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"It's an Ongoing Bromance": Counterculture and Cyberculture in Silicon Valley—An Interview with Fred Turner

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Abstract

Fred Turner is considered one of the most influential experts on, and critical observers of, cyberculture. He is Harry and Norman Chandler Professor of Communication at Stanford University in the Department of Communication. Through his work, he provided a thoughtful analysis of the politics and culture of Silicon Valley. In his books, he explored the connections between the collaborative and interdisciplinary research culture of the Second World War, the protest movements of the 1960s, and the managerial ethos permeating digital and new media industries. In this interview, we discuss about the consequences that the countercultural movements had on the organization of labor in modern tech giants, especially in relation to the substitution of hierarchies for flat and more entrepreneurial structures. We also talk about the consequences that a code of ethics might have in the democratization of technology and the responsibility that we have as citizens and academics.

Keywords

business and society, unions/labor relations, technology, political economy, interviews

Fred Turner is considered one of the most influential experts on, and critical observers of, cyberculture. He is Harry and Norman Chandler Professor of Communication at Stanford University in the Department of Communication. Prior to joining Stanford, he taught at MIT (Sloan School of Management), Harvard (John F. Kennedy School of Government), Boston University, and Northeastern University. He has published three books: *The Democratic Surround: Multimedia and American Liberalism from World War II to the Psychedelic Sixties* (Turner, 2013), *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Turner, 2006), and *Echoes of Combat: The Vietnam War in American Memory* (Turner, 1996).

I had the chance to sit down with him for an interview on a rainy February evening in Vancouver, BC on the occasion of the Digital Democracies Conference organized at Simon Fraser University. In the interview, we talked mostly about the ideas introduced in his landmark book, *From Counterculture to Cyberculture*. The book is a thoughtful and illuminating analysis of the politics and the cultures of Silicon Valley. By combining a meticulous analysis of the archival records with vivid and vibrant accounts of historical facts, Turner explored the connections between the collaborative and interdisciplinary research culture of the Second World War, the countercultural protest movements of the 1960s, and the managerial culture permeating Silicon Valley.

Turner's analysis revolved around the life of Stewart Brand, the eclectic intellectual and entrepreneur known as the founder of the *Whole Earth Catalog* in the 1960s, The Whole Earth "Lectronic Link (WELL)—an online community at the dawn of the information age—and the Global Business Network, a series of events and conferences for top managers and academics in the 1990s. The book followed Brand from the psychedelic years he spent on board the Merry Pranksters" bus in the mid-1960s to the apex of the new economy era in the late 1990s. Turner illustrated how, along this 30-year journey, Brand and his associates (including *Wired* magazine editors Kevin Kelly and Louis Rossetto, Electronic Frontier Foundation founder John Perry Barlow, and writer and futurist Howard Rheingold) were instrumental in bringing cybernetics out of the research laboratories of the Second World War and into the countercultural movements of the

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1960s. In particular among the "New Communalists", the wing of the countercultural movement that instead of engaging in organized political action as the New Left did, retreated into communes in rural areas of California, Colorado, New Mexico, and Tennessee, and turned "toward technology and the transformation of consciousness as the primary sources of social change" (Turner, 2006, p. 4). Through the pages of *The Whole Earth Catalog* first, and the digital online community the WELL later, Brand contributed to the popularization of the works on cybernetics of Norbert Wiener, and the technocentric visions of, among others, Marshall McLuhan and Buckminster Fuller, and helped constitute cybernetics as one of the "most influential intellectual movements of the twentieth century" (Turner, 2019, p. 28). This movement, in different forms and across decades, saw new digital technologies as offering the possibility to overcome the alienating and bureaucratic machine of cold war—and corporate—America. To the New Communalists, the computer became an instrument of individual liberation and personal freedom, rather than a symbol of bureaucratic oppression and control. The legacy of these countercultural experiences, Turner has argued, survived the ultimate failure of the communes and, today, constitutes the foundation of Silicon Valley techno libertarian culture. This is a culture that hinges, as Boltanski and Chiapello (2007) have also argued, on counterculturalinspired values such as independence, self-reliance, and authenticity, and has been fundamental in legitimizing "the dehierarchization and decentralization of businesses, and the flexibilization of production and the labor process" (Fisher, 2010, p. 23).

