





Designing for Liberation

Our Lives, Mobility, and Technology

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*If you have come here to help me, you are wasting your time.
But if you have come because your liberation is bound up with
mine, then let us work together.*

—Lilla Watson

The overarching question motivating this dialogue is: How can HCI scholars refine their understanding of the relation between mobility and technology? We (Anu and Maggie) both came to answer this question through our own powerful and subjective experiences of technology and mobility during the extraordinary time of Covid-19, social justice movements, shelter-in-place orders, and the political shifts of 2020. In the past year, we have each experienced a dramatic restructuring of our relationship to movement, which then shifted our subjective feelings of liberation. Here we share these experiences as a way to describe how our understanding of the relationship between technology, mobility, and liberation has

evolved. Our experiences of technology are drawn from our engagements with the full suite of tools that we use in our daily lives, including cars, smartphones, radio, commercial social media platforms, video-call applications, and even our apartments.

We are both feminist scholars, which motivates both the content of our research and our methods. By that, we mean that we are interested in the gendered experience of mobility and, methodologically, we are interested in grounding our analysis in subjective lived experience, rooted in geographical location and culture, and at the personal scale. We are also inspired by prior autoethnographic work in HCI. Like Kaiton Williams [1], we explore how our relationship to technologies helps us develop personal identity and can even co-constitute our affective experiences. Like Howell, Desjardins, and Fox [2], our autoethnographic dialogical mode allows us to explore the differences in our own experiences as well as their fundamental similarity.

Insights

- Liberation is radically subjective, and we cannot design liberation for others.
- Designing for liberation requires self-reflection and a dialogic process.
- Designing for our liberation means (re)designing our relationship to technology, ourselves, and our communities.

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We define mobility as literal movement (physically and/or virtually), the going from house to store, or from New York to New Delhi. Mobility is not a given and requires a certain amount of agency, which is constrained in various ways, including across lines of gender, disability, class, race, and global inequality [3,4,5]. For some examples, women often can have constrained mobility due to safety concerns (e.g., [6]), and citizens of the Global South have constrained mobility due to global hegemony (e.g., [7]) or financial inequalities (e.g., [8]). What is at stake in the constraining of mobility in these ways is not just the blocking of literal movement. Mobility affords *freedom*, or the privilege and agency (or lack thereof) of moving or not moving. In this dialogue, we tie the freedom of literal movement to freedom of broader personal agency, including spiritual, intellectual, and emotional freedom, or what we call *liberation*.

To lightly theorize this relation between technology, mobility, and liberation, we build on Johanna Brewer and Paul Dourish [9], who argue that technologies, specifically information technologies, play a defining role in constructing meaning around the spaces we inhabit—in other words, our construction of place. We suggest that mobility's relation to liberation is analogous to space's relation to place. Liberation is meaningful movement, understood literally or metaphorically. Technology can accelerate liberation, or its inverse, constraint; we have experienced the acceleration of both of these opposing forces during the Covid crisis, as we explore in our personal stories. If technology is a mediator for liberation and constraint, these stories allow us to consider: *What might it entail to design for liberation?* In attempting to answer this question, we have concluded that liberation is radically subjective and that we cannot design liberation for others. Designing for liberation requires self-reflection and is a dialogic process. Drawing on our stories, we propose that designing for liberation for ourselves means (re)designing our relationship to technology, ourselves, and our communities.

MAGGIE'S STORY

I spent January 2020 in Phnom Penh, where, due to conditions of privilege and hypermobility, I have been able to live and work on and off since 2014. As news broke about Covid-19 in China, Phnom Penh residents were buzzing with worry about the disease coming into Cambodia via Chinese tourists and businesspeople. My flight home to Queens, New York, at the end of the month connected through Seoul. I didn't have a mask and was one of the very few on the airplane who was unprotected. I realized then that Covid was inevitably coming to New York City.

Through February 2020, concern in NYC about the virus was mostly contained in Chinatown. Chinese

restaurants closed, even during the busy Chinese New Year season. Friends coming from China started to quarantine. Morale shifted in New York City as the virus seriously broke out in Italy. A murmur of concern erupted into a panic. During a women's graduate student lunch at the end of February, Covid was the only topic discussed. Together, we started putting the pieces together about all the ways in which our lives might change if we really wanted to stay safe from the virus. Could we take the subway? What about taking public transit like trains and buses out of the city? To some students, our rural main campus in Ithaca, New York, started to feel safer and

more appealing than our urban satellite.

