

What's to  
be done?

Something

Nothing

Everything

# What's to Be Done?

Earlier this spring, I met with Zachary Kaplan to discuss the possible framework for this magazine, published on occasion of the tenth year of Seven on Seven. At first, the possibilities felt staggering, given the near-decade of 7 x 7 collaborations between engineers and artists, writers and programmers. Their experiments and provocations had given us many lasting insights into the state of our digital lives during a crucial period, in which the Internet's architecture evolved from nearly open to nearly closed.

We both kept circling back to one question: What is to be done? Everything has been said. We know all the facts. So what is to be done?

It was impressive to see how early on the 7 x 7 guest pairings would reveal problematics that are only becoming widely understood now, in 2018. Experiments in 2011 and 2012 played with self-surveillance and performance before laptop cameras. Collaborations from five years ago centered on algorithmic vision and the possibility of predictive policing. Then came big data, and surveillance capitalism. There would be less and less embarrassment about allying art practice and advocacy; in fact, digital visual culture and art made online seem like the best spaces to try out new strategic approaches, whether low-tech or high, practical or far-flung.

As I watched and re-watched the performances, themes emerged, repeated, deepened, and transformed in response to the social and political challenges of a particular year. The self in relation to others. How much agency and control we had as citizens and users. Trust — of institutions, of financial systems, of cultural brokers, of others with expression and opinions unlike one's own. The utopian promises of technology, which participants kept returning to with fond memories, or nostalgia, or bitterness and regret.

To walk us through some of these themes, we placed past participants into new pairings for new interviews. We also sought out conversation with some of the most generative thinkers and wits.

In these pages, Instagram co-founder [Mike Krieger](#) and artist [Martine Syms](#) discuss the impact of the Instagram Eye on image-making, public versus private personae, and social media's role in art practice. [Paul Chan](#) of Badlands talks with us about blockchain, publishing, contract negotiation, and freelance labor. [Miranda July](#) wrote us from the set of her new movie about her 7 x 7 performance with Paul Ford, where they toyed with audience data to make a moving narrative.

Further, [Paul Ford](#) dives into his own reflections on the experience, adding insights on the state of public trust and privacy, surveillance and self-censorship, and the mediation of vulnerability and visibility. He has also annotated his code for his 7 x 7 tool, which read the last ten thousand tweets of the audience. The result is a narrative about the elegance of data and the messiness of daily life, and how we move back and forth between the two.

We spoke to [Fred Turner](#) on the origins of the Valley fantasy of designing a world without politics and history, the dangers of positing social engineering as neutral, and the image of progress. He explained how developing platforms for more precise expression of identity syncs with market imperatives. [Tracy Chou](#) and [Kate Ray](#) carried us into the *how* of change: demanding ethical design of systems, opening access to code education, helping more women into the field of technology.

Systems are built by people, and so they can be rebuilt; models are built by people, so their ethics can be considered, refined, and made more open. Narrative and history can be refined. [Claire Evans](#) talked to us about revisionist histories, re-centering the pioneering women who developed early forms of technology, and early-era communal approaches to developing technological networks.

In the place of solitary geniuses inventing perfect consumer tools,

and better platforms for media goods, we find realistic stories, about individuals using technology to build communities and networks that distribute resources, care, and access. Throughout these conversations are gems, radiant clues to what's to be done.

We also sought out your thoughts. This magazine includes many of our readers' answers to a survey, which took shape as Mark Zuckerberg went before the House and Senate to testify on the data harvested by Cambridge Analytica. The 2014 "This Is Your Digital Life" quiz, created by researcher Aleksandr Kogan, resulted in the harvesting of millions of users' data. 270,000 people were paid to take the quiz. Another 87 million known people were affected through a loophole. The information grip helped fuel the rise of Trump, and drove Brexit to success.

As senators and congressmen fumbled through their questions about our new daily reality, I fruitlessly tried to find screenshots of the quiz. I found no images, but instead, found people like David Carroll, a professor at Parsons, suing Cambridge Analytica. What seemed far more interesting was the fact that we still take quizzes that try to figure out who we are based on our digital consumption and social media choices. That we come to these suspect surveys and apps in hopes of knowing ourselves is poignant.

The dumb online quiz has parallels to horoscopes and palmistry. We hope to map one-to-one meanings and predict our future actions. We hope our digital lives say something irrevocable, though we know reality is messier. We know our sense of time has changed. We know that we're atomized into expressive individual fiefdoms with no access to a common politics.

We wanted to give a survey that would approach taking stock of digital life now. What did we think digital technologies would do for us? What do we need from our tools? How can we address oppression and racial supremacy within a technocapitalist framework? How do we feel about being socially engineered? How do we intervene?

The answers you have given have been truly astounding in their honesty, humor, precision, and intelligence. They've expressed a range of feelings, from positive optimism, to total confusion and despair. Together, they give a portrait of our digital and offline lives.

In a final piece, *Performing the Feed*, [Paul Soulellis](#), *Rhizome's* contributing editor, asks us to consider our ongoing relationship to the feed, suggesting how we are changed by technology even as we attempt to control our relationships to it. His poetics suggest the new ways of seeing and interpretation we already have learned. Agency and control will look different in the future, as we manage our attention, our relationship to information flows, our mediation between human and non-human perception.

We can make interruptions — archiving, documenting, contextualizing, practicing active thinking and seeing. What it means to make ourselves public — a question probed by the artists, engineers, writers, and founders in many of these pages — demands constant examination. As Soulellis writes, "Artists, archivists, and activists are working to alter our perception by shifting states, interrupting the flow of information into conventional forms that defamiliarize the view and ask us to slow down, to look more closely."

*To slow down, to look more closely* — this is what we strive for in the experiments of 7 x 7.

7 x 7 x 10. These 140 participants continue to show us what to look at, and how. And you will continue to tell us what's to be done.

Enjoy,

Nora Khan — Rhizome, Special Projects Editor

## Contents:

### Chapter One: Self & Other

- Interview 1:  
Mike Krieger  
& Martine  
Syms

### Chapter Two: Trust

- Interview 2:  
Paul Chan
- Interview 3:  
Paul Ford
- Interview 3.5:  
Miranda July
- The Code  
That Talks to  
Twitter and  
Imports the  
People

### Chapter Three: Utopian Promises

- Interview 4:  
Kate Rey &  
Tracy Chou
- Interview 5:  
Fred Turner

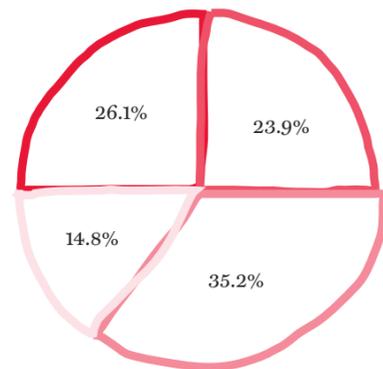
### Chapter Four: Agency & Control

- Interview 6:  
Paul Soulellis
- Interview 7:  
Claire Evans



Self & Other: Fig. 1

My narcissism has increased through my use of social media.



- Absolutely, even if I don't articulate it outright.
- No; it's decreased my self-absorption by making me more aware, connecting me directly to the daily lives of other people.
- Well, if I had a narcissistic streak, social media only concentrates and reveals it.
- Other: (e.g.) "If narcissism includes self-loathing, then yes, my narcissism has increased through my use of social media."

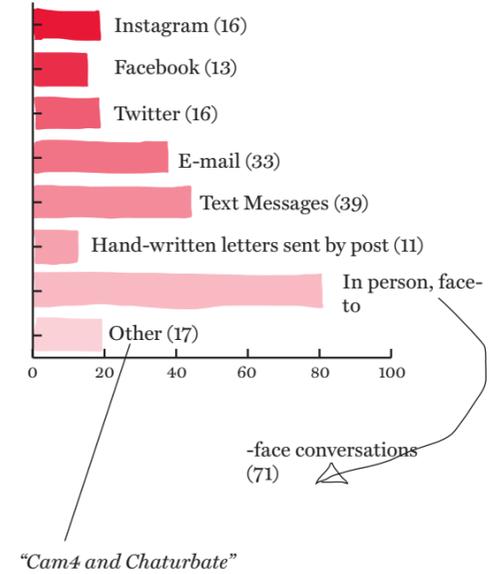
Self & Other: Q&A #1

Q: How do you feel like your understanding of the inner lives of others has been deepened through or enhanced by technology?

■ A1: "Poorly. Well, maybe not. I understand some things that some people choose to share, in a very public forum, about their inner lives in some sort of hyper-performative, sometimes confessional, often anxiety-producing format. But I am certain that everyone is more interesting, and layered, than their digital performances of self."

Self & Other: Fig. 2

I have some of my most meaningful interactions and relationships through:



■ A2: "I think technology (most notably smart phones) has helped me destroy a certain sense of mystification that had been utilized by people in power in order to create distance, fear and self-doubt. Technology has many sources within it that are very informative about fallacy and truth and the importance of being skeptical."

■ A3: "By realizing each person with an account online is a real person — and they have their own daily struggles and the way they communicate happiness or try to create a ripple of action through sharing or reposting made me really appreciate that everything is curated both consciously and unconsciously."

AA: "I honestly believe the ability to share information, democratically and without edit, has enabled me to understand better the experiences of others. Particularly relating to those who have experienced racism, sexism, homophobia, transphobia, discrimination and harassment in all its forms. I also believe social media has opened up a dialogue around and increased sympathy towards those suffering from mental illness."

