

research spotlight



Improvising Field Research in COVID-era Hackerspaces

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Hackerspaces and makerspaces are community-oriented technology and art workshops facilitating new forms of public life and filling infrastructural gaps in cities (but for the sake of brevity, I refer to both as hackerspaces here).¹ My dissertation project aims at understanding how hackerspaces relate to the built environment and how they create new imaginaries of citizenship in U.S. cities like San Francisco and Detroit. Here I reflect on some of the challenges I faced researching these spaces as they constantly adapted to unaccommodating city environments before and during the pandemic. During my field research, I had to learn to follow them through their various improvisational strategies.

The relation of a hackerspace and its members to the built environment has never been straightforward. Even before the pandemic, hackerspace members often discounted the importance of any single building in determining the character of their organization. As such, I decided my methodological approach had to go beyond photographing and studying hackerspace buildings to include participant observation and interviews. Dozens of interviewees expressed that hackerspace buildings are often just the best their organizations could find at the time; they make do after receiving eviction notices and having to quickly relocate to a new space. Their spatiality is defined by improvisation, where “people address what might be

¹ I parse the finer distinctions between hackerspaces and makerspaces in my forthcoming dissertation.

possible to do with what they have access to now,” as AbdouMaliq Simone puts it.² Privileging social forms over built forms makes sense because of the improvisational situations of hackerspaces. Municipalities are often puzzled with hackerspaces on a legal level. Architecture and zoning codes which are accommodating to hackerspaces are rare, meaning hackerspaces must adapt to less-than-ideal spatial situations. The fact that hackerspaces aim to be like Swiss army knives, with as wide a range of tools as possible, creates problems. For instance, do certain activities belong in industrial zoning or mixed-use? Most hackerspaces contain tools which could be interpreted as code violations in any given zoning (figure 1). Rather than simply accepting these restrictions, hackerspaces often attempt to find their own solutions by altering their buildings and installing their own safety features, and sometimes end up being evicted as a result.

Improvisation is an overarching theme before and during the pandemic, both in hackerspaces themselves and in my dissertation research process. COVID-19 interrupted much of my 2020 research, making it impossible to attend most hackerspaces in person or consult non-digitized records relating to hackerspace buildings. In other words, I had to alter my methodological approach and research questions again to observe the ways in which hackerspaces adapt to crisis conditions. I had to conclude much of my in-person visits and rely more on digital hackerspace platforms to understand how hackerspaces relate to architectural and urban space before and after the pandemic.

During the pandemic, much of the built environment proved incapable of facilitating social distancing, as exemplified by improvised sneeze guards for cashiers and queues wrapping around grocery stores. The pandemic transformed everyone into what architect Joel Sanders calls “noncompliant bodies,” or people who are impeded rather than enabled by the built environment and must find new ways to make do.³ But hackerspaces already operated within unaccommodating environments. Because of their tenuous relation to architectural and urban space in U.S. cities, hackerspaces already had adaptable infrastructures in place that they could fall back on during the pandemic. These include their already solidified social

² AbdouMaliq Simone, *Improvised Lives: Rhythms of Endurance in an Urban South* (Cambridge: Polity Press, 2019), 30.

³ Kim Tingley, “How Architecture Could Help Us Adapt to the Pandemic: The virus isn’t simply a health crisis; it is also a design problem,” *The New York Times Magazine*. June 9, 2020, <https://www.nytimes.com/interactive/2020/06/09/magazine/architecture-covid.html>.



Figure 1. A masked hackerspace member slides tools and miscellaneous items down an improvised chute during their move to another, more suitable building. The industrial laser cutter in the foreground is part of the reason for this move. San Francisco, 2020. Photograph by author.

bonds and digital communications platforms like Slack, Discord and Discuss. Before the pandemic, hackerspace members used these supplemental infrastructures to extend their gathering sites to members who were not physically present or fell back on them after being evicted and temporarily without a brick-and-mortar space. During the pandemic, I had to rely on hackerspaces' digital infrastructures for my research. I was able to successfully execute

this transition thanks to the connections I already made with hackerspace users during my participation in these highly variegated subcultures and in their physical spaces before COVID. Because of this work, I was even able to safely attend one hackerspace in Detroit in person after Michigan stay-at-home orders relaxed.

The skills I had developed to adapt to variegated hackerspace cultures were hard-won, but they came in handy as hackerspaces in turn adapted to the pandemic. As an outsider more familiar with formal educational institutions in the U.S., it was, and still is, at times difficult and uncomfortable for me to participate in hackerspaces. While many hackerspaces were open to the general public, physical access does not guarantee you will make useful connections with established members. Most hackerspaces are "doocratic," meaning they privilege action over deliberation and aim to empower users to make what they will of the space without necessarily asking permission. This can mean freely painting and graffitiing on interior walls, experimenting with tools and beginning one's own initiatives for improving aspects of a hackerspace's building. This gave me a sense of vertigo, first because I'm accustomed to academic institutions where every initiative requires an approval form, and secondly, because I was determined to conduct my research ethically, meaning asking permission was critically important to me. This made me feel like

one of Sanders' noncompliant bodies, at first, not because I was impeded by hackerspace environments, but because I felt paralyzed by the imperative to act freely while simultaneously obeying more-or-less implicit norms of conduct.