Meanwhile, I was preparing for my dissertation defense and took a quick overnight trip to visit my advisor in Ithaca during the first week in March. Despite carefully watching the news, I was still personally convinced that I would go back to Ithaca to do an in-person defense in April. As I was returning home from Ithaca, my partner was flying back to New York City from Cambodia—again, via Seoul. We worried that we might have to do a two-week quarantine at home, in case he had been infected on the airplane going through Korea, where the virus had a substantial outbreak. He changed his flight to reroute through Abu Dhabi. As soon as I reached home, I drove in my car to outer Queens and did a huge grocery run with a noticeably panicked client base at Trader Joe's, ran into a craft store to get art supplies, and borrowed five of Oprah's summer book recommendations at the library. My partner returned and we began our shelter in place at our apartment in Long Island City.

The rhythms of our days shifted and renormalized. I was still preparing for my defense, but doing so from my apartment rather than from my office at Cornell Tech on Roosevelt Island. I would take hour(s)-long walks around my neighborhood, sometimes two in a day. I started volunteering for the neighborhood mutual aid network and delivering food to pantries from our neighborhood restaurants using my car. Reading light fiction gave me solace, as imagining things outside my immediate environment gave my mind room to move normally. Sometime in late March, one of my walks coincided with the "7 P.M. clap." As I walked by some of the waterfront buildings in Long Island City, residents banged on pots and pans while others hollered. After that, my partner and I started to set an alarm for the nightly clapping, and opened our windows to join in. By early April, a saxophonist started playing taps, the funeral song, during the ritual. At some point we heard on the news that more people had then died from Covid in NYC than on 9/11 (as I write, the numbers of Covid deaths in NYC are more than triple the number lost on that day in 2001). Our home was not far from Elmhurst hospital, the epicenter of the city's outbreak. We heard

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sirens all day and all night long.

I defended my dissertation via Zoom on April 13, now known as the peak day of Covid deaths in NYC. My four committee members joined me on a Zoom call that morning to discuss my project, which had grown to have an outsize emotional importance for me after working on it for at least four years. That evening, I felt relieved and exhausted. On the 14th, I took a bike ride around Manhattan; the streets were eerily empty, mimicking my intellectual experience on that day.

My partner and I were surviving as a team, but we lost touch with our deeper connection and decided to call off our wedding in mid-May, about a month before our planned marriage in June. I drove in my car to my parents' house in Boston for a few weeks. The literal space away from my home allowed me to see what I had not been able to see: I was hanging on emotionally by a thread. I had shut down the ability to feel in order to take on each next day and next challenge. When feeling returned, I was devastated. I felt so much loss: the loss of my fellow New Yorkers, the loss of my graduation and the ritual around finishing a graduate program, the loss of my relationship and our imagined future. I had woken up into a painful reality and was inconsolable for weeks. I have come to learn that taking this space to feel again was a privilege.

I returned to New York City during the social justice movements in response to the killing of George Floyd at the end of May, trying to find a place to live on my own while curfews spooked the city. At first, I stayed in a rented sublet that was infested by cockroaches. Pushed to the brink of "I can't quite survive this," I called a friend (on my iPhone) who had moved to California at the beginning of Covid, and who helped me strategize a recovery plan. She helped me contact a mutual friend who was staying Upstate for the shelter in place, and arranged for me to stay at her Chelsea apartment for a few weeks. After taking these weeks in Manhattan, I told my new colleagues that I needed to take a monthlong break to recover from the dissertation defense (and everything else) before starting my postdoc.

I got tested for Covid and went on vacation in New England with my car, where I saw a best friend, my parents, and my niece and nephew. I took space to breathe and to sleep. I came back to New York, stayed at another friend's house near Washington Square Park, and finished an apartment search. I got around by bicycle and became stronger by biking over the Queensboro and Williamsburg bridges. I followed an online exercise program, watching 20-minute workout videos daily. I found my own apartment in Sunnyside, Queens, in a prewar coop, and signed a yearlong lease on August 1. I felt lucky; so often women cannot afford to move into their own apartments after deciding a relationship is not working.

