The technologies of all dead generations

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A couple days ago, I keynoted a conference at Penn's Annenberg School org David Elliot Berman, Victor Pickard, and Briar Smith. It was called "Democ the Internet: Platforms, Pipes, Possibilities," and it brought together a wond collection of people, who shared their work on the political economy of the and offered their thoughts on what should be done to improve things.

Since publishing my book last year, I've been trying to find a new way into t topics. I still agree with everything I wrote in the book, and will happily rec points from it when called upon. But I don't find the framing especially exc anymore. To keep writing about the internet, or even technology in general, the need to find new lines of approach.

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My talk at Penn represents one attempt at doing so. More specifically, it's a on a question that has been bothering me recently: How do we get from our technological present to a better technological future? The text of my talk, ' Technologies of All Dead Generations," is included below.

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too long. If you don't want your reading flow to be interrupted, you can rea on the web by clicking the title ("The technologies of all dead generations")

I'd like to talk to you today about the possibilities for creating a better techn future. But before I do, I'm going to tell you about a near-death experience I airplane.

Somewhere in the Atlantic are the Azores, and somewhere in the Azores is Airport. It sits on an island shaped like an almond, made from the merger o volcanos. The Portuguese settled the place in the 15th century. In the 20th, popular pit stop for US military aircraft transiting the Atlantic.

Late last year, I landed there on a malfunctioning Airbus A321. We were fly Lisbon to Boston. At some point, the pilot discovered the fuel tanks were br didn't land soon, he said, we would run out of gas. He pointed the plane dov and began a rapid descent. The ocean looked cold. I wondered if I would pr would have time to pray, what the words of my prayer would be.

Then the woman sitting in the row behind me said that if we crashed in the
among the things that would be lost, aside from two hundred lives, would b
Bitcoin holdings. This is because her backpack contained what's known as
wallet," a storage device that holds the cryptographic keys that confer owne
particular quantity of digital currency. And this remark—made jokingly, I t
attempt to defuse the tension that was accumulating in the minds of the pa
we each privately reflected on the prospect of swallowing salt water in the c
initiated a conversation between her and the older man seated next to her, a
conversation that continued long after we had jolted to a landing at Lajes A
the technicians had emerged from the surrounding buildings to begin fixin

He wanted to know how Bitcoin worked; she explained. Some amount of se
technical language was used; the conversation came to a halt. A moment pa
he replied that he was reading a book about how every civilization through
that went to shit did so because they had devalued their currency. The case
was Nero. That pervert had reduced the precious metal content of Roman c
order to fund increased government spending, which in turn facilitated all s

behavior—loose money, loose morals—and thus fatally weakened the empi lesson was that monetary debasement always prefigures and produces a mo abasement that eventually leads to total social collapse.

I thought this was a non sequitur, the kind of thing that certain men say bec they're not really paying attention. And the politics of it, the implicit critiqu seemed like it would rankle, because, by diction and dress, the man was cod conservative while the woman was coded as liberal.

I was wrong. The woman agreed, vigorously. And the conversation, which h advanced by fits and starts, found a deeper channel. They were friends now. *Bitcoin was pervert-proof*: no Nero could abase it because the total number of capped at 21 million, thus rendering inflation impossible—not actually, I w interject—and its "trustless" architecture made it immune to the meddling central banking and the regulatory state—again, not actually. Before long w back in the air, fuel tanks fixed. I put on my headphones to watch a movie.

I knew nothing about this woman. But it was evident that her experience w had helped imbue her with a particular politics, a politics somewhat bloodl known as libertarianism but which could more descriptively defined as a m paranoia and misanthropy, seasoned with various exotic and incorrect ideas the economy works. This politics, as the scholar David Golumbia has argue embedded into Bitcoin as a technology. It serves as the basic conceptual sul upon which the software is built. "Bitcoin activates or executes right-wing e Golumbia writes, "putting into practice what had until recently been theory

It would be reasonable to regard this phenomenon with alarm. At a time wh wing politics is distressingly popular around the world, Bitcoin offers yet an boost to the forces of reaction. But what I remember feeling on the airplane Why can't we do that, I wondered. If there are technologies that propagate s why can't we make technologies that propagate solidarity?

