JUST TECH

Interpreting Transnational Code Worlds/Work: A Conversation with Héctor Beltrán

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LABOR & ECONOMY

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Following the publication of his first book, Code Work: Hacking across the US/México Techno-Borderlands*, Héctor Beltrán discussed with Dannah Dennis, program officer and postdoctoral fellow of the Data Fluencies Project, the different dynamics present in the Mexican and Latinx community both in the United States and across borders. In particular, they focus on the role hackathons play across borders and Beltrán's analysis of gender, stacks, and disruption at and across the US-Mexico border.*

Beltrán is an assistant professor in MIT's anthropology department. He is a sociocultural anthropologist who draws upon his background in computer science to understand how the technical aspects of computing intersect with issues of identity, race, ethnicity, class, and nation.

Dannah Dennis (DD): To start, I wanted to ask how you feel now that your book is done and it's out there?

Héctor Beltrán (HB): This life project started even before my PhD dissertation. I'm glad it's out there. It was so much work that now you just feel a big burden lifting off your shoulders in a sense. But I'm happy it's out there, and now I have to get started on a new project.

DD: For sure, and I definitely want to hear a little bit more about your next projects. But, since we're focusing on *Code Work* today, can we talk a bit about your background? What brought you to write this book?

CODE WORK

HACKING ACROSS THE US/MÉXICO TECHNO-BORDERLANDS

HÉCTOR BELTRÁN

HB: Usually, when I tell the origin story, I start with how I went into anthropology from computer science, which people are really interested about. We can go there if you want, but that's a longer story. Since you're in the Bay Area right now, let's start there, which was where the ethnographic work began. I started with a master's degree in folklore at Berkeley.

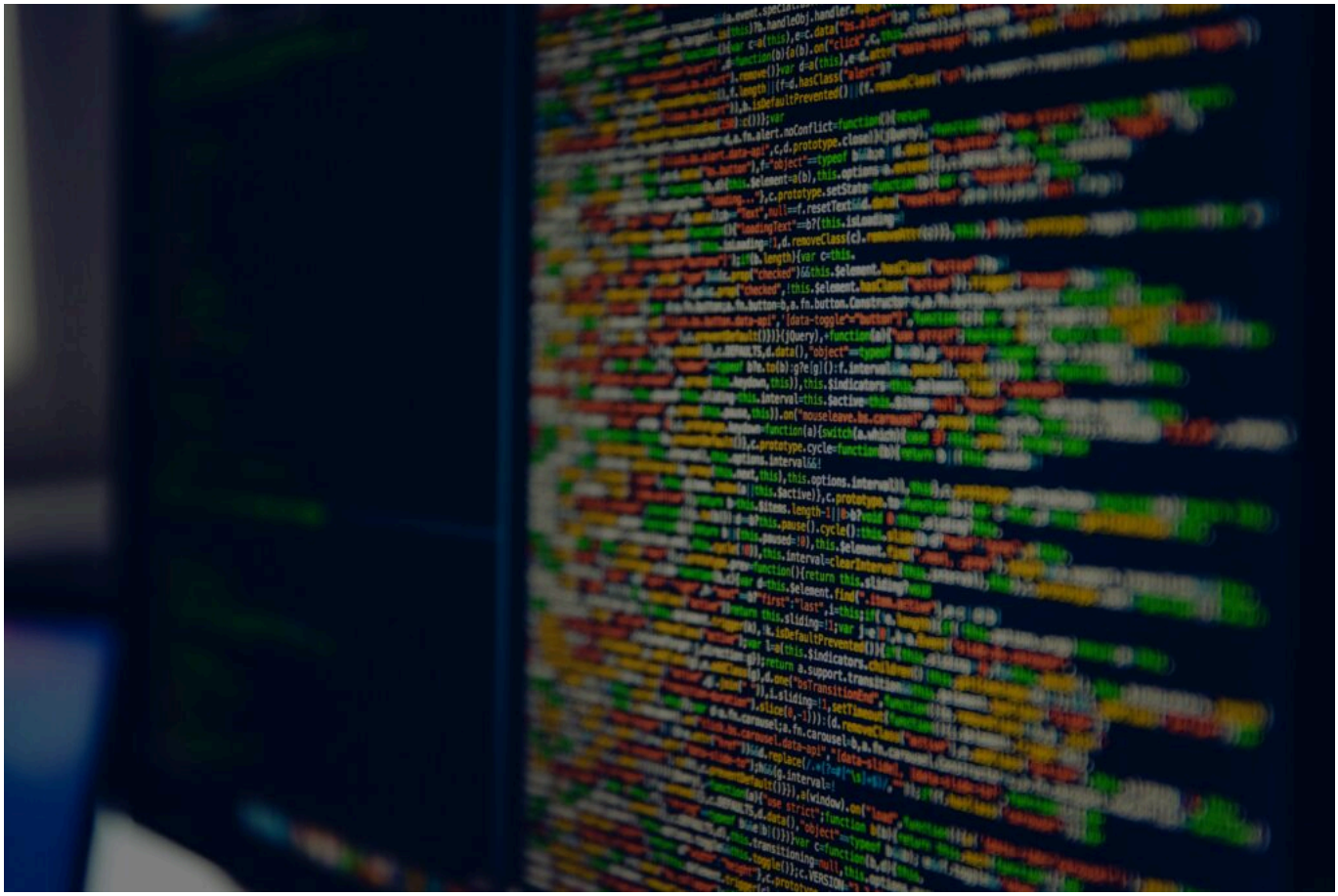
DD: That's a great program.

