studies of tech production and of global shifts in work and labor. I have been exploring questions such as: Why did a diverse set of actors from venture capitalists to critical scholars of computing alike get so attached to this idea of "making" as a hopeful intervention into the status-quo? What resistance is possible in a moment when methods of the precarious become seemingly aligned with methods of the capitalist? What is the relevance of scholarly critique when mirrored in the corporatized endeavors of venture labor (Neff 2012) and creative work?

The Promise of Make

The idea of a future of making that promises the democratization of technological, political, societal and civic participation has found uptake not only amongst venture capitalists and educators, but also amongst those invested in the critical study of computing and science and technology studies. Projects in the field of participatory design (PD), for instance, have approached making as carrying the means to implement alternative technological futures that move beyond market-driven concerns, challenging the pervasive managerial ethos or use of user-driven innovation (Ehn et al. 2014). In a 2014 edited volume, scholars who were involved in the early PD efforts with roots in the Scandinavian labor rights movement, consider making as aligning with and further extending their earlier concerns that gave rise to the fields' inception in the late 70s and 80s: making not only shares PD's ideal to democratize technology production, but also introduces concrete methods and tools to implement it in new ways. "Fablabs and makerspaces," the introduction to the edited volume stipulates, are "platforms for broader participation and new ways of collaborative engagement in design and innovation, pointing at alternative forms of user-driven production" (Ehn et al. 2014). Similarly, computer scientists and designers in the adjacent field of Human-Computer Interaction (HCI) have approached making as a new domain of computing and human-centered design that allows to theorize (human-computer) interaction in new ways and to pursue new design methodologies (e.g. Buechley and Mako Hill 2010, Devendorf and Ryokai 2014, Kuznetsov et al. 2015).

Making appealed not only to those interested in advancing computing and design, but also to scholars and researchers of critical computing and science and technology studies (STS). For instance, the 2015 annual meeting of the Society for Social Studies of Science (4S) in Denver, Colorado, one of the key conferences for STS scholars that has also come to constitute an increasingly central venue for critical HCI researchers, dedicated for the first time a half-day to what the organizers called the "STS making and doing" program, a total of 51 installations that included open hardware hacks, robots, interactive story booths, and more. The aim was, as articulated by Gary Downey in his president message to build a "material scholarly infrastructure for STS." Making's key values and approaches aligned directly with some of the most fundamental commitments developed over more than 30 years of critical computing scholarship across fields like STS, PD, and HCI: to open up the black box of technology and science, to democratize access to science and technology production, to make visible what is rendered invisible, to challenge what taken for

granted (scientific or technological) facts by questioning how they were produced, both materially and socially, and to intervene and finally to envision and construct alternatives, be those technologies, policies or institutions. These commitments are visible in diverse studies exploring how it happened that ideas, objects and norms in science, technology, and society came into being and were made durable. Throughout, this work has challenged divides such as nature/science, material/social, the West/the Rest, and more recently also: global/local, innovation center/periphery. To show that "it could have been otherwise" and that it "can be otherwise" is at the heart of this research program.

Makers and scholars of critical computing and science studies share the commitment to intervene in the status-quo, operating from within but at the fringes of dominant modes of knowledge production and technoscientific practice. The fascination with making by scholars and researchers, I argue, stems in part from these shared goals and commitments. We recognize a lot of ourselves in the makers and hackers we work with. Many of us who research making and hacking, have begun active partnerships and collaborations with our research sites. While this certainly occurs across domains and is in many ways at the heart of ethnographic practice and contemporary computing and writing culture, partnerships in hacking and making are not just a side product of the research, but often the central aim, with making and designing itself acknowledged as site of knowledge production and criticality (Bardzell et al. 2016, Ratto 2011, Rosner et al. 2016, Williams et al. 2013). Making, in other words, became an ally of sorts for those invested in translating between perceptions of design and

technological production as science on the one hand and critical and humanistic approaches on the other.