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The law professor Frank Pasquale says there have been two waves of resear activism around "algorithmic accountability." The first wave was about "im existing systems," while the second wave was about asking whether certain "should be used at all—and, if so, who gets to govern them." One of his exar facial recognition software. A first-waver would point out that such softwar does a bad job with faces that aren't white. A second-waver would ask, "if tl systems are often used for oppression or social stratification, should inclusi be the goal?" Why not abolish them, or at least severely restrict their use?

As distinct as these two waves are, they share something in common. Both the fact, to critique an existing technology. There is a further step that need taken, however. At some point, we need to move from critique to creation. A move just might serve as the basis for a **third wave of algorithmic accountability**, which would concern itself not with ameliorating or abolish existing systems, but with building new ones.

Importantly, the different waves don’t displace each other but, like real wav interpenetrate. Harm reduction is an important complement to abolition; a turn, can help clear the space in which alternatives may emerge. We’ve alre evidence of this dynamic in recent years, as the first two waves of algorithm accountability have helped stimulate greater interest in different forms of technological practice, particularly when it comes to the internet.

There are now a number of ongoing experiments with things like collective social media sites and worker-owned app-based services, and increased ent well-established alternative ownership models like publicly and cooperative broadband networks.

The third wave of algorithmic accountability, then, is already in motion. It's development, and one that I wholeheartedly support.

But I'm also wary of it. There is a sense of relief when one moves from critic creation. It satisfies the familiar American impulse to be practical, construc solution-oriented. And this introduces a danger, which is that in the comfo from finally *doing something* rather than just talking and writing and analyzi arguing, we get too comfortable, and act without an adequate understandin difficulties that condition and constrain our activity. For our efforts to have of success, we need that understanding. And to acquire that understanding, critique. We can't move beyond it.

Critique is how we make the map of the terrain that the creativity of the t must traverse.

This terrain is contradictory, and thus compels us to think in contradiction patient in doing so. "Progress does not take place like a 'shot out of a pistol Lee Boggs once wrote. "It requires the labor, patience, and suffering of the negative." Boggs was a Hegelian, for whom the working through of "the cor or limitations inherent in any idea" is the dialectical process whereby we ar better, more developed ideas. Here she is counseling us not to rush the nega moment of the dialectic, to sit with the contradictions rather than hurrying them.

In that spirit, let's embrace negativity and suffer together serenely, as we re question that I asked on the airplane: If there are technologies that propaga selfishness, why can't we make technologies that propagate solidarity?

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This is, in fact, the animating question of the third wave. Another way of as How can we do politics *through* technology?

First, a definition. What is politics? Let's say that politics is the set of pract through which a group of human beings arrive at a particular distribution o power. Let's say, further, that capitalism is inherently depoliticizing.

Capitalism introduces what appears to be a natural separation between the and the economic, with the latter understood to be a space of impersonal, a "market forces." This is why capitalist societies, in the words of the philoso Smith, "systematically generate an impoverished form of 'the political.'" Of politics is confined to the state, or really just a segment of the state.

One way to see the history of social movements under capitalism is as a seri struggles against the impoverishment of the political. The labor and socialis movements politicized the economy. The feminist, queer liberation, and Bla liberation movements politicized many other zones of social life, from the f the school, the household to the lunch counter.

We could place the three waves of algorithmic accountability within this lir all represent attempts to politicize technology.

But there is an important distinction to be made between the first two wave third. The first two waves make technology an object of politics, but they ge target regulatory and legislative solutions—which is to say, their interventi remain within the realm of official politics. For example, a first-waver migh that regulatory agencies submit automated systems to algorithmic audits or assessments in order to identify biases, while a second-waver might deman legislative ban on certain types or uses of software, like facial recognition o advertising.

The third wave, by contrast, not only makes technology an object of politics *terrain* of politics. It wants to do politics *through* technology. And this mean third-waver must develop an analysis of the specificities of technology as a

political struggle, in the same way that feminists had to develop an analysis specificities of the household as a site of political struggle. To do politics th technology, we need to understand how technologies do politics.