HB: Yeah, it's a great program. Perfect to make your transition to a PhD in anthropology. I knew I always wanted to do some sort of community work, working with people, especially from underrepresented or migrant backgrounds. So, I started working with a community organization focused mostly on Mexican and Central American migrants who identified as Maya or Indigenous in the Fruitvale district of Oakland, and they were led by this type of shaman/community connector. I was teaching them new technologies—mostly graphic design and basic computing skills—but also just how to navigate this new world in the United States.

As far as ethnography goes, I would join them in their family events and go around the city with them. We would go over to San Francisco and just walk around, that kind of thing. They would make these snarky remarks toward these Silicon Valley workers, the prototypical tech bros. They'd say things like, "Mira a estos culeros orgánicos" (Look at these organic assholes). I thought it was funny, but there was this sort of disdain or underlying tension, which brought me to thinking about gentrification and exacerbating inequality.

As we talked about ethnography and what I was doing in grad school, they understood that it had to do with studying communities. They asked, "Why are you studying us? You should be studying them, the tech bros. You say you have a computer science degree from this fancy place, MIT, why don't you go study them?" And, I thought, "That's not a bad idea. I should do something like that and somehow still be connected to the other issues I want to talk about or that I'm really passionate about."

I started getting some summer internships with the big tech companies, started attending all sorts of conferences while I was still working in the community group, and then I came upon the hackathon as the perfect empirical site, because it brought together a wide range of folks—tech bros, people interested in social change and working with communities. There was a lot of hype around the hackathon scene. They were all over the place, not only in the United States. There were hackathons in Mexico, and I said, "Oh, this could be a cool transnational project. Let's go check out what's going on there." This is how I honed in on the hackathon as a site to examine all the different issues, practices, politics that I end up talking about in *Code Work*.



DD: When reading the book, I really smiled when you referred to the hackathon as a ritual event, the anthropological take for sure. But it is also, as you describe in the book, a soup to nuts event. We're here for 48 hours or 72 hours to identify a problem—whether it's in healthcare or transportation or whatnot—which we work to solve, find funding for, or introduce to the market. Obviously, those projects have varying degrees of success, but it sounds like such an interesting and lively space for ethnographic work, because people are generating and trying to realize their ideas so quickly.

I also really liked that this book is not just based in the United States. It would've been probably easier for you to write a book on tech culture in the Bay Area, but you're doing a transnational project. You're taking us through techno-borderlands, drawing on the work of Gloria Anzaldúa and others. What pushed you to that angle? What do you think people don't know or don't understand about the transnational aspect of tech work, especially if they're only thinking about the tech world as being the Bay Area?