I love Sunnyside and have committed to the neighborhood in a way that I had never before done when moving into a new place. I joined a number of community organizations right away, and I furnished my apartment with purpose, knowing that the year might bring me to occupy this place more seriously than my previous apartments. I joined Facebook groups: Sunnyside Together, Sunnyside Plant Community, and Sunnyside

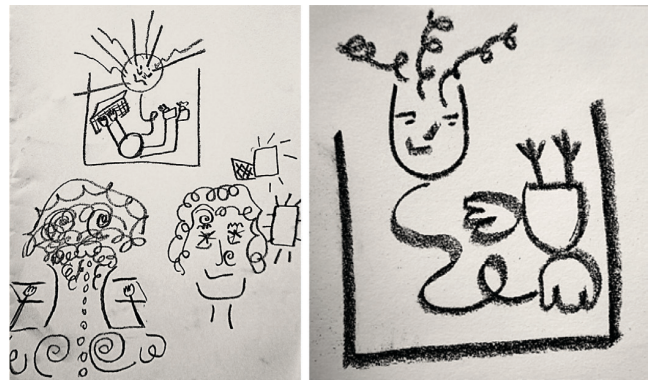


Figure 1. Sketches by Maggie. Left: overstimulated and exhausted. Right: stuck in a box (i.e., my computer and my apartment) with a stiff neck, 12/2/2020.

Sits. I started volunteering again with the mutual aid groups and the volunteer compost group, who used an empty lot adjoining my apartment building.

I also joined a six-day silent retreat hosted by my vipassana teacher, a 76-year-old American nun who has lived in Cambodia since the 1996 peace walk from Bangkok to Phnom Penh. A friend (he is also a research colleague from my dissertation research) joined her in person from Siem Reap. They called me three times a day, for a dharma talk, an interview, and a guided meditation. I sat and walked inside my apartment and occasionally around my block. I felt both more connected to my space than ever before, and also connected to my friends across the world in a deep, spiritual, and supportive way.

As I write in November, my relationship to mobility is still in flux. In September, I started taking the subway again. In October we had a spike of Covid cases in Queens. I was afraid: If Covid spiked in outer Queens, in poorer communities, I could contract it on the 7 train going into Manhattan, as it originates in the far reaches of Queens. I started more diligently biking again. I keep in touch with my friends and colleagues globally by phone, Twitter, and Facebook/Instagram. I notice that my shoulders are often stiff, and I suffer from screen fatigue when I schedule too many meetings on my computer. When I speak to friends on FaceTime in the two hours before bed, my mind can get jittery from the blue light and ergonomic stress, and I can have trouble settling down for sleep (see sketches in Figure 1).

Meanwhile, my work routines have renormalized and come together with these intense personal experiences. My ability to process my experience has been informed by my longtime academic exploration of memory, media, and trauma. The guiding question of my dissertation—what is the role of the media in postconflict recovery?—has shifted in my postdoc to: What is the role of media in post-Covid recovery? I have started doing qualitative research again virtually, drawn to questions of grief, recovery, and productivity.

Returning to our leading question: Technologies have acted as essential tools for my *liberation* during these past months. Since Covid's peak in NYC, the disease itself has constrained my mobility. Novels became my first liberating technology. Later, technologies of transit (my car, bicycle, and the subway) and my apartment

DIALOGUES

allowed me to get away, to get space for healing. Information and communication technologies have connected me to various social outlets, from friends and family to colleagues and research participants. Though I cannot travel to what has been my main research site for the past six years, I am still in touch with my colleagues and spiritual community there, and I am interacting with new research collaborators and interlocutors in closer proximity or virtually. I am profoundly grateful for these liberating technologies, and also realize that my access to them was a stroke of luck, a privilege. I have money that gives me a car, a bike, the funds to get my own apartment, and wealthy friends who have spare Manhattan apartments for me to spend time in. I have a stable Internet connection, my own computer, and a smartphone, all of which require money and entail an environmental cost.