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Among those who study technology for a living, it is a commonplace that ar have politics. This is the famous formulation of the theorist Langdon Winn points out that the political qualities of a technical object—which is to say, alters the existing distribution of social power—are, at least in part, interna object itself.

One of Winner's examples is drawn from Robert A. Caro's biography of Rob

According to Caro, Moses designed the overpasses on his Long Island park
too low for buses to drive under them. He did so, Caro says, in order to prev
people, and particularly poor Black and Puerto Rican people, from getting t
Beach. Thus even a fairly unsophisticated artifact like an overpass can, simp
virtue of its dimensions, embody and enact a political project.

We could arrive at the same insight through Marx. Sometimes Marxists mal
much of the distinction between the "forces of production"—the tools and t
used to make the means of life—and the "relations of production"—the set
relationships through which the means of life are made. But, as Marx's own
makes clear, this is a false distinction. Productive forces always materialize
certain matrix of social relations, and act upon those relations in turn.

Take what is possibly the most consequential technology in human history:
engine. Its modern iteration appeared in the late eighteenth century, and co
the British cotton industry by the middle of the nineteenth. In doing so, it d
competing technology: the waterwheel.

As Andreas Malm has shown, the steam engine was not necessarily more ac
than the waterwheel. It did not produce more power at lower cost. It did pro
portable power, however, and this was the secret to the technology's success

River power could only be tapped in certain places: a waterwheel had to be
alongside a suitable stream. This presented a problem for the owners of cot
The countryside was where the streams were, but it was sparsely populated
had to be imported, trained, and housed in "colonies" near the mills. They w
unreliable and insubordinate, which stalled production and suppressed prof

The steam engine, by contrast, didn't care about geography. A steam-power
could be built anywhere. So capitalists began building them in cities, where
countryside, there were plenty of workers, many of whom were already used
long hours, monotonous work, and despotic discipline of the new industrial

They could be hired and fired as needed, without having to be housed or tra

The greater mobility of steam thus enabled the British cotton industry to de cheaper and more obedient workforce. It helped create a different kind of r between two groups of people: those who owned the mills and those who w them.

The story of the steam engine illustrates an important aspect of technologie politics. The politics of a technology is deeply involved in determining that technology's viability. Steam power stuck because its political qualities help the interests of a rising industrial capitalist class, who could use it to streng control over labor and increase profits. One could tell similar stories about number of other technologies. There are always different ways to stage and technical problem, or even to define what counts as a problem. Which sets

win out has mostly to do with how well they satisfy the compulsions of capi accumulation, and the projects of empire and racial subordination through those compulsions have historically been expressed.

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Together, these winning choices, as materialized in particular artifacts, forr technological inheritance. Marx famously observed that human beings don' history under conditions of their own choosing but, rather, under those trar from the past—that "the tradition of all dead generations weighs like a nigh the brains of the living." This is especially true when it comes to technology engineer or a designer is never working from a blank slate. They are always within conditions transmitted from the past. And this introduces a problem third wave of algorithmic accountability.

How do you take a technological inheritance that has been engineered for e racial subordination, and capital accumulation, and turn it against itself? H pursue a politics of liberation through a medium that is permeated with a p domination? If the technologies of all dead generations weigh like a nightm brain of the living, then how do we wake up from the nightmare?

A concrete example may help bring this dilemma into sharper focus. You've heard of Mastodon. It's a network of social media servers that runs on open software. It's been around for years, but has attracted more attention since Musk's takeover of Twitter. In many ways, Mastodon is the paradigmatic th project. Its creator, Eugen Rochko, has been quite explicit about his desire t version of social media that is driven by a very different set of values.

The first core value is anti-commercialism. Mastodon has no advertising—t paid, promoted, or targeted ads. (Rochko's software development work is cr and most of the Mastodon servers are volunteer-run.) Relatedly, there is no feed that sequences content in such a way as to maximize user engagement revenue. On Mastodon, the feed is reverse-chronological.