# No escape

There seemed no better entry point into a dive into our digital lives than social media, the platforms we use most daily (on average), where we define ourselves largely in relation to others. How does this continuous relational existence online change our speaking, thinking, and making? We talked to Instagram founder **Mike Krieger** and artist **Martine Syms** about their feelings on social media performance, information overload (and cultivating slowness to counter it), machinic versus human seeing, and the now-pervasive "Instagram Eye." —Ed.

**Rhizome:** I thought maybe we should start by revisiting your *Seven on Sevens*. Martine, you worked with Gina Trapani. Mike, you were lucky enough to work with two artists, Trevor Paglen and Adam Harvey.

**Mike Krieger:** I cheated. I got two artists.

**R:** Yes, yes. Your project was an investigation of machine learning and how machine learning systems see images, and what information they gather in their statistic appraisal of images. This was really a fascinating presentation. It's gone on to inform a lot of things in Trevor's practice.

Martine, your project, in retrospect, engages with questions of AI tangentially, in the sense that it taps into the kinds of quizzes that people answer online all the time in order to verify their identity, or prove they are a human, and not a bot. Your project explored the affective dimension of these kinds of quizzes, and how they can be emotionally laden for users.

I am interested in the fact that the projects are complementary, in a sense, in that one is an exploration of AI systems from the perspec-

tive of mechanic systems, and the other is looking at the human experience of engaging with them. That relationship between the traditional categories of the machine and the human was a defining aspect, I think, of the 2015 edition of *Seven on Seven*, which you both participated in.

**Martine Syms:** I can speak to that a bit because I often use the phrase "Instagram Eye" in talking about my work. I'm talking about an idea of the cyborg now, in the sense that technology is always shaping us, from a kind of constructivist, film perspective. We start to see the framing of the image. That's one kind of way that technology is influencing your vision and your body.

I feel like it's an easy analogy to make when I describe it to people. The "Instagram Eye" — you know it when you see the square, and you are kind of looking around. You're making that composition or you're making that crop. It is not a camera, but it is influential enough to kind of become a kind of way of seeing.

And the *Seven on Seven* presentation that Mike, Trevor, and Adam did, I was really

inspired by that. I think a lot about imaging and image technology. My work comes from a film state, but I am thinking about that really broadly. I am thinking about how I always use a bunch of different cameras from different time periods. I'm really interested in how you can look at a photo and know when it is from. With digital images, the timestamp is even more pronounced from like high-8 to first iPhone to one now. Could it be that the timestamp is even more pronounced with such a visible change in image quality between the first iPhone and the ones we have now?

It was just interesting to me to see it from a machine perspective, because I had only imagined it. I didn't know a lot about it, but that was very influential to me, and kind of moving.

**MK:** I think what's interesting, too, is some of the project I did with Trevor was this idea of metadata and language and image — how images are described.

It's funny that you mention when a photo was taken. When you think about old — not even old, but the '90s — every camera by default would basically burn the date into the

corner. People would write on the back for some extra context. I think we're at the point now where images have both implicit metadata in terms of the locations attached, but they also have the commentary and social context around that. You can't understand them independently of each other.

Something will mean so much more, given the caption or given the reactions. Or, the comment will totally change the meaning of the image. Or, a comment may seem obscure, at the time, and then a year later, you look back and you can think, "Oh, that's what that person was talking about." That intersection of time and imagery, I think, is super interesting and I think it is still being developed.

For us, we're at this point now on Instagram where a ton of the images go away after a day. What does that mean for our collective memory? I used to talk about Instagram within the frame of the future, when we will be this repository for human experience. That is less and less true as we get more and more ephemeral.

**R:** That is a really interesting question there, of how the ephemerality is shaping our relationship with these images. I always have thought of Instagram as having won the picture-taking game by lowering the cost of participation. It feels more easy to share, like a snapshot. At a certain point, though, the cost of participation for permanent posts seems like it crept back up again; nothing on the internet can ever feel casual now unless it's designed to disappear.

**MK:** What Martine talked about in terms of that, like Instagram, really resonates with what happened early on: we gave people this constraint. It's square, it's this many pixels, and you upload it this way. That ended up creating a template for people to then view the world with.

I remember early on, I'd walk around and think, "Ah, that is an Instagram photo, I should take it," which I hadn't ever experienced before. I think some people have that because they are practicing art. Or they're just dedicated photographers. I would hear from people early on, saying, "Oh, it changed the way I look at the world." To me, that is the biggest compliment we ever got on Instagram. That's not a light statement. It comes to your point about the ease of taking, the lowering of the bar. It was around creating this repeatable template. Of course, when you take it to the extreme, you end up getting more of what is cliché. Like, "Oh God, not another food photo." The same thing, over and over again. It feels that way because each person is kind of filling

AA5: "In rare genuine moments (or moments I perceived to be genuine), I have felt deeply, emotionally connected to people I have never met in person."

in their template with their experience. It turns out most people's experience is fairly similar in some way.

**MS:** If I'm somewhere where it's very picturesque, it just feels weird to me to take a photo of it. I never really take pictures like that. I just know I'm going, "This is my sunset photo," whereas there's thousands of other sunset photos. I think that variation and difference — and what you were saying, Mike, about this kind of cataloging of human experience versus what it is cataloging — is intriguing to me. The question becomes, "Okay, what is that template, or what does that become about," for the average person who's not a photographer, in the sense that they have not been thinking about composition for many years.

But now there's this framework that they're operating within, that starts to be a kind of common theme or frame for thinking about what's going on in the culture. That, to me, is the place. For my recent show at MoMA, I made this AR app which augmented the works (*ED. WYD RN for iPhone, created by Syms and Special--Offer*). One of the techs was kind of complaining, saying, "Oh, great, another reason for people to be on their phones."

And I was kind of like, "Well, dude, people are already on their phone."

I'm just interested in making an artwork that speaks to that phenomenon. If you go to any museum anywhere or most places, it's already something we're doing, looking at our phones. That's what I've been thinking about with my work lately. That is what I'm observing, what that act is saying about cultures. I think, "What are these repeat images, of what?" They do kind of fit into a paradigm. I've been looking at that a lot.

**MK:** That's so interesting. You can't escape people on their phones. It's everything, from taking photos of the art at MoMA, which I love seeing, too; it's their personal snapshot, I guess. At least they mostly ban selfie-sticks at museums. Although, I was at this museum in Mexico City, and there was a lady with a selfie stick, just walking around and taking a photo of herself in front of every single piece of art. Like, "Okay, I guess that's how you remember things." But that's fairly disruptive to other people as well.

It's been fascinating to me to see how you can actually channel that phone usage. People are going to be into it for good. I think MoMA did a pretty good job, there. They have these more intelligent — and by intelligent, I just mean that the app is smarter — guides, which react to where you are and then usher you through. "Now, you should walk upstairs." It knows when you've gotten to a destination, and which object you've started to approach.

**R:** I think the idea of a cultural template, you brought up, Martine, or a paradigm. Did you say prototype? What was the word you just used?

**MS:** Paradigm.

**R:** Paradigm, that's the word. That relates to this question of how people's attention is being organized in exhibition spaces and in the world. The "Instagram Eye" has shifted. The photo now becomes an opportunity to write captions and scribble and introduce artwork within the screen in a new way, within the app. That represents a kind of merging of the experience you were trained to capture and the digital worlds, together. This applies to culture at large, not just Instagram.

Could we think about that shift and look ahead to where this conversation is going? What are the paradigms of now and on into the future? Have you begun to use Instagram more differently, more recently, where you customize images more? Or are you not part of that cultural paradigm shift?

**MS:** Confession, I'm not on Instagram. It stresses me out. I'm too anxious to be on Instagram. I was on it, though, so I could speak to that part of it, and I was back on it for a little while. It's just a little too much information for me, personally, about other people. I don't like knowing that much about people.

**MK:** It's really funny. Artists on Instagram is a super interesting intersection. There's a lot who aren't on, and I'll meet them and they're like, no. Or they'll have a secret account, and they're not really public about it.

**MS:** Yeah, that's what I had.

**MK:** I find it pretty fascinating to see. I was thinking about my favorite artist accounts. They are the ones who are less about their own art, and more about the art that they love, and the things they see out in the world.

I was thinking about this, Martine. I saw a photo of your MoMA show on B. Ingrid Olson's Instagram, and I thought, "Oh, this is cool, that's what she's looking at." Her account was not much about her own work. It's all about what she's going out and seeing, so that's an interesting use case. It's like this intersection of art plus Instagram Eye. "How do artists see art from other artists?" That was not a thing that existed, I think, in the world before, other than in long-form art reviews.

**MS:** Yeah, definitely. Maybe part of my struggle with it was even when I thought, “Okay, I’m just gonna make like this chill, private account,” I then started to create this whole elaborate setup and make these videos that were looping seamlessly. It was very difficult for me to do it casually. I would always want it to be sort of funny or fun or weird. I’d be like, “Okay, I’m gonna be in this weird place and then I know this person’s gonna pass and I’ll be like timing them out,” and I was just like, “This is crazy. Why am I thinking about this so much?”

But I think because we work so much, at least I work so much with my own persona and am using a lot of things from that, it’s just hard for me to just say, “Here’s a cool thing I saw.” Though I do take tons of photos any time I’m in a museum.