Turner's book ends just before the dot-com bubble burst at the end of the millennium. Yet, through his work, Turner continues today to explore and analyze the entanglement between counterculture and the "cyberbolic" (Woolgar, 2002) thinking, a mix of determinism and exaggerated faith in the capacities of technologies, commonly found in the digital and new media industries. Alongside his third book, *The Democratic Surround*, which expanded on the connection between counterculture and the Second World War research efforts on media, art, and political communication, Turner conducted field research within the walls of the tech giants such as Google and Facebook. Specifically, he examined the use of art at Facebook as a means of managerial surveillance and control (Turner, 2018), and conducted an intriguing investigation into the role of the Burning Man festival in representing and legitimizing peer-to-peer, project-based communal modes of production, which form the basis of knowledge manufacturing processes as found at Google (Turner, 2009).

As someone involved in the study of technology, work, and organization, in this conversation with Fred Turner, I was eager to hear his ideas about the consequences that the countercultural spirit had on the organization of labor for modern tech giants, especially in relation to the substitution of hierarchies for flat and more entrepreneurial structures. Specifically, I wanted to understand his position on platforms such as Uber, Upwork, and Amazon Mechanical Turk, and their promises to renew, once again, the Communalist vision for a world free from the oppressive and alienating dynamics of bureaucratic production structures, and their substitution with algorithmically-mediated marketplaces where "users are configured as independent, interchangeable, and flexible 'units'" (De Vaujany et al., 2019, p. 1). Furthermore, I wanted to hear his opinion on the possibility to adopt a code of ethics for democratizing the development of new technologies, and for the evaluation of their societal impact—a controversial issue indeed, advanced in the past by scholars such as Shaiken (1985) and Winner (1978).

My attempt to focus on platforms and their impact on labor was welcomed with an invitation to look behind them and to consider the places where these technologies are being developed, the Bohemia-inspired offices of the Silicon Valley tech giants, and their cultures. From this perspective, Turner sees platforms as the latest technological reiteration of the Communalists' bankrupt dream of "working whenever and wherever you want and in a benevolent way." Such a dream was born out of New Communalists' inability to listen, in the 1960s, to the needs of a working class from which it was increasingly drifting away. This dream, instead of generating non-alienated labor spaces, has become responsible for the establishment of a work culture that blurs the line separating the personal from the professional sphere, subsuming them both to the logics of production (on this issue, see also Gregg, 2011).

In preparation for this "Meet the Person" article, I also reflected on Turner's suggestion to take a step back in respect to the object of inquiry in order to capture the "low and slow changes that really matter." Taking a step back means, according to Turner, historicizing technology rather than trying to follow the industry in their rush into the future. This approach should not, however, provide us an excuse for retreating into isolated, self-serving academic circles. Quite the contrary, Turner is vocal about the necessity to be proactive scholars and engage with the increasingly disenfranchised class of workers today affected, in the case of platforms, by an organization of labor enforced through and by algorithms. In the 1960s, the countercultural movements of the New Communalist failed to engage and join forces with the working class, thus paving the way for the establishment of cyberculture and the lifestyle politics responsible for the class polarization we are witnessing today. Failing to recognize the experiences of the people we seek to study and failing to acknowledge our own experiences, in many cases as workers ourselves subject to the same precarity and pressure to blur the personal and professional spheres within our institutions, can only further polarization and perpetuate a politics, and a research culture, unable to generate meaningful social change.

Interview

Alberto Lusoli (henceforth AL): Welcome to Silicon Valley North. I am saying Silicon Valley North because Vancouver is described as one of the emerging ecosystems for digital, software and media ventures. Thanks to a permissive tax scheme, favorable immigration policies and its proximity to Silicon Valley, Vancouver has become the home for several tech giants such as Amazon, Electronic Arts, and Facebook. The expansion of the tech and creative working class has led the media to identify Vancouver as the Silicon Valley of the north. Whether the moniker is appropriate or not, I think that it signals how pervasive the Silicon Valley discourse, or the "Californian ideology", as Barbrook and Cameron (1996) would call it, is.

As an attentive observer of the tech industry, can you talk about the long-term impact of the collaborative research culture of the 1940s and 1950s, and of the countercultural values of the New Left and New Communalist movements on the organization and culture of labor in tech giants and start-ups?