We have yet to account for the ways in which various engagements with making (scholarly, research, designerly, commercial, etc.) attach us not only to sites of computing and technoscientific production, but also to processes of gendering and racialization, political decision making, economic transformations, national and global imaginaries, and cultural production. What are our responsibilities (as designers, scholars, educators, computer scientists, etc.) as corporate, venture capital and government funds support only very specific approaches towards design and tech innovation while excluding others? What is the relevance of fields such as science and technology studies, participatory design, and human computer interaction when confronted with knowledge productions that open up the black box of technology rather than leaving it up to established sites of research and scientific practice? How do we talk about and position ourselves in relation to sites of knowledge production that share the same commitment to demystifying science and technology, to engaging situated knowledges, and to building civic technologies, butdo so outside the academy?

Attachments, Awkward Engagements, & Utopian Glimmers
A first step, I argue, is to acknowledge the kinds of sites and practices we often indirectly endorse and further through our own research. Are we guilty of celebrating one particular aspect of designing, making and hacking, its commitment to activism and intervention, all the while silencing other expressions and interpretations? How have we ourselves construed

what counts as proper intervention into and resistance of the status-quo? Our own ambivalent engagement with making and hacking as critical computing researchers and designers that spans from endorsement to sharp criticism demands that we revisit what we mean by intervention into the status-quo and which projects we identify as countercultural or as resistance. This questioning of our own ideals and values with regards to what counts as intervention and resistance became front and center for me as I began presenting findings from my research in China in academic and industry networks.

With a frame in mind of what counts as proper resistance, scholars, media and practitioners alike were unable to see China's history and cultures of industrial production for their own capacity of critical intervention. I have witnessed on numerous occasions, at international maker gatherings I attended in China or when I gave talks about my research both in China and abroad, a common reaction by fellow practitioners and researchers/scholars alike: why was China's maker scene, people wondered, not about creative play as were its Western counterparts, but about business and industrial production? They would say: focusing on running a business or entrepreneurship or mass production was the opposite of intervening and resisting in processes of capitalism. Industrial production or product development could not possibly be a site of critical intervention, but would only illustrate how people had bought into the system, was another common response. Wouldn't any focus on business or market considerations more broadly hinder, many asked, the kind of creative capacity and potential to build alternatives that was at the heart of promotions of making and open hardware, i.e. a playful

approach that carried the means to disrupt corporate monopoly and passive consumption by empowering individuals to make their own devices.

To account for and begin to see multiple shapes and spheres of critique and resistance has become a commitment for me not only in ethnographic and theoretical work, but also in my research partnerships and collaborations. I have found increasing inspiration from different sets feminist scholarship spanning a variety of disciplines; one of which steams from my collaboration with Shaowen Bardzell through which I have begun to engage with feminist utopianism and explore ways to practice a feminist HCI (Bardzell 2010, Bardzell and Bardzell 2011), while the other emerged from my engagements with studies of neoliberal critique in contemporary China and the postcolonial world more broadly. Here, I have found recently strong alignments between my work and that of Lauren Berlant's (2011) notion of "attachment" and Anna Tsing's (2005) conceptualization of "zones of awkward engagements." Due to space limitations, I only elaborate briefly here; what draws me to these works is a shared commitment to start from within what is, rather than seeking the new or a drastic overhaul of the system. Shaowen Bardzell's work on feminist HCI and her translation of feminist utopianism urges us to explore utopian glimmers, i.e. moments of alternatives that emerge within and not necessarily positioned against systems of power or the status quo (see more detail here: Bardzell 2015, Lindtner et al. 2016). I see this project aligned with Berlant's call for recognizing our own attachment to certain long-held ideals (in her case: the idea of the good life). None of this will be comfortable, Tsing reminds us, because stuff gets done in zones of "awkward engagements." Taken together,

these scholars urge us to stick with the trouble, rather than smoothen out the tensions, frictions or awkward desires we encounter in our fight for creating a world within which it can be otherwise. Attachments, utopian glimmers, and awkward engagements are not only devices of feminist critique, they are the methods of the precarious, which I found deployed, albeit never articulated as such, in my fieldsites, in centers of capitalist production, in moments of creative production, and in the aesthetics of making.

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