**R:** *It’s interesting that you feel you want to differentiate yourself from the maddening crowd. I admire the more proletarian approach to using social media — recording your experience, even though you’re aware that it’s basically the same as other people’s. It’s very revealing, that you are, like myself, anxious about self-differentiation.*

**MS:** Yeah. I want to be special, you know?

**R:** *That relates to the feeling about being an artist, because I think in general, the stereotype of the artist is that we have to be a really different creative genius. There’s also people that have embraced the idea of being similar as a position. In some ways, in your practice, you do things that are merging with the everyday, that don’t seem like they’re anxious about self-differentiating.*

**MS:** I’m interested in that tangent, of wanting to be part of the group and not. I feel like it’s just a classic theme. I really like working with those kind of stories, and narratives, and I think that is one that’s really present.

Right now, just in the larger sense of image-making, I ask, “Why take photos of anything?” We can Google it. But then I know there’s tons of stuff, events, that I can’t find photos of. I’m very interested in this kind of orphan media, a term some scholars use. Like amateur films, photography, or things that you find at flea markets, films like that. They are nonprofessional, especially because the average level of image production is just so high.

I think like back lighting, for example. Even 10 years ago, not everybody knew what back lighting was. Even now, even if some-

## Imagining Instagram feeds from artists like in art history, posting their process, and getting feedback live. Like imagine the Sistine Chapel, painted live. “Hey, just showed up, just getting started,” and people are like, “Whoa, it’s gonna be great!”

one doesn’t know that term, they know that they want the light to go towards their face for a better image. That kind of transitioned in the quality and the production and what that means. That goes back to what you were saying about this relationship between time and image. How did you even differentiate? Does that become a concern? I wouldn’t say it’s my number one concern, but personally, it’s hard for me to just be on any digital thing without customizing. I’m a real customizer, you know?

I used to work at this company, and we were working on an app. Everyone would say, “No one changes the default settings.” Somebody from tech had brought this up to me. I wanted to add all these things. They were like, “90% of the people don’t change from the default settings.” I was so bewildered by that fact. The second I get a new computer, the second I get a phone, I am changing every single setting on it to be exactly how I want to use it.

**R:** *Mike, I know that you’re an art enthusiast and collector. Could you approach a similar question from your point of view? When you go to an art exhibition or when you’re thinking about which artists you like, I’m sure that must be informed by the experience you’ve had of Instagram, by the experience of putting all of these image-making tools in people’s hands.*

**MK:** That is true, especially when I started thinking about collecting. I almost aggressively moved away from anything that could have been on Instagram. To me, maybe the classic is Richard Prince, who did a whole series of Instagram screenshots. They asked, “Hey, do you want this?” I’m like, “No, I live this every day. I want this to be an excuse to think about something else, not something similar.”

Collecting has mostly been a sort of departure from what I’m doing every day. Obviously, there are some interesting intersection points emerging, because of the artists I’ll end up following, the artists that I meet who are on Instagram. It’s always fun to see their world. I’d say the majority of what I’ve seen and heard is actually more from talking to people in the broader art world about how much Instagram has changed their business, for better or for worse. They’ll tell me, “I’ve put photos up on Instagram, as we’re hanging the show, and I get 10 direct messages wanting to buy,” which is pretty crazy, and probably not good. I mean, it is probably good for their business, but probably not good for this almost normative effect, where what looks good on social media runs against what will actually be great in person.

One of the quickest things you learn when you’re thinking about collecting art is if you try to judge from the JPEG, right, or the Instagram photo, you’re going to be really disappointed. It just doesn’t capture what it’s like to actually be there with something, especially if it’s more complex.

Two things. One, I enjoy looking at stuff that’s really different from anything that’s on Instagram or what would be on Instagram. Two, I think it’s fun, having your feet in both worlds, just to hear about how much people are thinking about Instagram and how they are collecting. I meet people who say they routinely get confused about which shows they’ve been to and not, because they don’t remember if they saw it or they saw it on Instagram. That again is a little scary, but people experience it. “Yeah, I saw that. Oh, no, someone sent it to me. Someone was there and on Instagram and I saw enough of it where I felt like I was basically there.”

**R:** *Martine, do you worry about people seeing your exhibitions only in the documentation, and not in the original?*

**MS:** No, because I try to think about these different ways the show will be seen in general. Again, I go back to that expanded cinema of perspective. I’m thinking about these different views that they’ll have, and I’m really interested in the sight line and the

way an image will collapse. So, you’ll have one experience and then you’re walking around it, but you’ll have another kind of visual read.

My only peeve is that I don’t like when people post personal images. When people are in my studio or in my house, I ask, please don’t post anything, because I just need to feel really like my studio isn’t public. It is a private space. Mike, you’re talking about the way it’s changed the business. A lot of people will tell me that it’s crazy that I’m not on Instagram, because of the collectors who would then want to buy. What I learned at Seven on Seven is that I need time for processing. I’m slow. I need time to marinate on things, so I just like the opportunity to be able to slow it down without people around, responding. That’s what I mean about too much information about other people. I don’t necessarily want the feedback, even if it’s positive. I just like to let something live for a minute.

**MK:** I’m imagining this amazing art project around like, imagining Instagram feeds from artists like in art history, posting their process, and getting feedback live. Like imagine the Sistine Chapel, painted live. “Hey, just showed up, just getting started,” and people are like, “Whoa, it’s gonna be great!”

**MS:** I love that.

**MK:** There’s this sense of isolation in that moment.

**MS:** *“I just changed the fingers!”*

It’s too much for me, it’s too much. Some people, that’s a part of the way they work. I would probably say that was something I learned at Seven on Seven. I felt when I was invited, “Oh yeah, I can come up with a good idea in a weekend,” and at the end of it, I was like, “I absolutely cannot and don’t ever want to try to again.” I was so stressed out.

**R:** *We moved away that time limit in the projects. I think it worked well for you, Mike, in a way, because you had that focused time with Trevor.*

**MK:** It was funny, because with mine, it was like, “How much can I learn about neural networks in 24 hours, and how do you get something that’s visual, done.” I think one thing I really appreciated about working with Trevor is that he cares so much about how good the final product could actually be, something that’s aesthetically interesting. I don’t think it’s necessarily unique to him, but it was definitely different for me.

**MS:** Yeah, I just took over all visual elements. Like, “Gina? Look. The deliverables, the pre-

sentation? I’m really good at that. Just tell me what we’re doing. Like, I’m gonna lay it out.” I really moved into like a very designer-like deadline mode: “Okay, tell me? What else? Give me that thing. Okay.” With Gina, it was fun, but I did learn from it. I just need more time, I think. Good lesson to learn.

**R:** *I mean, the way that you’re talking about time in relation to images, it does sort of feel like that is in itself and interesting position to like. You’re not a person that I think of as anti-social media, even though I did realize you weren’t on Instagram. You’re not anti-technology either, Martine. But that idea of slowness seems like it runs counter to the way that all of these platforms seem to move, as they gather users. It becomes more and more information for people to keep up with.*

*I was thinking back to a story that you wrote for Rhizome about a woman that wakes up, and she’s wearing her Fitbit. It was about living your life with different modifications, organizing your time, which in a way is something we can think of as like really dystopian and bad. It was always sort of unclear in the story whether it was that bad, because this person sort of seemed fine.*

**MS:** Yeah, absolutely. And I was really influenced by working with Barbara Kasten. I was like 24, maybe. Maybe younger than that, 23. I started working with her and I was really involved. I mean I always have been pretty present online, this is probably the least present I have been through my life. I had a blog and posted everything I was doing immediately. I’ve felt a bit alienated from what I originally thought of as a real home for myself.

Working with Barbara, I just remember she was shooting in a large format, and she has these constructions that she’s making in her studio that are almost like these sets, and the way that she would work is she might spend all day just rearranging the set and then taking small Polaroids to get a sense of what it was, or 4 x 5’s, and then take one 8 x 10 Polaroid over the week and then kind of sit with it for a while, or sit with these kinds of 4 x 5’s and decide to change stuff.

I remember setting her up for a studio visit within the first month that we were working together, and she asked me to hide a bunch of stuff, basically. All this work that had been up. And I was like, “Oh, you’re not gonna show that to the person? And she was just like, “No way.” The way that she was like, “Are you crazy?” I was like, “Oh, you really just keep this image to yourself for maybe six months.”

I worked with her for a couple of years and that process, the way that she made images, it opened up a lot for me. Even though

there was sort of this era of photo blogs that I was definitely a part of, I was just so used to, *You shoot something, you put it up, you shoot it, you put it up.*

After that, it made me rethink about the way that I was making images. I’m always on the computer, basically. I’m not a Luddite, by any means, but I don’t like notifications. I just found that they really distract me, so I turn all my notifications off for everything. I’ll just be in Do Not Disturb mode. Because I want to check, like everybody else. **I’ll hear the ding or I’ll see the dot, and I’ll want to check.**

**MK:** I am the same way. I just went through and literally every notification, almost every single thing. The other thing is like the red badge of death, like, “I gotta check this thing.” I’m like, “No, off.” Especially like stuff that will badger you, you’re like, “Why? I don’t need to open you again. I’ll open you when I need you.” When I think about tech in our lives, I think that greater control over its print, but the interaction model is, for sure, going to be one of the more interesting conversations over the next couple of years.