HB: I remember one time a professor from a prestigious East Coast university said, "I can't wait for your book to come out so I can use it in my classes, because a lot of students just think about Mexico as poor people or places where they don't have hackathons or technology." I was surprised that people still have these imaginaries in contemporary society, but it's true. Maybe people don't realize that these sort of tech hubs and hacker imaginaries also exist in the Global South.

At the same time, around the late 2010s, people started to be quite critical of big tech and Silicon Valley. The critiques themselves are embedded into some of the practices, programs, and ideologies of Silicon Valley. There was an event sponsored by tech companies in Silicon Valley focused on diversity and erasing some of the inequalities around tech work. One panel was focused on diversity and race, with

panelists that were very conversant on racialization, inequality, and the different hierarchies within tech companies themselves, and how they're also extrapolated to other spaces or the pipeline to the tech world. It has to do with education; it has to do with who's there in the first place, who's constructing these technologies. We thought, "Yeah, this is great. I'm so happy that these tech companies are at least addressing this and thinking about this the way we might be doing so critically at a university."

But then, the very next panel was about startups, developing resources, and inculcating this hacker mentality into places in the Global South, Latin America specifically, and it sounded like they just forgot about the previous panel. There was no talk about diversity or inequality within those places. It was just getting these local elites and dumping them in Silicon Valley and thinking about diversity in that way. It was amazing how these panels were back-to-back, and they didn't seem to be in conversation; or we have very different ideas about how inequality works and that within the Global South there are Norths or elites as well, and within the Global North there are Souths.

This miscommunication really inspired me to follow the hackathon across these multiple overlapping boundaries and take on the challenge of thinking about race, class, gender, all these different markers of differences, as these great theorists such as Gloria Anzaldúa do so well, within the spaces of technology and through the practices of hacking.

DD: Following up on that, because of the outsized influence of Silicon Valley, our popular images of who we think of as technological innovators and hackers are often very white, very male, very US-coded, but your book is giving us some important correctives to that, offering lots of thinking about the intersections of race, nationality, ethnicity, and gender in various levels and forms of tech work. For instance, you've got this great chapter about *abuelitas* as infrastructure. Toward the end of the book, you're talking about this really powerful image or idea of the cyber bracero or "cybraceros." Can you tell us about how some of these intersections and people show up in the book, and maybe talk about the concept of the Ethno-Stack, which I thought was central to your analysis?

HB: Another challenge of ethnography is telling good stories, telling stories that will engage people. That's something I really tried to work on as I edited and kept coming back to the dissertation and to the book. I think there's a couple of threads in this question. The *abuelitas*, the cybraceros, and the Ethno-Stack. I'll go one by one, and if you want to jump in with follow-up questions, feel free. So, the *abuelitas* chapter is interesting. It's this chapter about an event that was advertised as the first women's hackathon in Mexico and in Latin America. It points to this idea that there were always these "firsts," as well as this competitiveness around the form of the hackathon. We're going to have the first Latino hackathon, the first African American hackathon, the first hackathon focused on this or that. And, this brings us back to this idea you mentioned earlier about solving problems, which is inculcated into engineers and computer scientists.

DD: Also, there is this worth to being the founder, which is very much part of tech culture, startup culture.

HB: Absolutely. But in this case, it's an interesting event because it has some of that, but at the same

time, its women coming together and subtly critiquing this culture. For example, the event was framed around technologies for the home. So, there's a notion that it's quite easy to come in there and say, "Are they simply reifying the place of the woman in the home and gender-based inequalities?" Sure, we can go there. We can also think about how some of these narratives are reclaimed and how the home, as a space of knowledge production and technological intervention, should also be aligned with the figures of the disruptor or the innovator. This chapter especially examines what is different in Mexico, but also highlights how some of the disruptive and creative work that the prototypical founder, white male, Silicon Valley bro does is also being done there.

Something happened at this hackathon that points to the divergence people sought. At the end of the hackathon, there is this ritual in which these young women present their projects to the expert judges for recognition. When it was time to present these projects, family members, *abuelitas*, mothers come to cheer on these young women. I've never seen anything like this in a US hackathon. There's a lot to unpack here. Was this by design or what is it pointing to? It's pointing to who is usually left out of these spaces and how they can reclaim these male-dominated spaces marked for "respectable innovators."