My experience also points to the limits of the liberating qualities of technology. Though I use commercial technologies to keep in touch with my loved ones, my use of these tools is in conflict with my political desires to keep major corporate platforms in check. For example, I was concerned about Facebook's decision making around misinformation and the U.S. general election in November 2020. While my reliance on these corporate platforms increased, I watched Covid exacerbate the divide between rich and poor both in the U.S. and globally—with the owners and employees of big tech firms profiting the most. I want to be able to participate in making rules about the political economy of corporate technology, but I do not feel empowered to leave the platforms because they are necessary for my social support and community involvement. I also feel real limits around my physiology and technology: The number of hours I use a computer directly relates to strain in my body. The hours I use digital technologies influence the quality of my sleep.

ANU'S STORY

I am 29 years old, born and brought up in New Delhi. I lost my mother in 2012, and since then, my father, 72 years old, and I have lived together in my parental home. For the first two years of my Ph.D., I used to commute daily to my institute, IIT-Delhi, using public transportation—Delhi Metro, bus, or auto rickshaws. In March 2018, I was diagnosed with clinical depression and decided to shift into the campus hostel. Leaving my father to be by himself at home was difficult, but it was also liberating; since losing my mother, I have struggled to relate to my space at home. My father is an introvert, and my mother was my emotional anchor to my space. With time, my single room in the dorm became my only safe and comforting space—until mid-March 2020, when the authorities asked us to vacate the dorms due to the pandemic.

I spent my lockdown days with my father in our home. The government-enforced mandatory lockdown (March 2020 to May 2020) gave me time to (re)define my relationship with my home. The initial months of lockdown were stressful. My father spent his waking hours glued to the news channels on television. As this nonstop relay of information grew his fears around the pandemic, he started spending most of his time in his room. When he was not there, I would find him in the kitchen, experimenting with ways to boost immunity, or observe him adopting new practices suggested in the news and forcing me to do the same. For instance,

as suggested in the news, I was not allowed to use AC in May, one of the hottest months in Delhi. Initially, my attempts to convince him of the increased circulation of fake news and (mis)information around Covid led to frustrating discussions. However, over time, with an increasing number of failed attempts to persuade him to be more discerning about the news, we ended up having more disagreements and arguments, making our shared space claustrophobic for both of us.

To exacerbate matters, the mandate of installing and using Aarogya Setu, India's contact-tracing app, sparked fear in us both. According to the app, there were no cases in our neighborhood; however, we kept hearing that the application was not providing an accurate case count, feeding the uncertainty and fear of contracting the virus. For the first time, I saw my father scared and helpless. One day he said, "I don't know what is going to happen. Initially I had faith in the Indian medical system, but with the news of hospitals filling up to capacity and denying services to citizens in

Delhi—the national capital—I have lost all hope. I don't know what will happen if any one of us falls sick." Looking at him in such a helpless state broke me to the core. Given the uncertainty of the information (television and the contact-tracing app) at hand, I stopped using my terrace and the society garden for walks. I dreaded going for walks—which had been crucial for my mental well-being—for fear of contracting the virus and transmitting it to my father. I also observed that my father stopped watching television altogether over a couple of days. He said it was better not to watch it, as he got disturbed. To comfort him, I took out our old radio and encouraged him to use it. I created a playlist of devotional songs (bhajans and kirtans) for him, which he started listening to throughout the day. Even when he was not listening, he ensured it was playing in the background, as this made him (and me) feel safe and spiritually connected. I never thought that in the age of voice assistants and smartphones, a radio would have the power to bring my father and me a step closer to our spiritual selves.