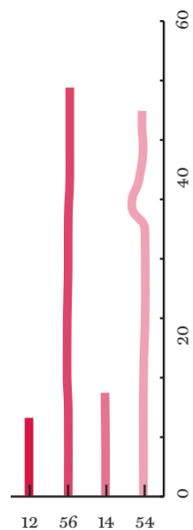
**MS:** Yeah, I’m interested in my own, and others’ relationships to technology. Here I can lean into this AI thing. It is a relationship. It is not the same relationship that you might have with a person, but I have a relationship to my computer. I talk to it, I touch it, I think about it. If it seems like a precarious situation or somebody’s about to spill something, I feel panic or a tear. What I wanted to do with that *Rhizome* story was think about that relationship, how it generates mixed feelings. Sometimes it feels good, sometimes it doesn’t. But I feel like that’s most things. I have mixed feelings about a lot of things. END



*wyd rn* app still courtesy Martine Syms and Special---Offer

Self & Other: Fig. 3

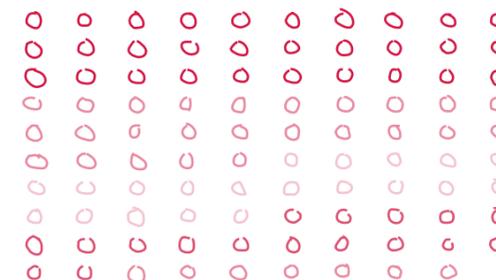
What would your life be without social media?



- It would be more meaningful, on the average.
- It would be more within my control.
- It would definitely be more quiet and focused.
- It would lack crucial access to information, resources, and connections that I could not form otherwise.

Self & Other: Fig. 4

Day to day, I frequently think about people who have no access to the internet.



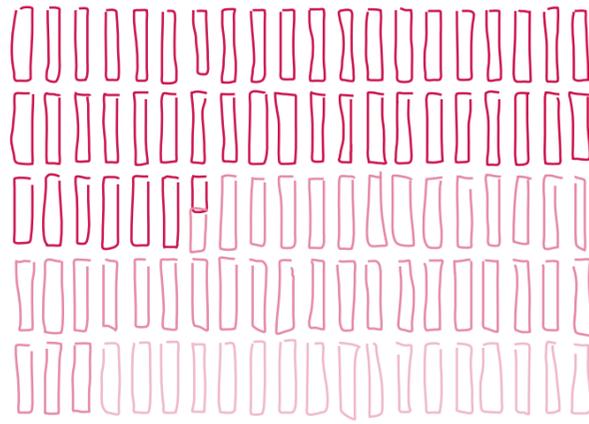
- 34.1% I think about people without access to the internet with some frequency. The differences between the quality of our lives are staggering.
- 25% This is mostly untrue. I rarely, if ever, think about people who aren't online
- 21.6% This question is shaming me for my privileges, also shared by the survey writer.
- 17% I am too locked into the affordances of digital life, along with everyone else, to think about people with out access.
- 2.3% I work actively with people without internet access, but do not feel internet access will improve their lives.

Self & Other: Q&A #2  
 Q: How would you define your relationship to the internet? Essential, like water or air? As something tolerated, but barely? Or not as a relationship at all?

■ AI: "essential!!!!!! who the FUCK has the time or energy to interact face-to-face within their social circles under late capitalism? the "purity" and supposed "depreciation" of face-to-face relationalities is some 1%, "depreciation" of face-to-face relationalities is some 1%, neurotypical garbage -- like, which fckn rich ass sane binch read Benjamin once n thought "ok the internet is evil, i need more aura in my LIEf, n so does everyone else." fuck right off [not y'all, specifically, just ppl who hate on "millenials" for being "too connected" etc]"

Self & Other: Fig. 6

Can a successful counter to the alt-right be waged online?



- 17.4% Yes. A left that will be successful will be very versed in trolling and extremely online.
- 36% No. This war is best fought through laws and on the ground, through education and community-building.
- 46.5% Maybe. Only thoughtful and engaged debate, both online and off, and concerted movement out of one's filter bubbles, offer any hope for countering trolls.

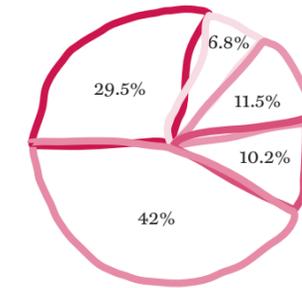
■ A4: "A false limb."

■ A3: "An at least sometimes entertaining prison library."

■ A2: "It's difficult to define. I really believe the access to information I have has made me more empathetic, more questioning of authority, better educated, less ignorant, more likely to look outside my own experience. It makes me more creative and good at my job. But the amount of content I consume makes me anxious, it makes me feel always like I've forgotten something. Like I'm struggling to remember something, like I have a never ending to-do list. Huge swathes of my time are wasted online, but upon reflection - are they wasted if I'm learning? I'm undecided, but somewhat resentful."

Self & Other: Fig. 7

No matter how subtle or evocative an interaction online or through the digital, nothing can ever replace face-to-face understanding.

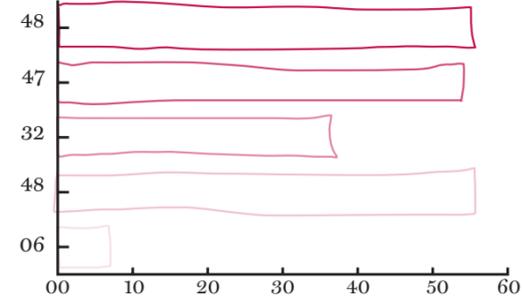


- It's true. Everything done digitally is a distortion, amplification of what can be achieved and communicated in person.
- They aren't comparable experiences and one isn't really meant to replace the other.
- The false dualism implied denies what language can do. People form deep, important relationships through conversation without ever having met one another. Who are we to say which is more significant to another person?
- I feel people do overly rely on their digital interactions when talking in person would work better.
- Other: "Everything is mediated there is no real, really. Trying to judge what is more or less mediated is like saying you're more or less pregnant..."

■ A5: "Something once deeply important and essential to my understanding of self, now less-so. Tolerated, necessary, but perhaps not essential, a media utility like cable news or the yellow pages than anything comparable to water or air."

Trust: Fig. 1

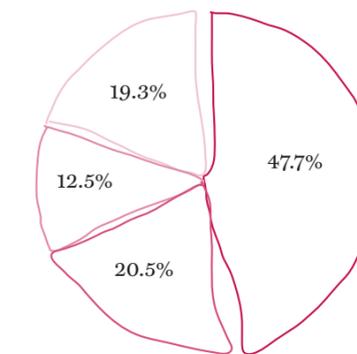
I don't really trust centralized social media platforms but still use them because of:



- Convenience.
- Knowledge of events in my area.
- Laziness.
- The fact that we're all in the same boat until a better alternative is invented.
- The likelihood that activists will figure a solution out.

Trust: Fig. 2

The time that we spend online is work. We do a huge amount of unrecognized and unpaid labor on platforms, including social media. This is a pressing issue to address and solve.



- No. I don't believe that talking and creating content online are really "labor." Besides, people are doing real unpaid labor offline, that we should focus on.
- Yes; I see this online work as necessary to my survival. I am willing to do it if it increases my social capital, which I need to survive in a hostile system.
- The business model of a platform is to encourage free labor, cognitive, emotional, and more. That labor should be paid for.
- More accessible and ethical design will better reveal how we do cognitive labor online, and make that labor easier to charge for.

# Trustless

Interview ii --- PAUL CHAN  
Conducted by Lauren Studebaker,  
Community Manager, Rhizome

Paul Chan is an artist, writer, and publisher working in New York. He is the founder of Badlands Unlimited, an independent publishing venture focused on “making books in an expanded field,” with a focus on artist’s texts, eBooks, and digital artworks. In 2017, Badlands formed a Crypto Group led by Chan, Paul Pham, Meredith Finkelstein, and Miriam Katzeff.

**Rhizome:** How did Badlands Unlimited become interested in cryptocurrency?

**Paul Chan:** Badlands has been in crypto since 2011. We were, I believe, the first art book publisher to accept crypto for payment at the New York Art Book Fair. There’s an interview Sarah Hromack did with me on Rhizome, funny enough, where I talked about Bitcoin being a potential vector for how independent people and artisan writers can leverage what they do. Back then, there were no exchanges – no Kraken, no Coinbase, no Bitfinex. To be involved in crypto, you had to send a certified check to a PO Box in Virginia and write your public address on a piece of paper. They wouldn’t even accept it printed.

Since 2011, we’ve been offering crypto as a form of payment for our books and artworks. One person asked us about it then. It wasn’t until last year, 2017, that people brought it up again. And this was probably because crypto made headlines throughout 2017.

**R:** How did the Badlands Crypto Group come together?

**PC:** It started last year, because of the interest in crypto. Last year was really the mainstreaming for crypto and Bitcoin. And because of that, we decided to start a crypto group with friends and allies in independent publishing who either had experience with crypto or were interested in it. We would meet on a very informal basis here [at the Badlands offices], and then last fall we started doing presentations for artists and writers to give them a general primer for what we understand crypto to be. Its social history. Its technical history. Both the practical concerns of crypto — how to get it, how to secure it, what are the risks of crypto as a financial instrument — as well as crypto as a potential field of endeavor.

**R:** You mentioned a “fear of technology.” Do you think there’s a general fear of developing tech in independent publishing that Badlands has transcended?