After interviewing some of the young women, they explained their family was a major part of why they're there, and that they are the infrastructure, in a sense, that allows them to be there in the first place.

After interviewing some of the young women, they explained their family was a major part of why they're there, and that *they* are the infrastructure, in a sense, that allows them to be there in the first place. The *abuelitas* and mothers do all this "other" work that is just as respectable or should be considered respectable innovation as what the young women were being applauded for. I thought that it was interesting to think about all women's hackathon along all these different dimensions.

However, I wanted to make clear that this is not the stereotypical gender chapter, usually found in these ethnographies. Instead, I'm hoping that an analysis of the way gender and masculinity are constructed in these spaces is also part of my work. I especially get into this in the early chapters, thinking about the construction of masculinity and how that intersects with other issues of class, nation, and belonging when folks from different backgrounds—such as US people who participate in the Mexico hackathons and working-class folks from Mexico—and how different ideas about masculinity or hard work, rub up against each other, inform each other, but also come to contradictions in unexpected ways.

Hard things to talk about. There's no easy answer sometimes, but this is exactly why we go back to theories about borderlands and in betweenness and thinking about how these markers of difference are overlapping, intersecting, but how they might also be productive to think with.

DD: We have this idealized image of someone who's coding for like 20 hours a day. They never leave their desk or they never stop working. There has to be some kind of care and infrastructure around that

in order for it to happen. We have to think about *abuelitas* as that infrastructure, as that reproductive labor. However, so often that's invisibilized when we focus on these ideal, heroic "masculine figures" in the tech industry.

Let's go back to cybraceros.

HB: So, this is a term used by Alex Rivera, a brilliant director who recently got a MacArthur grant. A lot of academics like his film *Sleep Dealer*. It's considered one of the first sci-fi movies from Latin America. The film is about workers from Mexico who use implants, or "nodes," to connect themselves at "infomaquilas" where they're able to manipulate robots on the US side without leaving Mexico. It's what the United States has always wanted: all the work without the workers.

But even before the movie, which came out in 2008, he made a short video titled *Why Cybraceros?* It's a parody of a film from the 1950s by the California Growers Council about the original braceros—temporary workers who resolve man's age-old burden of manual labor. It's a parody of that film, taking it to the next step: How this might actually function. I wanted to end with that, because I wanted to come back to other spaces where these inequalities are reproduced, such as the kitchen or the field. What kind of other work are we forgetting when we're talking about code work and programming? And, what does it mean to hack borders? In this case, Rivera points to this figure of the cybracero who can move across borders without their body ever moving, calling attention to the absurdities of these borders and to critique them with different types of technologies. Or going so far as to ask what we mean by technology and what is specific to the code worlds.

In that conclusion, I also bring up this book, *Border Vueltas / Looping Fronterizo*, which is a collaboration between an anthropologist, Rihan Yeh, and artist David Morison Portillo. They go to the US-Mexico border at the San Ysidro crossing, and Portillo goes back and forth, crossing the border, coming back, over and over, in a performative art piece to call out the absurdities of the border, asking the officers to do things like refill the soap in the bathroom. "Es a través de la microdinámica de la interacción que pirinolear interrumpe el sistema" (It's through the microdynamics of the interaction that looping throws a wrench into the larger system), Portillo says about his performance protest.[1] In this exaggerated, accelerated version of "migration," he attempts to slow things down, expose, rarefy, find anomalies in and subvert the system, throwing himself at this exceptional space of the port, where the state has exacerbated power.

Thus, as they're describing the artwork, they use terms like loops and iteration, and I thought, "This is the same kind of thing that code workers are doing as well. So, what do we make of these connections?" It's not only code workers who are thinking in this iterative fashion; artists and academics are doing it as well. How can we think about hacking the border in different ways by taking some of the logics of coding and using them for other forms of intervention, especially collaborating across disciplines and lexicons?

DD: I love that. I really like Rihan Yeh's work and the idea of the border as one of these problems that could be addressed at a hackathon or through the iterative application of experimental work, as you say,

by artists, or by other kinds of thinkers and workers to highlight some of the absurdities and the inequalities that exist in these border regions. Yeah, that's awesome. So, let's talk about the Ethno-Stack, a really important part of the book as well. Do you want to explain what you mean with this?