Fred Turner (henceforth FT): Sure, I'll give it a try. When I wrote my book *From Counterculture to Cyberculture* (2006), people told me that I had written a book that showed how the counterculture brought us the tech world. I think that's wrong. What I tried to do is show that the military and industrial collaborative research culture of the Second World War was actually incredibly flexible, loose and open, and that it helped to bring us the counterculture. It helped us to imagine a world that could be built around shared technology, shared mindsets, constant collaboration, and constant innovation. A world in which technology and social change could be intertwined with one another.

When I was in the library at MIT, I found a collection of oral histories written by the wives of scientists who had been involved in military research at MIT during Second World War. Their stories were so fascinating. They talked about living, essentially, communally. There was no private space as there were no boundaries between professions. Everybody was just trying to figure out how to win the war.

It was a proto-communal lifestyle. When we got to the 1960s, and you have the commune movement being born in America, you can see the commune people, especially thanks to Stewart Brand, buying into the ideals of collaborative work and pushing the idea of scientific and technological advancement as the gateway to a better future. The New Communalists believed in the possibility of building an "engineered environment" that was an alternative to, and immune from, politics. The New Left, instead, was busy doing politics. The communalists really thought: "Ah, we can get rid of politics. If we just get our technologies right and drop the right amount of LSD, then we can build these new societies around a shared consciousness." And as I've tried to show in my books, this was an idea coming straight out of the Second World War research laboratories.

This has very pernicious consequences for us today. The laboratories of the Second World War were mostly people who were already culturally similar. They were mostly well-trained and well-educated male scientists. Likewise, the communes tended to be mostly white, and mostly middle or upper-middle class. In all of those places, organizing around a shared consciousness meant letting go of bureaucracy, letting go of the rules, and starting to organize instead around a shared culture. Well, as soon as you start organizing around shared culture, you start including those who have that culture, and excluding those who don't.

And so, the irony, a very pervasive irony in Silicon Valley today, is that as you open up systems and as you de-bureaucratize, you make way for modes of prejudice that bureaucracy was meant to prevent. Therefore, the kind of collaborative open culture that we associate with the early internet comes from a counterculture that brings with it a set of prejudices that still haunt us today.

Here are a couple examples of communal prejudices that I think are still with us. The communes of the 1960s tended to be very male dominated. They tended to be hetero-normative. They also tended to be white and were frequently placed in locations with large native populations or large Mexican American populations. But they were imagined as having been built in the middle of nowhere. Communalists frequently saw themselves like Columbus, landing in an uninhabited place, which in fact wasn't uninhabited at all.

We can see the same dynamic repeating itself now. We see a sort of "bro-culture" emerging in Silicon Valley. We see Silicon Valley tech workers landing and imaging that they are arriving in a Bay Area that is only built for them. As a consequence, the other kinds of folks who are in the Bay Area already are being pushed away from what has become Silicon Valley out to the edges and out to the East Bay, out to the north. They are becoming long commuters. That's not quite the society that we hoped we were going to build.

AL: I think this is a great introduction that leads me to a follow-up question. In your essay "Machine Politics" (Turner, 2019), you mention a hospital as an example of the bureaucratic organization of labor which allows people to work together for the achievement of a common goal: saving lives.

I think it is an interesting example because hospitals are unique bureaucracies in the way that their workforces and physicians are subject to the Hippocratic Oath, which imposes on them a common goal and sets the boundaries of

the practice. Transposing the idea of the Hippocratic Oath to technology, I am wondering about the possibility of adopting political, ethics, alongside the technical standards for evaluating the appropriateness of technology. Scholars have been thinking about it for some time now (e.g., Feenberg, 1992; 1999; 2002; Winner, 1978). Do you think that it might be possible and useful to enforce socio-ethical accountability systems disciplining technology and the labor that they subsume?

FT: I think it's entirely possible. I think that the Hippocratic Oath is a really good example of how it might work. We imagine the Hippocratic Oath as something that doctors might simply believe, but the Hippocratic Oath is enforced by a series of practices and behind them are the rules and regulations inside the hospital.

In the case of technology, it won't work if we simply try to get tech folks to believe differently. If we just tell people "Don't be evil"[1] then it won't work. It didn't work for Google and it is not going to work for the rest of us. What might work is if we develop a code of ethics associated with technology that starts with "Do no harm" and proceeds from there. A code backed by organizational standards for labor and practices inside companies and state-based regulations on top of that.