**PC:** I think technology in general is a little scary. The speed of change is daunting and can feel very inhuman. And whenever you

YES CRYPTOCURRENCY  
FEAR INHUMAN

I think technology in general is a little scary. The speed of change is daunting and can feel very inhuman

couple technology with money, it’s doubly scary. And so I don’t blame anyone for being afraid of crypto. Frankly we *should* be a little afraid of crypto. On the other hand, I think I’m lucky to be working at Badlands with people like Micaela Durand and Parker Bruce. We may not be programmers, but we’re not afraid of technology. We started publishing as an eBook publisher. I think crypto is just an extension of what we would naturally be interested in.

**R:** In the *Badlands’ Money Dies, Crypto Lives* pamphlet you discuss the blockchain as a form of automatic writing. Could you expand on that?

**PC:** There are many ways to talk about the blockchain. A lot of the talk is incredibly opaque, perhaps intentionally so. As publishers we think of the blockchain as a form of publishing. The very basic idea of publishing is to make something public. One of the innovations of what people call the blockchain is that it is a ledger that records every transaction that’s ever taken place in Bitcoin. And anyone can look at this ledger. It is open and distributed as part of the Bitcoin ecosystem. And its transparency and openness is, to us, a form of publishing. And so if you believe that, then the transactions that take place — that gets recorded on the blockchain — can be considered a form of automatic writing.

If I were to send you X amount of Bitcoin, and if it’s a legitimate transaction, and it gets recorded by miners (*ED. individual computers comprising the decentralized network maintaining the blockchain*), and written on a block which then becomes part of the blockchain, our transaction is recorded for the entire duration of Bitcoin as a technology. If we’re still around, say seven years from now, we could look up our transactions. Anyone could look them up.

**R:** And then that kind of creates a system of trust, through having these public records available, right?

**PC:** The ironic thing is that it creates trust because it is trustless. Another great innovation of Bitcoin and how it uses blockchain is

Fig ii

Image reproduction pricing guidelines for artists  
All prices are suggestions and are in USD. For informational purposes only.

| INDIVIDUAL OR SMALL PRESS   |   |   |   | MUSEUMS AND GALLERIES                                   |   |   |   |
|---|---|---|---|---|---|---|---|
| Print run   | Print run   | Print run   | Print run   | Print run   | Print run   | Print run   | Print run   |
| 100 or less   | 100 - 1,000   | 1,000 - 5,000   | 5,000 or more   | 500 or less   | 500 - 1,000   | 1,000 - 5,000   | 5,000 or more   |
| Interior \$ 75  | Interior \$ 125   | Interior \$ 175   | Interior \$ 200   | Interior \$ 75  | Interior \$ 125   | Interior \$ 175   | Interior \$ 200   |
| Cover / Spread \$ 115   | Cover / Spread \$ 165                                   | Cover / Spread \$ 215                                   | Cover / Spread \$ 250                                   | Cover / Spread \$ 110                                   | Cover / Spread \$ 160                                   | Cover / Spread \$ 210                                   | Cover / Spread \$ 250                                   |
| Each accompanying use in print or digital format \$ 100   | Each accompanying use in print or digital format \$ 150 | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 250 | Each accompanying use in print or digital format \$ 100 | Each accompanying use in print or digital format \$ 150 | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 250 |
| <b>NON-PROFIT, SCHOLARLY, OR INDEPENDENT ORGANIZATIONS</b><br>Including, but not limited to: scholarly books and journals, exhibition catalogs, conference proceedings, dissertations, etc. |   |   |   | <b>RELIGIOUS, CULT, OR POLITICAL GROUPS</b>             |   |   |   |
| Individual Small Press \$ 75  | Non-Profit Scholarly/Independent \$ 75                  | Non-Profit Scholarly/Independent \$ 115                 | Non-Profit Scholarly/Independent \$ 165                 | Churches/Think tanks \$ 75                              | Churches/Think tanks \$ 115                             | Churches/Think tanks \$ 165                             | Churches/Think tanks \$ 200                             |
| <b>FOR-PROFIT EDUCATIONAL PUBLICATIONS</b><br>Including, but not limited to: textbooks, educational catalogs  |   |   |   | <b>ONLINE ONLY (No print edition)</b>                   |   |   |   |
| Individual Small Press \$ 5   | Individual Small Press \$ 5                             | Individual Small Press \$ 5                             | Individual Small Press \$ 5                             | Individual Small Press \$ 5                             | Individual Small Press \$ 5                             | Individual Small Press \$ 5                             | Individual Small Press \$ 5                             |
| <b>FOR-PROFIT COMMERCIAL, AND CORPORATE</b>   |   |   |   | <b>FREAKS</b>   |   |   |   |
| Individual Small Press \$ 125   | Individual Small Press \$ 125                           | Individual Small Press \$ 125                           | Individual Small Press \$ 125                           | Individual Small Press \$ 125                           | Individual Small Press \$ 125                           | Individual Small Press \$ 125                           | Individual Small Press \$ 125                           |
| Cover / Spread \$ 200   | Cover / Spread \$ 200                                   | Cover / Spread \$ 200                                   | Cover / Spread \$ 200                                   | Cover / Spread \$ 200                                   | Cover / Spread \$ 200                                   | Cover / Spread \$ 200                                   | Cover / Spread \$ 200                                   |
| Each accompanying use in print or digital format \$ 200   | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 200 | Each accompanying use in print or digital format \$ 200 |

FREAKS  
Individual/Small Press  
Free

that it is decentralized and trustless. Trustless means Bitcoin does not rely on a third party, like a bank, to keep track of its transactions. The ledger, or blockchain, is continually and systematically updated and is transparent and open for anyone to see. One does not have to trust in a third party to check the integrity of the transaction history. In fact, Bitcoin’s value is created as a result of the system incentivizing participants to continually maintain and protect the integrity of the blockchain as a peer-to-peer decentralized digital cash system.

**R:** But there is a need for accessibility. Like you said, the blockchain can be opaque, and it’s difficult for many who aren’t in tech or in finance to understand. Do you have concern about lack of diversity in the space? Is that something that the Badlands Crypto Group is trying to address through blockchain education?

**PC:** There’s a certain culture around blockchain, right? It leans toward a particular gender, a particular socioeconomic class. And I think with the Crypto Group we’re simply looking to get more artists and writers and

The way to protect yourself is to be involved in it. Institutional banking is doing two things at once: they are demonizing crypto and Bit-

coin in particular, and at the same time developing their capacity to trade it, to speculate on it, and to use it for their interest.

17  
Trust

Image Permissions and Rights by Badlands Unlimited in 2017. Image reproduction guidelines for artists.

independent people working in that culture. Diversity is very important to us. Just look at the roster of artists and writers we work with at Badlands. If there was more diversity in crypto in 2009, we’d have seen a different culture develop. But it’s not too late. It’s still very early.

**R:** But there are now larger institutions involved; for example, Goldman Sachs has a department dedicated to crypto technologies. How do independent traders and investors or independent publishers working with blockchain and Bitcoin protect themselves?

**PC:** The way to protect yourself is to be involved in it. Institutional banking is doing two things at once: they are demonizing crypto and Bitcoin in particular, and at the same time developing their capacity to trade it, to speculate on it, and to use it for their interest. They’re shorting it and longing it at the same time. But fundamentally — and I’m talking about Bitcoin only, which is still fundamentally decentralized — there’s no core, there’s no central developer, or central group of developers. It is still a volunteer development effort, and the many-pronged quality of Bitcoin is still largely decentralized. So our capacity to diversify may involve simply getting different kinds of people to be a part of it. Education is one element — talking to people about our experience with crypto and what we see as its potential for independent artists and writers, and what the risks are, so that even if they don’t program for Bitcoin, even if they don’t buy Bitcoin, they can at least be vigilant about what it is and maybe more importantly, what it is not. Already you hear people saying [Bitcoin] is everything, and that’s almost always a scam. The most prudent thing to do may be not to program, not to buy, but to just educate yourself enough to tell what is a scam and what isn’t.

**R:** I’m now thinking about potential risks with a vastly larger userbase: energy consumption of miners; instability that could occur with complete divestment from

16  
Trust

banks, or government intervention.

PC: There's also the risk that people only see Bitcoin as a vehicle for financial speculation. People are most interested in [crypto because of this] as we're living in a very precarious time. People are interested to know whether or not they can get ahead economically. Because economically it's pretty bleak. Wages have been stagnant or declining since the 1990s. It doesn't seem to be getting any better. No one feels like they have a good economic footing. Still, to imagine that Bitcoin, in particular, and crypto, in general, are solutions to that economic precarity is incredibly risky.

R: *If not for investing, how would you suggest that publishers, artists, writers, and independent users use blockchain?*

PC: The first step is to educate oneself: learn what the blockchain is, what it can do, and what it cannot do. For those who are not afraid of the tech, they should explore how potential programming layers on top of the blockchain, such as "smart contracts," that can help secure, legitimize, and automate agreements and transactions, can work, and contribute to it. With the right kind of development and vision, Bitcoin and other cryptos can be leveraged to create something like a new form of collective bargaining.

R: *That reminds me of the "Instant Worth" calculator that Badlands released last year that used an image rights calculator as a way of representing or invoicing for unpaid digital labor. Do you think that what you just explained, with smart contracts on the blockchain, can be a solution to the problem of uncompensated labor?*

PC: We never talk about Bitcoin or crypto as a solution of *any* kind. If anyone talks about it as a solution for anything, it's most likely a scam. We talk about it as a form of leverage, where it can give independent writers and artists a new form of leverage for their artistic and economic life. With freelancers, our experience is that up to 80% of their life is chasing down invoices. You do the labor, you write that article, you send it in, and then you have to chase the invoice. Sometimes for a week, sometimes for months, and sometimes you never get paid.