HB: This is the main framework I want to introduce in the book—the conceptual framework that glues it all together—as something that will allow us to join the conversation, to think about all the different layers, borders, and inequalities, and bring all these markers of difference together. It's a complex framework. It has a lot of parts because it's trying to do a lot.

What is the stack? The stack, in computing terms, is the idea that we can move from one layer of abstraction to the next—from the zeros and ones, to microchips, to the MOSFETs underlying computing systems, to the next layer and the next layer, to the operating system, to the user interface. This is one of the core tenets of computer science—to abstract away the details of the components in one layer, so they can be used by components in another layer, and this is how you build robust systems.

One piece that inspired me to start thinking about difference in the world of computing, not just in the typical way most folks think about diversity and representation in tech work, but about the structures of computing and the logics underlying computing work, was written by Jason Edward Lewis in "Preparations for a Haunting: Notes toward an Indigenous Future Imaginary."[2] He's thinking alongside other writers who have been inspired by the stack, such as Benjamin Bratton, who wrote this bible-sized book called *The Stack*, where he pushes the stack and its metaphors to the planetary scale to think about *everything*, from human and nonhuman users to state governance to climates. But, if Bratton is looking out toward planetary scales, Lewis does the opposite. He wants us to go into the origins, the substructures of these technologies and their metaphors and conduct a sort of exorcism. He's grounding the stack, thinking about how we can make this technology speak in the way we desire. He's thinking from the perspective of an Indigenous person, getting Indigenous people to work with new technologies to learn the ways of the code worlds. But what happens when they get down to these underlying logics? He tells us that we're going to find the ghosts that have created these technologies in the first place, and that they're already embedded with certain imaginaries, certain ways to think about how the world is made up and that we have to work to replace these. He writes, "We need to ensure that some of those ghosts will have been put there by Indigenous people who partook in the construction of the technological substrate, having been fully active in the future imaginaries that dreamed it into being."[3]

How might technologies be made to work for a particular people, or how are they used by people who are the "other"?

It's a very creative way to think about the stack. There's an element there that I saw for ethnographic intervention, to actually work with people who are learning these technologies and ask them about how they might design different stacks, if there's a different way to organize the world, if there's a different

way to work with and transform computing technologies. My idea of the Ethno-Stack is twofold: The "ethno" first points toward this idea of difference. How might technologies be made to work for a particular people, or how are they used by people who are the "other"? The ethno in the ethno-stack also refers to the ethnographic approach that can lead us to think in this more expansive way about computing and its code worlds.

What might it mean to ground this computing stack in a different location, say Mexico, when people are usually othered in the worlds of computing, hacking, innovation, and try to think about what it means to create a different stack. In the end, I propose a set of questions for anybody to jump in and think about why do you enter the stack here, the stack representing this framework that drives the worlds of computing? Why do you enter these worlds? What layer of the stack would you substitute? What would you substitute it with? How do you see yourself navigating between these different layers of abstraction? What is being left out? What would you add?

It's an invitation for people to think with, but also against, the stack and computing technologies as they're entering these worlds of code.

DD: Thinking about people themselves as being part of the stack, participants in the stack, and all the levels to it, from the personal to the interpersonal, to the socio-political, the socio-technical, it's a really interesting way to try to think about how we make sense of these complexities that we encounter on all these levels.

I want to ask about the idea of innovative culture. When we think about tech and tech work, we think of innovation as being its central driver. But your book offers a really interesting critique of that notion or a corrective to it, when we think about what, for instance, that might look like in the context of Mexico. Do you want to say a little bit more about that?

HB: I think—as a fellow anthropologist you'll understand this—that one of the skills or methodological approaches that anthropology teaches you to think with is this idea of othering. How are others created and recreated through practices and policies? What is implicit? Who's the implicit "other" all the time? When you're thinking about an initiative, program, or space, those people who are left out are equally as important to think about than those who are participating. It's a simple concept, but I think it's really powerful. When innovators are introduced or a space is being constructed as innovative, who are the non-innovators? What is not innovative in this context?