In this respect, I think the state has to get involved. One of the myths that the tech world has hoisted on us is that the state is, itself, evil and that it doesn't represent the people. Instead, only the tech world represents the people because they are busy collating the people's voices with search engines and social media. I don't think that that is true at all. I believe that hospitals work because they have a clear mission to which the doctors are ethically aligned and they have the ethics drilled into them. The ethics are drilled into them by the institutions that, in turn, reward them for following the ethics and punish them for leaving the ethics behind. And so the question I think that we have in the tech world is, how can we build an ethical register, a set of principles and then enforce them? That's the real question. Those two things have to go together. You can't just believe differently. Google tried that and it didn't work. You have to believe differently and organize differently.

As for labor, you know, I think that Mary Gray's work (Gray & Suri, 2019) is very much on point here. I think that the challenge is to recognize the kind of labor that digital media has made possible, the kind of distribution that they make possible, and the harm that can come from that. Consider, for instance, Uber drivers. They are not making much money. You look at the ghost workers who Mary profiles (Gray & Suri, 2019) and they are people working around the world on local California projects, but they labor on terms that are set by the place where they work. They can't move to Silicon Valley because they are unable to migrate to California. And so they suffer. Therefore, the question is, how do we build an ethics of labor that is transnational? That's not only a tech problem, that's a global labor problem.

AL: I want to focus on the topic of labor in the age of digital platforms. In a previous interview (Khan, 2018), you mentioned your interest in the early American Puritan dreams of liberation and the re-enactment of those dreams in the modern hi-tech industry. I found your ideas to fit well with the Silicon Valley discourse and the dream to leave behind the known world of everyday employment, the 9 to 5 kind of job of industrial capitalism, for the pursuit of non-alienated existences in which everyone can design and build their own career.

This brings me to platforms such as Uber, Airbnb, and Foodora. They have been framed, rhetorically, as means for remediating the alienating dynamics of industrial capitalism. By offering self-regulating market structures and allowing everyone to participate in them, they perfectly serve the desire to escape the 9-to-5 job, enabling everyone to pursue a career as an independent economic actor. In practice, they have become the means of systematic discrimination and exploitation. I believe that the recent strike of Uber and Lyft drivers is the most visible consequence of this new form of exploitation.

I'd like to hear your opinion about it and whether you believe the platforms can be democratically reformed and, in any case, how can we counter—intellectually and materially—the values they embody.

FT: That's such a tough question. There are actually two questions in there; the academic and the political.

Speaking of platforms and politics, I think that there are a few challenges. You know, platforms go global, but regulatory regimes still tend to be anchored in particular states. States tend to have geographical boundaries. So how do you regulate a global platform? I think that's an open question and I do think that the states themselves have to be involved.

Speaking of platform democratization, I don't think that mere participation constitutes democratization. I don't think that the fact that a platform is open to many peoples' use renders it democratic in any way. Nor does it render its effects democratic. I don't know how to fix them, I truly don't. I think that my friend, Tarleton Gillespie, might have a better idea than I do (see Gillespie, 2018).

Academic tactics are a little clearer to me. The first thing that we have to do is historicize. The industry is rushing, rushing, rushing into the future. When I joined academia, I remember being struck that many of the people around me were really focused on things that were going to matter for the next three to five years. Then I realized how those

research studies followed the three-to-five-year industrial cycle. As an academic, I believe that we should take a step back and ask ourselves the questions about the low and slow changes that really matter.

In the case of platforms and platform labor, for example, the dream of non-alienated and collaborative labor spaces, the dream of working whenever and wherever you want, and in a benevolent way stems from the imagination of the 1960s. As Boltanski and Chiapello have shown (2007), the countercultural values of the 1960s flowed straight down through the management theory of the 1990s and helped us end up where we are today. Along the way, we forgot that the communes that tried living collaborative lives were miserable. They went bankrupt, they went broke, they suffered, and they had charismatic leaders who were often less than wholly benevolent.