On the academic front, remote data collection became

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— MARGARET JACK

a daunting exercise, given the sensitive topic of my research—menstrual health education and management in urban India. Instead of the participatory design workshops I had planned for the summer, I settled for phone interviews. Conducting remote interviews where participants did not feel comfortable in joining through video calls affected the participant-researcher trust, which becomes crucial when having conversations on sensitive topics. Stories of my participants revealed various instances where virtual mobility altered their safe space of the home. For example, women shared how their male colleagues and clients set up impromptu video meetings at odd hours on the pretext of work, intruding into the private and safe spaces of their homes. The weekends were now considered working weekdays, blurring the lines of personal and professional time and space. The communication technology (Zoom, Skype, Google Meets) and the work-from-home paradigm in hindsight has created an opportunity for intruders to easily access their colleague’s private spaces, leaving them susceptible to workplace harassment, even in their homes. Being a woman, listening to such experiences made me feel vulnerable to the same kind of harassment at home—which is supposed to be a safe space. Additionally, there were media reports around the security risks of the Aarogya Setu application, which is mandatory for smooth mobility (e.g., for air travel, trains, government sector employees) during the pandemic. News reports stated that more than 150 million Aarogya Setu app users run “significant risk of theft or abuse” [10]. These stories made me critically reflect on agency and responsibility on us as designers of technology.

With troubled sleep, sudden confinement to my room on account of Covid, and limited interactions with my father, I started exploring alternatives, such as ways to build my support system virtually. My Instagram and Netflix hours spiked as I started spending more time doomscrolling and watching videos (cooking, fashion, cartoons, gardening, and more). Within the short span of two months, the platforms that served as an escape from the harsh reality of lockdown, pandemic, and sorrow started reminding me of the pre-pandemic world and the stolen freedom to travel and meet people. I logged off from both my accounts and started using Twitter more frequently than before. Through Twitter, I signed up for multiple virtual events in search of human interaction, where I could find space to talk with my academic peers.

I enrolled in whatever I could get my hands on from May to July, including workshops, lectures, conferences, summer school, spiritual programs, and more. These virtual spaces not only provided me with an opportunity to enhance my academic profile but also acted as a safe space where I could build solidarity with my peers across continents. All of us shared stories of struggle and coping mechanisms in these unprecedented times. Given my sleep struggles, I started engaging more with people across time zones. For example, I explored cross-time-zone co-working with colleagues from my lab at Georgia Tech and peers from the lab here in India. Serving as a student volunteer at CSCW 2020 further offered a much-needed way to build connections, solidarity, and social support. I also enrolled in virtual spiritual programs and

meditation sessions, which helped me reconnect with my inner self while physically sitting in a place from which I had been emotionally disconnected for the past nine years, since losing my mother.

The fear of contracting the virus restricted my physical mobility to my house—not a healing space for me. I used to work in my lab over weekends, just to avoid being there. Now, when I sit back and reflect, in the initial months of lockdown, it was technology—television and the contact-tracing app—that constrained my physical mobility. But with time, it was again technology in a different form (Zoom, WhatsApp, Skype) that liberated me by enabling me to virtually move across continents, places, and time zones. I acknowledge the role of my privileged background in having access to these technologies that played a pivotal role in (re)connecting me with my house as my home—my safe space to heal—and with my spiritual self and my virtual support network. The sketch in Figure 2 captures some of these experiences.

REFLECTION

In this piece, we explored the relationship between technology, mobility, and liberation, grounding these themes in the thick and affective messiness of our own experiences of 2020. The Covid crisis brought each of us to a place of profound loss. For Maggie, her experience of collective loss living in Queens overlapped with a time of major personal loss: the ending of a relationship and