I think that's why I opened the book with these three different buses, and these three collectives who are in different ways taking matters into their own hands in Mexico. They're using technology in distinct ways, explicitly or implicitly seeing themselves as hackers, yet they're completely separate and wind up with very different fates, from receiving awards and accolades to being disappeared by the government. One of the buses is full of the Ayotzinapa *normalista* students who commandeered the bus to attend the annual commemoration of the 1968 massacre; these students saw themselves as disruptors with a long history of activism, thinking about innovation for farmers and working-class people in the countryside, rethinking agriculture and deploying undervalued technologies with community-based approaches.

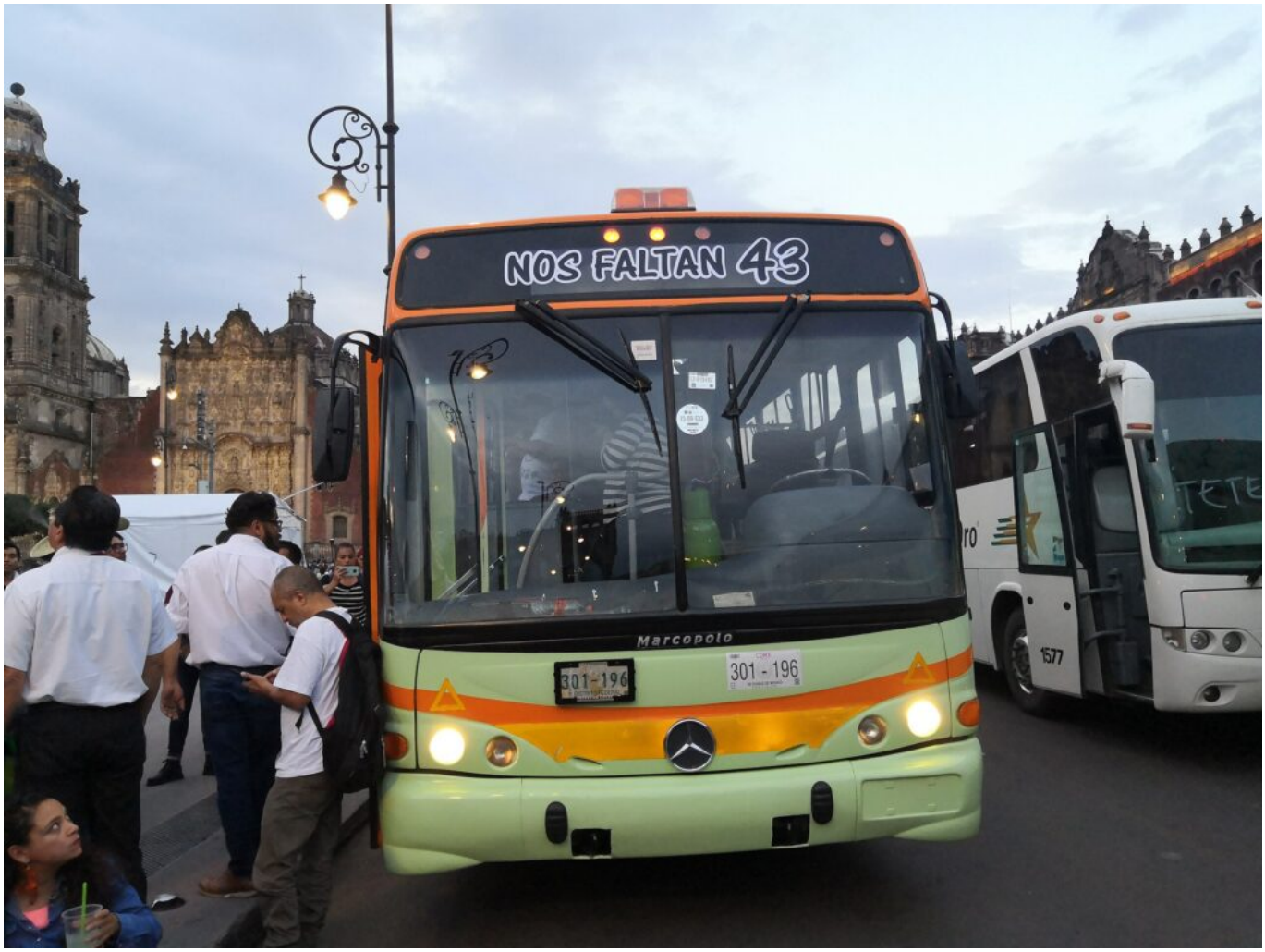


Photo credit: Wikimedia Commons/Wotancito.