I think that the communal dream is bankrupt. Which brings me back to my solution. I feel like a curmudgeon when I say it, but I think that bureaucracy is underestimated. I think that rules are underestimated. I think that roles that effectively distinguish between home and work are underestimated. I've spent some time at Facebook lately and they talk to their workers a lot about the need to bring the whole self to work. I think that's a nightmare. There are parts of myself that I don't want at work. I like to go to work to escape some parts of my life. And a lot of the time, I want no work at home either. I want to able to break those things apart. During the industrial era, people fought very hard to break those things apart—to not have to do piecework or to have an office separate from their home. Some of those things, some of those distinctions, are very valuable. They keep us sane and I'd like to see us bring them back.

AL: I'd like to explore more in depth your thoughts about the role of academia in the platformization of labor. Throughout your work, you traced the lineage of countercultural values as starting from the Second World War-era governmental and academic institutions, as in the case of the RAD Lab at MIT. You've shown how academia was fundamental in creating the conditions for the subsequent affirmation of the New Left and Communalist movements.

I am interested in hearing your thoughts about the current state of academia and whether you believe that it has the potential to foster cultures and practices that are capable to respond to the platformization of labor and, to a larger extent, democracy.

FT: I think that a lot of the protesters of the 1960s made a terrible mistake in protesting only with people like themselves. By the early 1970s, Richard Nixon was able to inspire thousands of hard hats to march through the streets of New York in support of his policies. They were representatives of the working class and they saw their interests as being opposed to those of the students who were marching from the universities.

In the 1960s, especially on the commune side of the counterculture, but also on the New Left, young Americans seemed to be protesting a kind of bureaucratic, Cold War world. However, through their protests, they actually cracked open the door to the kind of world that we inhabit now. A world in which we blur the professional and personal constantly. When they cracked the door open, people who could have told them where the problems were, members of the working class, were not part of their movements much. I think that the university today is in danger of making that same mistake. Students and the activists work with the need to reach out to members of the disenfranchised working class. If we do not work to address this class division, then we're going to have a lot of trouble in the tech world.

You can see this in the United States so intensely right now. I am constantly, endlessly, perpetually frustrated by the emphasis in universities on issues that are important but that are distinctly upper class—weirdly, even including identity, which of course is, by definition, something everyone wrestles with. The protest that I see most commonly in my local world are protests around pronouns. Are you using the proper pronoun? Do you recognize my distinct gender identity? Don't get me wrong, I think that these are important issues. I am not trying to denigrate them. But what I'm noticing is that the shift of politics into that private personal sphere keeps you in the upper class. It doesn't cause you to reach out to working class people, whose interests may or may not be focused on gender pronouns and bathrooms. They may actually be focused on, "Oh my God, I can't feed my family. I have no social welfare, I have no health care."

Most of the students I meet with these days are focused on issues that come from, and are connected to, the life stage that they are at and the class that they are already a part of. If we're going to prevent the *uberization* of the American labor force, then what we need to do is get to know some people in the working class who are in those universities with us. That's a real challenge. I don't see that happening nearly enough.

Now, there are some new things happening in Silicon Valley these days. For example, the work of the Tech Workers Coalition[2], which is a group of tech workers of all strata that is actively working to organize everybody, from security guards up through to coders. They have hosted meetings with students at Stanford and they have been terrific. They've asked people like me to speak to them and be a part of their meetings. That's the first sign I've seen that things might go differently this time than they did in the 1960s. But there are a lot of incentives for students not to go that way, especially in elite universities. There are a lot of incentives to pay lip service to the need to make change and then go and work for Google.

I think that certainly the Communalist way of counterculture has left us with a kind of lifestyle politics. However, if we keep doing lifestyle politics, it's going to be very hard to really change the organization of labor. We will still be upper class people and will feel good about ourselves, plus we will be college graduates, but large portions of America that labor in other ways will be cut off from us and us from them. As a result, they will get more and more resentful. Our working conditions will deteriorate and we will end up polarized, even more polarized than we are right now. And that would be very bad, for everybody.

AL: I think this resonates very well with the kind of polarization that we are witnessing in the United States and European political landscapes.

FT: Yes, it's really wild. Let me focus on the issue of polarization for a minute. The platform conversation is a conversation that is happening primarily among academics.

I grew up in a very rural town. There was a university there, but the population was mostly dairy farmers. I don't think my dairy farmer friends are wondering about the politics of platforms. I think they're wondering how they're going to get paid. I think they have their opinion about how people behave on Facebook. But at the end of the day, dairy prices matter a whole lot more.