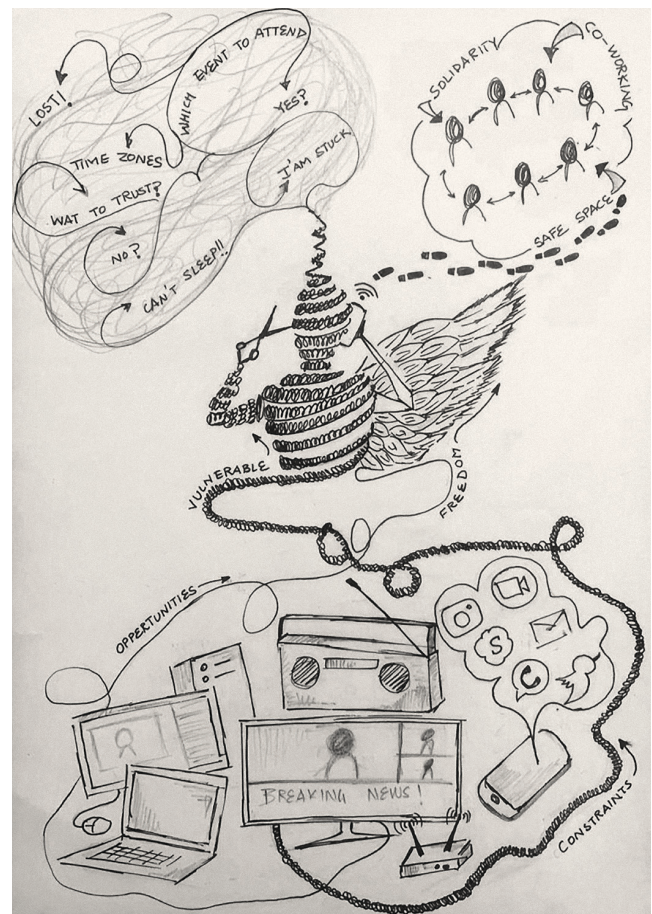


Figure 2. Anu’s sketch representing her experiences with mobility and technology during Covid-19, 12/2/2020.

the completion of a graduate degree, which—though something to celebrate—meant a loss of structuring institutions and a sole focus on a meaningful project. For Anu, being at home reminded her of the loss of her mother, as well as the loss of independence and her way of life in the dorms. Technologies—including novels, transportation technology (car and bike), commercial social media platforms, video-call applications, and our physical homes—played crucial roles in our ability to heal and create safe spaces. These technologies helped us experience enhanced liberation, enabling both literal mobility and the opportunity for emotional, spiritual, and intellectual release. Liberation for us has brought stability, well-being, and space for healing, states that our feminist forebears have long pointed to as desirable [11,12,13]. Liberation also left room for criticism: constantly questioning dynamics of privilege and inequality, structures of political economy, and embodiment [14,15].

In this vein, the same tools that catalyzed our liberation also illuminated constraints in our lives—inhibitions to our freedom. The tools we used allowed us to see our lack of control over our bodies, our data, and the social worlds in which we move. For instance, Maggie felt tied to using the Facebook platform for social support while feeling constrained in her ability to shape its role in society. More broadly, our political beliefs about the role of information technology companies in global political economy mattered little to policymaking at the corporate or government level. Further, our bodies felt pain and reached limits due to our increased reliance on screens and phones. Though technologies seemed to promise unchecked virtual mobility, our physiological constraints (physical pain and disrupted sleep) reminded us that technological limitlessness is both undesirable and a fantasy. We also felt the loss of our bearings about truth and authenticity. For example, Anu’s experience of contact-tracing apps was that they gave unreliable information about the rates of Covid in her immediate neighborhood, causing her confusion, increasing her fear, and, ultimately, restricting her and her father to their home. These constraints drew our attention to places where we can be more free and suggested to us what opportunities we might have to design for liberation.

To learn from our own experiences and our exploration of liberation, we have attempted to answer together: What does it entail to design for liberation? Liberation is a big category and deeply subjective. Anu and Maggie brainstormed together what liberation means for us today (December 3, 2020) and we’ve defined liberation as the qualities shown in Figure 3.

We have come to understand these states as liberatory in part because we have experienced their inverse, what we understand as constraint, particularly in the past year

of experiencing shelter-in-place orders, political turmoil, and personal transition. In different circumstances, with different histories and different identities, our understanding of liberation could change. That is to say, liberation is a personal category, best explored through our own experiences (i.e., the stories we just shared).

Our conclusion is that liberation is so subjective that it needs to be designed on a person-to-person basis and on a circumstance-to-circumstance basis. We cannot design for liberation for others without their input. Designing for liberation needs to be a dialogic experience, because we need to talk to people about what liberation means for them. Designing for liberation also requires self-reflection.

We therefore cannot answer the question: *What does it entail to design for liberation?* We can answer only the question: *How can we design our liberation in this time?* We have attempted to design for our liberation by reflecting on our own lives and where we feel the blocks to liberation are—where we are constrained. This illuminated for us ways in which we can be more free. Designing for our own liberation has entailed considering personal (re)design on three scales: our relationship to technology, ourselves, and our broader communities.