My point in juxtaposing this case with the startup bus full of more eager hacker-entrepreneurs headed to another hackathon to solve more problems is to call attention to how these communities could have learned from each other. If any diversity advocacy stemming from hacking cultures is ultimately too narrow when it centers technology as an orienting concept, hackers could have learned from the *normalistas*, who have fostered class consciousness and fought for agrarian justice while surviving a century of iterations of repression masked as "national development," how to hone more radical politics. On the flip side, the hacker-entrepreneurs with experience navigating Silicon Valley politics to talk to elite publics and results-oriented investors might have helped *normalistas* gain resources and support for their projects while not losing sight of their ultimate goals. The possibilities are impressive, but, at the end, the *normalistas* were murdered or "disappeared," while some hackers received prizes and acclaim, because some "innovation" is valued and recognized and other innovation is criminalized and repressed. *Code Work* ethnographically investigates moments across hackerspaces and hacker lives where such potentials to collaborate across domains of innovation could have crystallized, unpacks why they didn't, and proposes how they might in the future.

At MIT, for example, folks who are often very focused on engineering and resolving problems with technology, come back to the anthropologists and social scientists and ask, "How do we make this ethical? What can we do to bring ethics and social change into these technologies?" They think it's going to happen with a talk or with a set of guidelines or even with just taking a class. No, it takes longer. The

critical thinking, learning about histories of activism and social justice, this kind of "development" has to happen from the beginning, and it has to be framed as equal "development" to learning new technologies. You can't do one without the other, because you're going to run into problems.

DD: Yeah, are you thinking about people and ethical relations and all those kinds of things as the icing on the cake, the last little bit of the process, or is it baked in from the beginning? Your book does a really good job of illustrating what those different approaches can look like.

You've been immersed in this project for a long time, and now you've got new ideas and new directions. So, what comes next?

HB: Sure. The next project is about digital nomads. There's a lot being written about nomads—people who have the privilege to work from different places, and travel all over the world. The literature itself is quite critical. People say this is a new form of colonialism, of privileged workers deploying their passport privileges. Headlines abound pointing to how these entitled people ruin local communities with increasing Airbnb rental units, pricing people out of their homes and communities. As an anthropologist, I'm trying to come up with a more interesting story. I think I have some directions. I've been watching a lot of stuff produced by digital nomads, like YouTube videos about their challenges, and examining how they frame themselves; the first step is to take everyone's perspective seriously. Now I'm getting ready to frame the story I want to tell.

DD: Something we like to do in our interviews is ask for recommendations. What are you listening to? What are you watching? What are you reading? What's informing your work, but also just feeding your creativity?

HB: I finally had a chance to dig into my "fun" to-read pile, and am working on Tommy Orange's novel *There There*. I'm loving it because it brings me back to Oakland, which is part of the origin story of *Code Work* and my ethnographic work, but it's a fascinating novel about authenticity and identity told from the perspective of different, complex characters. I'm also rewatching *O.J.: Made in America* because a recent return to my native LA made me think about the centrality of freeways there, and I wanted to re-live that Bronco chase. Ultimately, with whatever creative work I'm digging into I'm paying attention to how the creators tell captivating stories to engage audiences; I'm looking for examples of good storytelling as inspirations for my next project.

This interview has been edited for length and clarity.

Footnotes

1 David Morison Portillo and Rihan Yeh, *Border Vueltas/Looping Fronterizo* (San Diego, CA: Taller California, 2021), 35.

2 Jason Edward Lewis, "Preparations for a Haunting: Notes toward an Indigenous Future Imaginary," in *The Participatory Condition in the Digital Age*, eds. Darin Barney et al. (Minneapolis, MN: University of Minnesota Press, 2016), 229–250.

3 Lewis, "Preparations for a Haunting," 247.