AL: I see. Although it might be argued that at some point, platforms will impact the lives of those who are not currently concerned, or affected, by them.

FT: Yes, you're absolutely right. And that's why the question you're asking is so important. How do we raise the alarm?

Take Uber for example. The taxi industry might be like a canary in the coal mine. It might be the first industry to be disrupted by platforms and maybe we can all look at that and say, "Hey, wait a minute, these other industries can be affected by a labor platformization as well".

The point is to become aware and alert. What should we be alert to? Who can we alert? How should leading organizations in various industries be alerted and respond to this?

AL: You briefly touched on the issue of identity and I believe that this is a key point. I am convinced that professional identities play a pivotal role in the constitution of new forms of capital accumulation. In a previous interview (see Bick, 2014), when discussing the new identities of the tech industry you used the musician as the archetype of modern tech workers. A creative, yet precarious, working subject. As if creativity and precariousness should necessarily go hand-in-hand. To some extent, this reminds me of Boltanski and Chiapello's artistic critique of capitalism (2007). At the onset of the digital revolution, the hacker, the artist, and the nerd became archetypes for a generation of workers that struggled to impersonate the professional identities of industrial capitalism. Fast forward 30 years and production in tech companies is still very structured and fragmented, in ways not too dissimilar from what was happening during industrial capitalism. Can you talk about the tension between the Bohemian aspirations of the digital working class and the industrial reality of the tech industry?

FT: Like I said, I've spent some time inside Facebook lately and I've come to think about Facebook as a Bohemian factory. At Facebook's headquarters in Menlo Park, cafes and restaurants are everywhere. It looks like a little city once you are inside. It's like a Bohemian street where everything is free and you don't have to pay for anything. Interestingly, art is also everywhere. Facebook has hired artists to sit out in the squares in between the buildings, make art and talk to people. This is because Facebook wants their employees to imagine themselves as creatives (Turner, 2018). This can also be seen in the workplace architecture. The offices are huge open floors so that you can see all the way down and see everyone. Zuckerberg himself has a glass office, a glass box, sitting in the middle of this open floor.

What is happening at Facebook is a Bohemian mode of surveillance. It was very common in previous forms of Bohemia as well. You are put in a position where you can see everyone, watch one another, and figure out how to do things together. You can see it at Burning Man as well, you can see it among the hippies, and you can see it in all of these other countercultural spaces.

On the one hand, it looks really liberating and free. Facebook does not look like IBM in the 1955. It is not people in suits. It is not gender divided the way that it used to be. It is not men on one side of the room and women on the other. Men at the desks and women serving. On the other hand, I think that it carries with it problems that first emerged in the 1960s. We keep thinking that Bohemia is a good alternative to bureaucracy. However, that's a language borrowed from the 1960s, and even then, Bohemia was not a good long-term alternative to anything for most people.

Part of our confusion here is that we imagined Bohemia and that kind of free, unrestricted collaborative work as the alternative to hierarchy and to alienation. That's a mistake that a whole other generation made from 1965 to 1969. That's what sent New Communalists back to the land. However, those communes died very, very rapidly. Unless they had authoritarian or religious leaders, they were mostly gone within a year or two. And I think there's a lesson there. The kind of struggles they had around organizing around work, around charisma, and around gender norms, those kinds of things are all coming back to us now.

Take Tesla, the car company, for example. Tesla is not a unionized shop. It's a famously anti-union shop where people work incredibly hard and where the injury rates are much higher than they are supposed to be. They have a classically charismatic leader, Elon Musk, who exerts his will in a classically charismatic style. At Tesla, the workers are intensely collaborative, but they're also intensely endangered, at least by comparison to other workers of their kind. So on the one hand, you could say that Tesla is a Bohemian factory, where the workforce is free, collaborative, and flexible. But the cost of that Bohemian attitude is very high. And it is not just because it's gone wrong at Facebook or at Tesla. It is because the mechanics of Bohemia that we've inherited from the 1960s are themselves a problem. They do not produce stable, long-term, sustainable environments. And that's what we need.