Now, with the programming layer

ENTERTAINMENT WEEKLY **PATTI CHAN**

*Image reproduction pricing guidelines for artists. All prices are suggestions and are in USD. For informational purposes only.*

| INDIVIDUAL OR SMALL PRESS   |   |   |   | MUSEUMS AND GALLERIES                                   |   |   |   |
|---|---|---|---|---|---|---|---|
| Including but not limited to: retailers or organizations whose yearly revenue does not exceed \$10M.                          |   |   |   | Print run: 500 or less                                  |   |   |   |
| Print run   | Print run   | Print run   | Print run   | Individual  | Non-Profit  | Corporate   | Museum  |
| 1000 or less  | 1000-10000  | 10000-50000   | 50000 or more   | Individual  | Non-Profit  | Corporate   | Museum  |
| \$ 15   | \$ 50   | \$ 75   | \$ 100  | \$ 75   | \$ 125  | \$ 175  | \$ 200  |
| Each accompanying use in print or digital format = \$10   | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 |
| NON-PROFIT, SCHOLARLY, OR INDEPENDENT ORGANIZATIONS   |   |   |   | RELIGIOUS, CULT, OR POLITICAL GROUPS                    |   |   |   |
| Including, but not limited to: scholars, books and journals, exhibition catalogs, conference proceedings, dissertations, etc. |   |   |   | Individual  |   |   |   |
| Print run   | Print run   | Print run   | Print run   | Individual  | Non-Profit  | Church/Religious  | Political   |
| 1000 or less  | 1000-10000  | 10000-50000   | 50000 or more   | Individual  | Non-Profit  | Church/Religious  | Political   |
| \$ 15   | \$ 50   | \$ 75   | \$ 100  | \$ 75   | \$ 125  | \$ 175  | \$ 200  |
| Each accompanying use in print or digital format = \$10   | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 |
| FOR-PROFIT EDUCATIONAL PUBLICATIONS   |   |   |   | SOCIAL MEDIA PLATFORMS                                  |   |   |   |
| Including but not limited to: textbooks, educational catalogs.  |   |   |   | Facebook / Instagram                                    |   |   |   |
| Print run   | Print run   | Print run   | Print run   | Facebook / Instagram                                    | Twitter   | Diigo/PDF   | Other   |
| 10000 or less   | 10000-50000   | 50000-100000  | 100000 or more  | \$ 0.007  | \$ 0.007  | \$ 0.007  | \$ 0.007  |
| Each accompanying use in print or digital format = \$10   | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 |
| FOR-PROFIT COMMERCIAL AND CORPORATE   |   |   |   | ONLINE ONLY (No print edition)                          |   |   |   |
| Including but not limited to: textbooks, educational catalogs.  |   |   |   | Individual  |   |   |   |
| Print run   | Print run   | Print run   | Print run   | Individual  | Non-Profit  | Corporate   | Museum  |
| 10000 or less   | 10000-50000   | 50000-100000  | 100000 or more  | Individual  | Non-Profit  | Corporate   | Museum  |
| \$ 15   | \$ 50   | \$ 75   | \$ 100  | \$ 15   | \$ 20   | \$ 30   | \$ 50   |
| Each accompanying use in print or digital format = \$10   | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 | Each accompanying use in print or digital format = \$10 |

- NOTES
- All prices are suggestions
  - Fees apply to all orders
  - All fees are per image.
  - The fees for publications optimized for screen are per hour.

part of the union, and if they are, that they also demand the same things: to get paid in crypto, with the same rate, and automatically through the deployment of mutually agreed upon smart contracts.

Let's say *Rhizome* was desperate: they really want a great writer to interview this questionable artist and publisher Paul Chan. They want the piece up ASAP on their blog or their web magazine. They go back to the original writer (because all the other writers they approached demanded the same thing!) and say, "Okay, we'll pay you in crypto."

This is where old school political leverage recedes and the new leverage in the form of crypto steps forward. *Rhizome* sets up a Bitcoin wallet on their end. A smart contract is deployed, which is just some programming that connects the two wallets (the writer's and *Rhizome's*). The smart contract stipulates: "If I, Lauren, write the article for you, *Rhizome, Rhizome* will transfer 0.068 Bitcoins to Lauren's wallet once the phrase 'By Lauren' goes on the *Rhizome* website." Rhizome agrees to it, the writer pens the article, her byline hits the website. It is seen by an algorithm which triggers the smart contract and the writer gets paid automatically.

R: *Through the union?*

PC: Through the wallets. Because the wallets are in communication. Because the wallets are connected by the smart contract.

R: *Without human intervention.*

PC: Not exactly. You, as part of this imaginary union, write the smart contract. You deploy the smart contract. The smart contract is the protocol for how these wallets contact each other. And so you can then set the rates and get paid. The potential for automatic payments is real. Unionism is almost an anachronism. I mean who remembers what that even is? But I see in crypto the potential of this new kind of collective bargaining.

R: *One that escapes or has the potential to escape or work around issues of creative precarity.*

People are interested to know whether or not they can get ahead economically. Because economically it's pretty bleak. Wages have been stagnant or declining since the 1990s. It doesn't seem to be getting any better. No one feels like they have a good economic footing.

PC: It's just a matter of getting paid and having a real say over how and at what price. The image rights calculator you were talking about earlier was Badlands's way of signaling that you shouldn't give away your stuff for free. There's a way to calculate what you're worth. We threw it out there as a guide, and then it's up to you then to see if you're willing to send in that invoice and say: "If *Rhizome* wants my article, great. If they want my image, great. It's gonna cost you \$50.00." And so imagining crypto as a kind of collective bargaining is just the next step.

R: *To the tech that Badlands uses, is there a trading system that you prefer? Or that you would suggest?*

PC: If you mean by trading systems the programming layer that enables smart contracts and the like, then I think that's a much longer conversation. It involves the wallets you use and the various smart contracts and programming layers. Ethereum as a crypto is geared towards smart contracts. As a crypto, it's built with the programming layer in mind. The problem with Ethereum is that the smart contracts have, as far as we can tell, real security risks.

Bitcoin is developing their programming layer with things like the Lightning network, Rootstock, multisig, and so on. But we're still a bit away from when the tech that can potentially enable the kind of collective bargaining I was talking about. At the very least, at Badlands we're starting to pay people in crypto. Freelancers who are copy editors and proofers, we say: "We can pay you in USD, in the form of a check, or in artwork by me, or in crypto, or any combination, and you're welcome to choose." And if you want to get paid in crypto, and you don't have a wallet, we'll walk you through how to set one up, and go through a tutorial about best practices. Essentially, as a decentralized cash system, you're your own bank. It's kind of like putting money underneath your mattress. So you have to be aware of what you're doing. We do try to educate our community as much as we can.

R: *What do you think about websites and apps using their users' extra CPU power or unused CPU power to mine a given crypto in a device's background and filter return*

UNIONS: NOT JUST FOR DAD

BLOCKCHAIN

2 CHAINS

Blockchain is just another form of publishing. Gutenberg, the man who invented the modern printing press in the West, learned the technology as a minter. He minted coins. And he took that skill to print, not on molten metal, but on paper. So there is a real continuum between what we understand as the blockchain and what publishing is.

*payments into other end uses? I think of Bail Bloc's bail relief fund, or Salon's offer to users to bypass ads by mining crypto, in order to pay their writers.*

PC: Let them mine!

R: *... Let them mine. Do you think these are useful ways to get around larger institutions, like the prison system, or corporate advertising? Is mining something Badlands has considered?*

PC: To be determined. But the Bail Bloc people are great.

R: *Looking into the future, do you have any crypto predictions?*

PC: Let's see. I think the Democrats will take the House but not the Senate. I think we will unfortunately have our president for perhaps four more years, unless the Republican Party wakes up and realizes that we have a malignant tumor in our democracy. That's my only prediction. With crypto, it's hard to tell. I think we will continue working with the idea of the blockchain as a form of publishing and we hope to publish our own blockchain sometime this year.

R: *Is Badlands thinking of developing their own blockchain or, maybe even, their own token [ED. a surrogate for value in a given crypto scheme]?*

PC: We won't do our own token. We're not a startup. Or an exit scam. But I think we do seriously think of the blockchain as a form of publishing. It fits the bill. There's writing

I hate that sharing yourself,  
being vulnerable on  
the Internet, is now  
associated with risk and  
punishment.  
It used to  
be an act of  
self-assertion  
and triumph

Paul Ford and Miranda July's 7 x 7 performance took place on May 14th, 2016. It was the final presentation of the day. It's also one of the series' most memorable projects, in turns shocking, funny, tender, discomfiting, and extremely generative.

After revisiting their story performance dozens of times in the past two years, we found our interpretations of it loosen, and deepen, based on our own feelings about data, social media, and the shifting political moment. We asked them both to illuminate the process further, by reflecting back on it two years later.