- Technology has created opportunities for access to people, ideas, and spaces. Thus technology itself has encouraged our liberation. We bring into our lives artifacts that promote feelings of aliveness, intellectual engagement, and social support.

Example: We both gained a lot from our use of technology, most noticeably in developing virtual social-support networks. Yet our contemporary information ecosystem has also caused

us confusion and difficulty in making decisions. For instance, the Indian contact-tracing app confused Anu and her father enough that staying at home was their best option, when they could have been in a better position to make a more informed choice with accurate information. We advocate for and seek trustworthy information systems that promote our liberation through intellectual stability and community cohesion.

- The impact of technology on us cannot be assessed apart from how, when, and how much we use it, as well as our intention for its use. In order to have technologies catalyze better sleep, nutrition, exercise, and a healthy mind, we need to prioritize these things by (re)designing a wholesome and caring relationship with ourselves, or a liberatory relationship with ourselves.

Example: We are working toward (re)designing ourselves with an eye to embodiment by reducing the physiological stress of work and the cultural expectation of overwork. Designing for liberation means that we must individually decide to turn off our phones a reasonable amount of time before bed and get enough sleep. It also

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— ANUPRIYA TULI

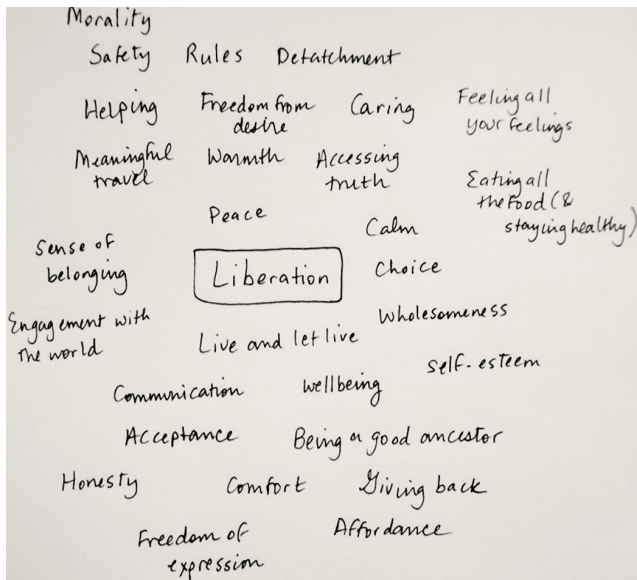


Figure 3. We define liberation with these qualities.

means working toward dismantling internalized cultural pressures to be constantly connected and working.

• As feminist scholars, we know that individual change and action cannot be separated from our milieu. Technology can act as a liberating force only when we address underlying questions of structural inequalities and violence along the lines of gender, disability, race, imperialism, and class. Believing in interdependence between people, the natural world, the material world, and beyond as a facet of liberation, we believe nobody can be truly liberated until these oppressive systems are torn down [3,16]. Designing for our liberation means designing an interdependent way of life that supports intellectual, spiritual, and emotional freedom for all.

Example: Designing for liberation for us has meant getting involved in our communities during this time of wide-scale stress. For instance, being involved with food delivery has made Maggie feel calmer and allowed her to process the collective loss in New York City. For Anu, connecting to colleagues through virtual conferences and providing support for their intellectual growth through academic service has given her an opportunity to catalyze access to information infrastructures to underrepresented minorities in India and elsewhere. Working together on this article through Zoom in New York and New Delhi has helped us find liberation *together* through friendship, solidarity, and collaboration. We recognize these steps as incremental moves toward our ultimate goal of liberation through equality and justice.

What can you, the reader of this article, take away from our stories and reflection? We suggest that readers can design for their own liberation through self-reflection: Where do you feel constrained? Where do you feel free? What is in your power to change, and how can you (re) design your relationship to technology, yourself, and your community to feel more free? Across experience, there is a generalizable relationship between technology, mobility,

and liberation: Technology acts as a lens on liberation. For us, technology has enabled the finding of liberatory states and also illuminated our personal constraints. Like in the relationship between space and place, technology can act as a mediator in moving from mobility to liberation (mobility with meaning). Thus, designing for liberation means noticing technology's potential for enabling constraints and proactively designing technology forms, rules, and limits that favor freedom.

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