AL: I was thinking of how the Bohemian discourse somehow percolated into managerial practices also thanks to the encounter with complexity and chaos theory in the 1990s. This encounter justified and legitimized the Bohemian spirit in scientific terms.

FT: Yes, and that's a repetition of what happened in the 1960s. In the 1960s, Bohemia and cybernetics justified one another. When you dropped LSD, you were supposed to be able to see these invisible systems of meaning that were otherwise impossible to see. And that was the same kind of systematic vision that cybernetics has suddenly offered in the scientific space. When Stewart Brand created the *Whole Earth Catalog*, who is in the first edition? Norbert Wiener. You don't need Norbert Wiener's cybernetics if you're heading back to the land. You need farming tools. This is unless what you're heading back to the land to do is see invisible systems using technology. So cybernetics and countercultural ambitions legitimated each other in the 1960s. Then they did it again in the 1990s with *Wired* magazine and Kevin Kelly's work, and then again with the idea of complexity and the theory of chaos that developed in places like the Santa Fe Institute. It's an ongoing bromance.

AL: I want to try to close this interview on a positive note. As we have discussed, the research culture of the Second World War and the countercultural movements of the 1960s have reshaped our Western technological imagination. I'd like to hear your thoughts about non-Western cultural movements, maybe born as a reaction to the Western techno-utopianism, which might change, once again, our conception of technological development.

I'll give you an example of what I mean. In the book *Between Reason and Experience*, Andrew Feenberg (2010) talks about "layered development" as a way to illustrate how Western technologies were adopted and reinterpreted through the lens of Japanese culture. This resulted in the complete transformation of Western technological artifacts, with miniaturization being the most visible example of this confluence.

FT: Let me take the question in a different way. I think that, as academics, we're trained to think in terms of colonization. We were frequently raised on the critical theory that was created during the post-colonial or decolonizing moment after the Second World War. And so, when we see things like the spread of technology around the world or Silicon Valley having sudden power in Africa, China, and Asia, we often think of it as a kind of active colonization led by a set of Californian companies working to extend the reach of the Californian ideology.

We see Facebook almost as kind of a new British East India Company sending its tentacles out. I think that some part of that is fair. Facebook is in many ways a global mining engine for the social world. It really is the British East India Company again, going out to suck tea from India. But, that aside, the trouble with the colonial metaphor is that it tends to make us look for resistance. And then if we look for resistance, we only see colonizers and resisters. What we miss are the collaborations. I think that is where the real action is. Consider for example, Shenzhen in China. Silvia Lindtner's work on this subject is really strong (Lindtner, Greenspan, & Li, 2015). In Shenzhen, China, there's a Shenzhen way of doing things. It's very Chinese, but it's also very much built on having American markets collaborating with American technologists who fly in and out.

For this reason, I really think that the occupier/resister frame leads us astray. I think that where we need to be looking is at these kinds of hybrid places where both cultures are shaping each other and where new things are emerging.

Concluding Comments

I believe Turner's work provides an excellent example and inspiration for scholars attempting to re-humanize organization and management science (Petriglieri, 2020). This pursuit has become increasingly relevant at a time when work takes place within and through technologies whose instrumentality is hidden behind a layer of stone-cold algorithmic rationality. Turner relies on history as a way to peek behind the technological curtain and expose the cultural hinterland or, as Feenberg has called it, the "technical code" (1999), undergirding the design of modern technologies. Sociologists have advocated for an integrated approach to technology and society since the 1980s (Bijker et al., 2012; Hughes, 1983; Latour, 1987), especially in those disciplines traditionally focused on one factor of the equation. In the context of organization and management science, Turner's suggestion to

historicize sounds like an invitation to conceive the organizational changes stemming from the diffusion of digital means of communication and production as intertwined with the cultural and historical context in which these new technologies are being developed. This is not enough, however, to avoid making that same mistake the New Communalists committed in the 1960s. The challenge for us all, therefore, is to practice a kind of research capable to overcome "the fragmentation and polarization that threaten the body of societies, including academic ones" (Petriglieri, 2020, p. 13). How this might translate into practice is still an open question. As an example, Turner offered the work of the Tech Workers Coalition. Yet, answering this question is our responsibility and should constitute an integral and essential part of our work.

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Notes

1. "Don't be evil" was Google's code of conduct motto from 1998 to 2015.
2. See https://techworkerscoalition.org/

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