The second core value is what you might call "devolved content moderation decentralized nature of Mastodon means that content moderation is devolv server level. In some cases, this has enabled experiments in democratic moc where decisions are made collectively by the users of the server. In any case encourages Mastodon instance to moderate content more rigorously than c social media platforms. In fact, to be officially listed on the main Mastodon admins must commit to "actively moderating against racism, sexism, homo transphobia." Further, particularly egregious servers can be isolated from th the network through "de-federating." This is what happened when the fasci networking site Gab created a Mastodon instance: most of the other servers by blocking it.

But if you've used Mastodon, you also know that it looks and feels a lot like

You follow people and see their tweets—which Mastodon calls "toots"—in alongside little icons of their profile pictures. You can reply to a toot, "boos it, and "favorite" (like) it. There are DMs and threads, big accounts and littl memes and reply guys.

Mastodon, in other words, has inherited the basic grammar of social media configured by Twitter. And the question that we have to consider is to what inheritance complicates, or perhaps even obstructs, the political program th been (quite consciously) encoded into Mastodon as a technical artifact. Doe that Mastodon so closely resembles a platform whose guiding principles—maximization of user engagement in order to monetize user attention, cent opaque content moderation practices—are so antithetical to it? And if so, h precisely does it matter—what effects does it have?

I am not going to attempt to answer these questions. I suspect they are not in the abstract anyway, but can only be taken up concretely, by trying things seeing what happens.

I said before that critique is how we make the map of the terrain that the cr the third wave must traverse. It turns out to be even more deliciously dialec map is made as the terrain is traversed. Critique and creativity advance toge through experiment. Without an inkling of the contradictions that lay ahea third-waver is doomed. But without moving ahead, the third-waver never ha opportunity to experience those contradictions up close and thus learn wha challenges they may pose for her project.

This all sounds pretty daunting. It's not really what one says when you're try people to contribute to your open-source software project. I don't think the is hopeless, however. In fact, there is a measure of hope to be found here. Bu need to switch registers for a moment to retrieve it, and shift from the socia psychic.

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When we are talking about the contradictions of working within and agains technological inheritance, we are talking about the relationship between th the present. This relationship is a central concern for psychoanalysis. An in psychoanalytic insight is that people have trouble with this relationship: in they have a hard time distinguishing past and present. There is no time in t unconscious, Freud said. The clocks, in Ingmar Bergman's memorable imag hands. And this bears upon our behavior in all sorts of ways. We continuous childhood traumas as adults; we meet someone new and feel like we've kno our whole lives.

The job of the analyst is to bring this confusion to consciousness, so as to h patient identify a boundary between past and present. This is necessarily a boundary—the person remains a product of their history. But by positing a

however incomplete, with that history, one becomes a little bit freer to mov
Nothing more can happen in the past. The present affords a greater range o

You don't actually have to become a carbon copy of your parents. In fact, pe
do: the past never completely encloses the present. There is always a discon
some kind. The writer Alex Colston theorizes that this discontinuity is wha
revolutions possible. "If this separation and independence did not exist bet
and newer forms of society—or families and generations themselves—all so
reproduction would produce mimetic and homogeneous replicas," he writes
is *conditio sine qua non* for revolution and unthinkable without it." But break
whether of the psychic or the social sort, don't happen automatically. It take
turn discontinuity into disobedience.

These concepts apply equally well to technology. Our technological inherita
mediated by a degree of discontinuity. Here too, the past does not complete
the present. On the one hand, the artifacts that populate our technological p
carry a politics that has been molded by racial capitalism and its many impe
enterprises. Yet they are not comprehensively determined by those politics.
because, as Winner writes, technology "always does more than we intend."
Technological systems are unpredictable. They tend to create "a complex se
linkages that continues beyond one's original anticipation."

Winner calls it "drift": the process whereby a technology imposes requirem
own, pulling us ass-backwards along an unchosen course.

For example, the steam engine demanded an energy-dense and easily transp
fuel in the form of coal, thus initiating the hydrocarbon dependency that wo
eventually rewire the entire economy, with far-ranging ecological conseque
didn't obviate the steam engine's advantages to industrial capitalists in help
secure a lower-cost labor pool, but it did impose a new and unforeseen set o
obligations.