I had to learn to be malleable given that each hackerspace culture has different manifestations of doocracy with implicit rules. I had to try various strategies in order to forge interpersonal connections, conduct interviews, and gain physical access to hackerspaces before the pandemic. In exchange for a tour and interview with a member at the leftist and anticapitalistic Oakland Omni Commons, I restocked and cleaned a particularly grungy bathroom as a way of participating in their economy of favors. At Noisebridge in San Francisco, everyone who walks in the door qualifies as a member, but this does not mean everyone feels like one. To better integrate myself, I attended weekly meetings and helped another member assemble an infinity mirror to decorate the hackerspace's walls. At Double Union, a feminist hackerspace for female and nonbinary members only, I conducted phone interviews facilitated by referrals from members of the larger hackerspace culture in the Bay Area. As a white, straight, cisgender male, I was fortunate to finally receive an in-person tour of the space but also understood that I could not qualify for membership and frequent access. The Michigan hackerspaces I researched were also more exclusive and membership-based than the more public facing hackerspaces in the Bay Area. This required me to become a paying member in some cases. i3Detroit, in Ferndale, just north of Detroit, allows guests into the space at the discretion of its present members. But to gain regular, unmonitored access as a member, I completed a lengthy scavenger hunt for fire extinguishers, emergency exits, medical kits, and memorized specific policies. These items were especially important to i3Detroit because of its unusually large membership of over 150 people. If that many people are to conduct themselves doocratically, they ideally should be able to address ensuing mistakes and crises doocratically as well.

OmniCorpDetroit, in Detroit's Eastern Market district, was the most challenging to access. I had to become a fully initiated, dues-paying member in order to visit more than a couple of times. Like most hackerspaces, OmniCorpDetroit began as a more public facing hackerspace. However, it later developed in the opposite direction, after the few volunteer members who had been facilitating public events and access experienced burnout. When these members gave up, OCD became more exclusive. After reaching out for a tour using the hackerspace's minimal website, I needed to acquire two sponsors, or members to vouch for me. Neil and Achille agreed. I was interviewed by the larger membership at a monthly gathering, where I explained my dissertation project. They asked me some pointed questions about how I planned to conduct research ethically in the city of Detroit, which was apprehensive of what they called "drive by journalists" who stay for a

week and then purport to be experts. After hearing that I'd stay in Detroit for the better part of the year, they approved me, and I became a member. However, I did not feel like a member until I constructed my own personal workbench using the hackerspace's own tools and infrastructure (figure 2).

COVID-19 all but eliminated public access to hackerspaces. I3Detroit and Noisebridge closed entirely to public visitors and guests, and reduced access to small skeleton crews. My research in these spaces had to happen through screens. Luckily, hackerspaces were still active even without their brick-and-mortar establishments acting as physical public interfaces. One i3Detroit member named Que explained that a hackerspace is a "strata of layered infrastructures," and the pandemic emphasized their point. Hackerspaces switched infrastructural gears during COVID, relying more on their digital platforms. Video chats were used for weekly meetings where they hashed out the evolving COVID guidelines of their states and cities. I attended as many of these meetings as possible while keeping track of conversation threads on Slack and changes made to wiki pages. Staying involved in digital hackerspace communities helped me to continue to identify



Figure 2. Constructing a workbench in OmniCorpDetroit's downstairs workshop. Detroit, 2020. Photograph by author.

individuals to approach for telephone interviews and kept me abreast of how they were responding to the COVID-19 crisis.

Because of OmniCorpDetroit's members' familiarity with each other, the relative ease of coordinating safe use with a small number of people, and the space's larger square footage, members were able to still use the space. I also returned in person after Michigan's stay-at-home orders partially relaxed and after encouragement from other members. Everyone attended with masks and communal hand sanitizer was provided by the space's budget. We were also able to move our personal workspaces to sequestered corners in this cavernous hackerspace building. While I was there, I was fortunate enough to see Project Apollo in action. Project Apollo was Ford Motor Company's rapid prototyping operation for PPE including respirators and face shields.⁴ From my sequestered personal workspace, I observed documentary film crews entering and exiting, and interviewed one of OCD's founding members at a distance as he tinkered with various valves, tubes and face coverings.

Observing Project Apollo at OmniCorpDetroit was one of the highlights of my research experience, but it would have been impossible without first experiencing the wide variegation among hackerspace cultures. Each required a different approach and I had to figure out the roadmap as I went, with varying success. I want to point out that I still never felt like I fully belonged in any of these spaces, despite being a paying member in some and despite the radical inclusivity practiced in others. I found this fact extremely uncomfortable, like becoming acquainted with a different academic culture in a different university department a dozen times over the course of a year of field work. Sometimes I clicked with members who were curious and receptive to my project, and sometimes it took me months of repeatedly attending meetings before I made a single useful connection. However, I was not simply in the right place at the right time to observe Project Apollo in Detroit or participate in other hackerspaces' digital platforms; it could not have happened without my prior legwork gaining access to hackerspace buildings. Because of an improvisational approach to improvisational spaces, my research was not entirely hampered by COVID-19 and I was able to observe hackerspace cultures as they variously decoupled from or hunkered down in their buildings.

⁴ Ben Jameson-Ellsmore, "Hacking the Pandemic: Hackerspaces and Makerspaces Respond to the COVID-19 Crisis," *PLATFORM*, August 24, 2020, <https://www.platformspace.net/home/hacking-the-pandemic-hackerspaces-and-makerspaces-respond-to-the-covid-19-crisis>.