**Rhizome:** *You tweeted, recently, "We take your = thoughts / Privacy seriously = prayers."*

*As you worked with Miranda, how did you both discuss the ethics of the performance, namely, the issue of the privacy of audience members as you worked? (We also asked Miranda a version of this question.) You were clear to note, back then, that the focus for you both wasn't issues of privacy, but narrative, namely what story could be told using the materials of the audience there, in that moment in time. That audience, as Miranda correctly noted, was from art and tech and startups, and likely very entrenched in ethical questions around privacy, surveillance, and self-surveillance.*

**Paul Ford:** It was an eventful time in my life, and this was one of several intense things ongoing and so my memory is less detailed than I want it to be. What I do remember is that we discussed it continually — it was a huge concern. We were very



```
ng="utf-8"?> <!DOCTYPE html PUBLIC
PAUL FORD THE CODE THAT TALKS
TO TWITTER & IMPORTS THE PEOPLE
<?xml version="1.0" encoding="UTF-8" strict="EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en"
xml:lang="en">
<head>
<title>The Code that Talks to Twitter and Imports The
People</title>
<!-- 2018-04-26 Thu 23:33 -->
<meta http-equiv="Content-Type" content="text/html;char-
set=utf-8" />
<meta name="generator" content="Org-mode" />
<meta name="author" content="Paul Ford" />
<style type="text/css">
<!--/*--><![CDATA[/*<!--*/
.title { text-align: center; }
.todo { font-family: monospace; color: red; }
.done { color: green; }
.tag { background-color: #eee; font-family: monospace;
padding: 2px; font-size: 80%; font-weight: normal;
}
.timestamp { color: #bebebe; }
.timestamp-kwd { color: #5f9ea0; }
.right { margin-left: auto; margin-right: 0px; text-align:
right; }
.left { margin-left: 0px; margin-right: auto; text-align:
left; }
.center { margin-left: auto; margin-right: auto; text-align:
center; }
.underline { text-decoration: underline; }
#postamble p, #preamble p { font-size: 90%; margin: .2em; }
p.verse { margin-left: 3%; }
pre {
border: 1px solid #ccc;
box-shadow: 3px 3px 3px #eee;
padding: 8pt;
font-family: monospace;
overflow: auto;
margin: 1.2em;
}
pre.src {
position: relative;
overflow: visible;
padding-top: 1.2em;
}
pre.src:before {
display: none;
position: absolute;
background-color: white;
top: -10px;
right: 10px;
padding: 3px;
border: 1px solid black;
}
pre.src:hover:before { display: inline;}
pre.src-sh:before { content: 'sh'; }
pre.src-bash:before { content: 'sh'; }
pre.src-emacs-lisp:before { content: 'Emacs Lisp'; }
pre.src-R:before { content: 'R'; }
pre.src-perl:before { content: 'Perl'; }
pre.src-java:before { content: 'Java'; }
pre.src-sql:before { content: 'SQL'; }
```

```
table { border-collapse:collapse; }
caption.t-above { caption-side: top; }
caption.t-bottom { caption-side: bottom; }
td, th { vertical-align:top; }
th.right { text-align: center; }
th.left { text-align: center; }
th.center { text-align: center; }
td.right { text-align: right; }
td.left { text-align: left; }
td.center { text-align: center; }
dt { font-weight: bold; }
.footpara:nth-child(2) { display: inline; }
.footpara { display: block; }
.footdef { margin-bottom: 1em; }
.figure { padding: 1em; }
.figure p { text-align: center; }
.inlinetask {
padding: 10px;
border: 2px solid gray;
margin: 10px;
background: #ffffcc;
}
#org-div-home-and-up
{ text-align: right; font-size: 70%; white-space: nowrap; }
textarea { overflow-x: auto; }
.linetr { font-size: smaller }
.code-highlighted { background-color: #ffff00; }
.org-info-js_info-navigation { border-style: none; }
#org-info-js_console-label
{ font-size: 10px; font-weight: bold; white-space: nowrap;
}
.org-info-js_search-highlight
{ background-color: #ffff00; color: #000000; font-weight:
bold; }
/*]]>*/-->
</style>
<script type="text/javascript">
/*
@licstart The following is the entire license notice for the
JavaScript code in this tag.

Copyright (C) 2012-2013 Free Software Foundation, Inc.

The JavaScript code in this tag is free software: you can
redistribute it and/or modify it under the terms of the GNU
General Public License (GNU GPL) as published by the Free
Software Foundation, either version 3 of the License, or
(at your option) any later version. The code is distributed
WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU GPL for more details.

As additional permission under GNU GPL version 3 section 7, you
may distribute non-source (e.g., minimized or compacted) forms
of that code without the copy of the GNU GPL normally required
by section 4, provided you include this license notice and
a URL through which recipients can access the Corresponding
Source.

@licend The above is the entire license notice
for the JavaScript code in this tag.
*/
-->
</script>
```

```
<!--/*--><![CDATA[/*<!--*/
function CodeHighlightOn(elem, id)
{
var target = document.getElementById(id);
if(null != target) {
elem.cacheClassElem = elem.className;
elem.cacheClassTarget = target.className;
target.className = "code-highlighted";
elem.className = "code-highlighted";
}
}
function CodeHighlightOff(elem, id)
{
var target = document.getElementById(id);
if(elem.cacheClassElem)
elem.className = elem.cacheClassElem;
if(elem.cacheClassTarget)
target.className = elem.cacheClassTarget;
}
/*]]>*///-->
</script>
</head>
<body>
<div id="content">
<h1 class="title">The Code that Talks to Twitter and Imports
The People</h1>

<div id="outline-container-sec-1" class="outline-2">
<h2 id="sec-1">A tool to find stories</h2>
<div class="outline-text-2" id="text-1">

<p>

First this was a thing that I did. Miranda did
many, many other things, and we had help from
Starlee Kine and Elizabeth Minkel.

</p>

<p>

What I did was built a little website that made
it possible to search through thousands of tweets
by a specific group of people. In this case the
people in the audience.

</p>

<p>

This file of code is one of many that I made in
order to make that little website and it is the
heart of the digital spying portion of that app.
This is the part of the program that takes a list
of Twitter handles and then downloads lots of
their tweets and drops those into a database so
that they're easy to search.

</p>

<p>

From that corpus of tweets you could search
for words like "love" or "Paris" and see how
different people tweeted about those things,
and draw connections across an audience. Then
you could use that to tell a story about the
people in the room.

</p>
```

```
<p>

Okay, computer, let's go. This is a file called
<code>import_tweets.py</code>&#x2014;

</p>

<div class="org-src-container">

<pre class="src src-language">
import tweepy
</pre>
</div>

<p>

"Tweepy" (<a href="http://www.tweepy.org">http://www.tweepy.org/</a>) is the library
of routines that lets us access Twitter, once we
invoke things with sufficient codes. All of this
code is freely available. That's how this world
goes. I don't know the name of the person or peo-
ple who made tweepy.

</p>

<div class="org-src-container">

<pre class="src src-language">
import config
import sys
from time import sleep
</pre>
</div>

<p>

These are all just regular things that you learn
to use when you program in Python – little util-
ities for doing little things. Most of them come
with Python. In this case "db" is a module I
wrote that we use to connect to a small database
(it eventually grew to about 100 megabytes worth
of tweets).

</p>

<div class="org-src-container">

<pre class="src src-language">
import db
</pre>
</div>

<p>

And that is our tiny toolkit for today.

</p>

<p>

It's been a few years so I'm getting back into
this file. You're always terrified of what you'll
find but this code isn't that bad.

</p>

<p>

That is simultaneously both a relief but also
always a little disappointing, because I'd love
```

to have revisited this file after two years and then subsequently thought to myself, *<i>what a fool I was, I'm so much smarter now</i>*.

This file is a moderately successful example of craft done in a hurry.

## Talking to Twitter

This is a class, just a way to organize our digital thoughts really. I'm going to handle it.

```
class TwitterSearchClient(object):
    """Set up a tweepy client"""
    def __init__(self,
                 consumer_key, consumer_secret,
                 access_token, access_secret):
        auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
        auth.set_access_token(access_token, access_secret)
        self.client = tweepy.API(auth)
        return None
```

Code can be very evocative, because it required focus at a specific time and then usually gets filed away and ignored.

This file brings up memories mostly of stress as the rest of my life was on fire and I was simultaneously frequently on the phone with Miranda July. While doing this project I'd started a web company with a co-founder. All is well now but at the time it was either going to succeed or fail, often both at once. My twins were four. I was doing other things that made me feel important but absolutely devoured my brain, like advising the White House and writing a column called "Big Data" for The New Republic. I wanted to do these things to feel like I was real and not a fraud. I felt like I was standing on stones at the ocean and rocking back and forth.

*2Sixxxx  
Trust*

This below is a class. This is the collection of methods and data that we'll use to automatically deal with Twitter.

```
class TwitterSearchResponse(object):
    """Talk to Twitter."""
    def __init__(self, client, user):
        self.client = client
        self.screen_name = user.screen_name
```

I remember one Sunday when we were still trying to figure out what we would build for this project. My wife had dropped me off at a park with the kids while she went to get groceries, so I was at a park in Red Hook, Brooklyn, and on the phone with Miranda while receiving text messages about a new work crisis. Then I was marching around a playground trying desperately to find a bathroom for a child and then, right as we were about to enter a restaurant and use that bathroom, one of my twins had a massive incident, and I was in the situation of trying to calm him down, but not being able to take him anywhere (he was at that point a pretty serious public health hazard).