Sometimes, however, these obligations can actually override a technology's politics. My favorite example is the invention of the first "high-level" progr languages such as COBOL in the 1950s. One motivation for creating these l was to produce a simpler way to write code, which would in turn enable ma deskill software development in order to reduce labor costs. It didn't work, these new languages turned out to be more complex than initially thought. subsequent years, demand for programmers actually grew.

Drift is the entropy, the quantum of chaos that haunts the politics of techno at first, it may look like yet another headache for the third wave of algorithm accountability. Pity the third-waver: first she must work under the weight o technological inheritance, and now, even if she manages to inscribe an artif politics of liberation, those politics may be muddled, even undermined, by c politics through technology is hard. You have about as much control as som piloting a hot air balloon; it's hard to know exactly where you're going to la

But drift also presents the third-waver with an opportunity. Drift is the disc within our technology inheritance. And, as with our psychic and social inhe discontinuity can serve as the basis for disobedience. We can step into the c use them as points of subversion. The technological environment into whic been born does not perfectly abide by the imperatives that have formed it, a

gives us room for redirection. Both the computer and the atom bomb were i capitalist countries to defeat global fascism, but a computer can be put to m purposes than warfare. It could probably even be used to plan a socialist ec

While the past does not completely enclose the present, it is equally true th never escape the past. History is a nightmare from which I am trying to awa Stephen Dedalus in *Ulysses*. But history never ends. Earlier, I asked: If the te of all dead generations weigh like a nightmare on the brain of the living, th we wake up from the nightmare? The answer is: we can't. But we can wake the nightmare.

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Waking up inside the nightmare is called dialectics. "Dialectics is the self-consciousness of the objective context of delusion; it does not mean to have from that context," writes Adorno in *Negative Dialectics*. "Its objective goal i out of the context from within."

For Adorno, this goal can never be completely achieved. There is no exit to synthesis that Grace Lee Boggs spoke of, just the perpetual motion of dialec cognition, restlessly picking away at the "inadequacy of thought and thing." firefly in a jar: it buzzes around, trying to break out, and in doing so, illumi air around it. "It lies in the definition of negative dialectics that it will not c in itself, as if it were total," Adorno says. "This is its form of hope."

What a pain in the ass. But pain is information. There is a medical conditio congenital insensitivity to pain that makes it impossible for a person to feel very dangerous. If you don't have access to the information of pain, you can injure yourself without realizing it.

So the "suffering of the negative," as Boggs called it—the negative dialectic up inside the nightmare and probing the gaps, the contradictions—is indis

the work of creating a better technological future. Without it, you can do gr to your politics.

Not by failing, which is inevitable—failure is part of the experimental proce which a new technological politics will discover the practical forms that are to it. I have in mind a different kind of failure, the sort that comes disguisec success. Disobedience can resurrect what it rejects; the revolution can beco counterrevolution.

As the third wave of algorithmic accountability tries to build a new world ir of the old, all I'm asking is that we be mindful of the shell, that we keep fait traditions of critique that can help clarify the conditions within which our c must operate, that we cultivate some dialectical combination of humility an recklessness, and that we do our best to make something new in history wit holding on to any hope of escaping it.

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Maggie Delano Apr 18, 2023

Liked by Ben Tarnoff

Love the idea of a "third wave" and I think the concept of a dialectic is really helpful motivated. I think what is key is to stay humble and own it when you mess up, which will.

When I first delved into serious tech criticism, I felt so helpless that I wanted to quit engineer. Now I teach a course that's intentionally half seminar, half design studio, v doing exactly as you describe here. I frame design as a three step process, drawing (history), critique (the "studies") and rebuild (engineering). The process was inspire Sara Hendren, but I added context because I think effective critique needs to be gro to be really impactful. https://sarahendren.com/2020/06/30/critique-or-repair-a-cal post/

Syllabus in case anyone is interested: https://maggiedelano.notion.site/ENGR-053-F Syllabus-d3e6bc89973348f597b4add4ca2021ea

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1 reply by Ben Tarnoff

Ken Parker Apr 11, 2023

Liked by Ben Tarnoff

This is great. It reminds me of the work by David Noble, “Progress without people.”

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