That intervening twenty minutes of trying to soothe his tears and shame, waiting for my wife to return, not being able to take him into the restaurant, cursing myself for the lack of wet wipes, having another small child running around anxious and bored, this art project rotating in my brain, the new company humming violently in the background.

I haven't thought much about it until I was looking at the code. Looking at this code brought all that right back. This often happens to me; I open a file and look at some code, and it required some sort of intense cerebral focus and as my brain unpacks what I did those years ago a flush of memories comes unbidden and blasts itself into my forebrain. If I was happy when coding and I look years later at that code, I become happy. If I was stressed I become stressed.

I suppose I associate this code with being an uncertain and inattentive father.

```
Let's look a little further at the Twitter Search Response class.
```

```
def save(self):
    try:
        print("[search] [search_term: {}".format(self.screen_name))
        i = 0
        for page in tweepy.Cursor(self.client.user_timeline,
                                  screen_name=self.screen_name,
                                  count=200).pages(100):
            print("{}.".format(i))
            i = i + 1
            sleep(config.TWITTER_API_DELAY)
            self.process_page(page)
```

What we're doing up there is just getting 200 tweets from a person at a time. At least I think that's right. I can't remember what the `pages(100)` gets you. I could look it up but so could you. This code is open-sourced, feel free to improve upon it.

You can only hit the Twitter API so hard. I remember there was a lot of urgency in the project and that it was difficult because the computer sort of had to chug overnight to get all the data, because Twitter only lets you go so fast and no faster.

Much of this code is about errors – about reporting when we'd gone too far and asked too much from Twitter.

```
except tweepy.error.RateLimitError:
    print("[search] [error: rate limit] {}".format(self))
    sleep(60)

except tweepy.error.TweepError as e:
    print("[search] [error: tweepy] {}".format(e))
    sleep(60)
```

*2Sevvvvve7  
Trust*

```
except:
    print("[search] [error: unknown] {}".format(sys.exc_info()[0]))
    sleep(60)
```

And this is the part where you save the tweets to the database. It makes one row per tweet. It ended up being a sizeable database, maybe 95 megabytes of data. But that includes indexes and extra cruft so the actual text of the tweets is smaller. Probably about as much tweeting as in a set of encyclopedias. I could tell you exactly but I wrote enough code.

```
def process_page(self, page):
    for item in page:
        print("saving tweet {}/{}".format(item.user.screen_name,
                                           item.id,))
        db.Tweet.create(
            id=item.id,
            user_screen_name=item.user.screen_name,
            user_follower_ct=item.user.followers_count,
            tweet_text=item.text,
            tweet_timestamp=item.created_at,
            tweet_favorite_ct=item.favorite_count,
            tweet_retweet_ct=item.retweet_count,)
```

I like this part the best. I'm using Python and I'm using this tiny database called SQLite3. And some code in the middle called `peewee`. The thing is, everything is small and free and tidy. These three lines of code make every tweet easily searchable, Google-style. Not as subtle or smart as Google, but also surprisingly good. You can download tens of thousands of tweets and then you can triage them, you can look through them.

People asked me about issues of consent and later I've thought about this piece in the context of how social media from people in marginalized communities is re-used by journalists. Our

company did an event with the Knight Foundation about this, and it made me think about things.

</p>

<p>

There's another part of me that feels that this piece is done and the code is free, and that explanation or recontextualizing done by me is just a sort of half-assed apology; that the piece is out there for judgment and thus so are Miranda and I, and that's how it works. Part of me wants to kind of revert to "I'm just the tech person in the tech-art partnership."

</p>

<p>

Anyway these three lines of code were deep enablers of the piece. Much of the work was done "by hand" with Google, careful editing, etc. But! Much texture was added by searching through the corpus and here is what it took. Get ready and –

</p>

<div class="org-src-container">

<pre class="src src-language">

```
db.FTSTweet.create(
    tweet_id=item.id,
    content=item.text,)
```

</pre>

</div>

<p>

There you go. That's the difference between an archive and a tool. That makes the search engine.

</p>

</div>

</div>

<div id="outline-container-sec-4" class="outline-2">

<h2 id="sec-4">Winding up</h2>

<div class="outline-text-2" id="text-4">

<p>

This is the `__main__()` function; it's where the actual commands go. Everything above is organized into classes, sort of properly filed. And this is the set of instructions for actually doing something:

</p>

<p>

First, make a Twitter search client...

</p>

<div class="org-src-container">

<pre class="src src-language">

```
def __main__():
    client = TwitterSearchClient(config.TWITTER_CONSUMER_KEY,
                                config.TWITTER_CONSUMER_SE-
```

CRET,

```
                                config.TWITTER_ACCESS_TOKEN,
                                config.TWITTER_ACCESS_TOKEN_SECRET)
```

</pre>

</div>

<p>

Then get the list of all the users (meaning all the people we were observing)...

</p>

<div class="org-src-container">

<pre class="src src-language">

```
users = db.User.select()
```

</pre>

</div>

<p>

Then step through those users and search for them and save the results.

</p>

<div class="org-src-container">

<pre class="src src-language">

```
for user in users:
    tsr = TwitterSearchResponse(client, user)
    tsr.save()
```

</pre>

</div>

</div>

</div>

<div id="outline-container-sec-5" class="outline-2">

<h2 id="sec-5">RUN</h2>

<div class="outline-text-2" id="text-5">

<p>

I can't remember exactly but this code probably ran for a few days, at least overnight, but probably more like four days. I would run it on maybe 20 people at a time? It was on Quests.

</p>

<p>

What a blur. Miranda and I worked on different ideas for months and rejected many. She has high standards and I was very conscious that she was worried about the final performance and quality, and I was aware that she was very famous and sort of a serious person in this world, and that I was less serious by far.

</p>

<p>

The night before we performed I was the fattest

person at the special dinner held at Rhizome that was sponsored by Chopt, the salad superstore, and the evening had a salad theme, which was all salad and white wine. That turns out to be quite a combination. People were very drunk. I buttonholed the developers of WebRecorder because that is an important work sponsored by Rhizome, and I told them so. I went outside and looked out at the balcony at the New Museum. I didn't know what to say about any of it. I was perched on a smallish chair at a crowded table.

</p>

<p>

At the presentation Miranda was wearing a shirt with interesting sleeves and I was wearing like a big-and-tall blazer. I often feel like a lapsed bouncer.

</p>

<p>

I thought it was a good piece of work and that it was getting somewhere interesting. Some of my internet friends yelled at me afterwards about issues of consent and privacy. Just this week the person who emailed an interview from Rhizome had many questions about consent and privacy that made me feel a little backed into a corner. But that's what this is and there it is.

</p>

<p>

I don't really believe that people want to close up the gap between technology and the arts. I used to think it would be good to get these worlds together but I think these are cultural territories and that we patrol them with vigilance. To bring these worlds together is to destroy a lot of identity. I'm not sure what you get in return.

</p>

<p>

Afterwards many people asked me what Miranda July was like. I said that she was as she seemed in her work, intense and deeply committed and serious, and also that she had a certain muscle in her neck that twitched when you misintoned and that in collaboration you became quite aware of her neck and its muscles, because even if she was trying mightily to be gentle, that neck muscle would tell you how things were going for real.

</p>

<div class="org-src-container">

<pre class="src src-language">

```
__main__()
```

</pre>

</div>

<p>

And now we are done. Run it. This is how a lot of code ends, at the beginning. You've set everything up and tried it up and now the computer has loaded all the classes and organized itself, and finally you say: Go. Do what I told you. It runs, it downloads tweets, and saves them. This makes the archive. Other code enacts it, provides that little white box with a border into which one can type.

</p>

<p>

We used it to write some of the performance, mostly to add texture and interstitial lists. It let us merge people together. We did the performance and then there was a celebration at a large space branded by Samsung with a huge screen. That was it, and now it is 2018.

</p>

<p>

The code is familiar but the work and process is that of another person. I sell services now, and write code for myself in the evenings, and occasionally explain Bitcoin on cable TV in a vest.

</p>

<p>

I could have showed you screenshots and made this much more clear but this is far more accurate if you want to understand technology.

</p>

<p>

Rhizome has invited me to many events since this happened and I've attended none, and they have been unfailingly gracious to me, but I don't feel worthy or like I have a context in this world, and so I stay back. I appreciate the invitations and that there is an organization seeking to isolate beauty and significance out of a world of violently proceeding digital stuff.

</p>

</div>

</div>

</div>

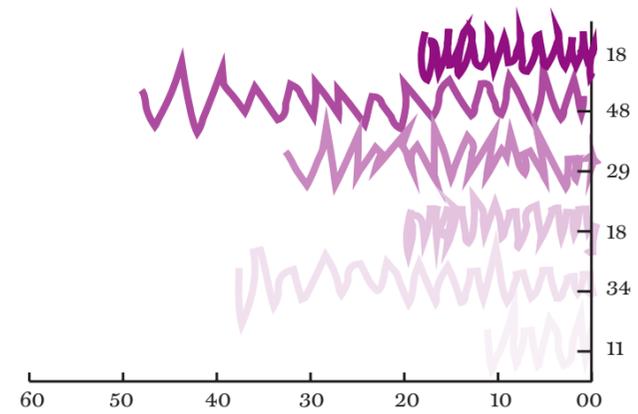
</body>

</html>

Trust: Q&A #1  
Q: Nothing free comes without a cost. In what way do you pay for your time spent on platforms, including social media?

Trust: Fig. 3

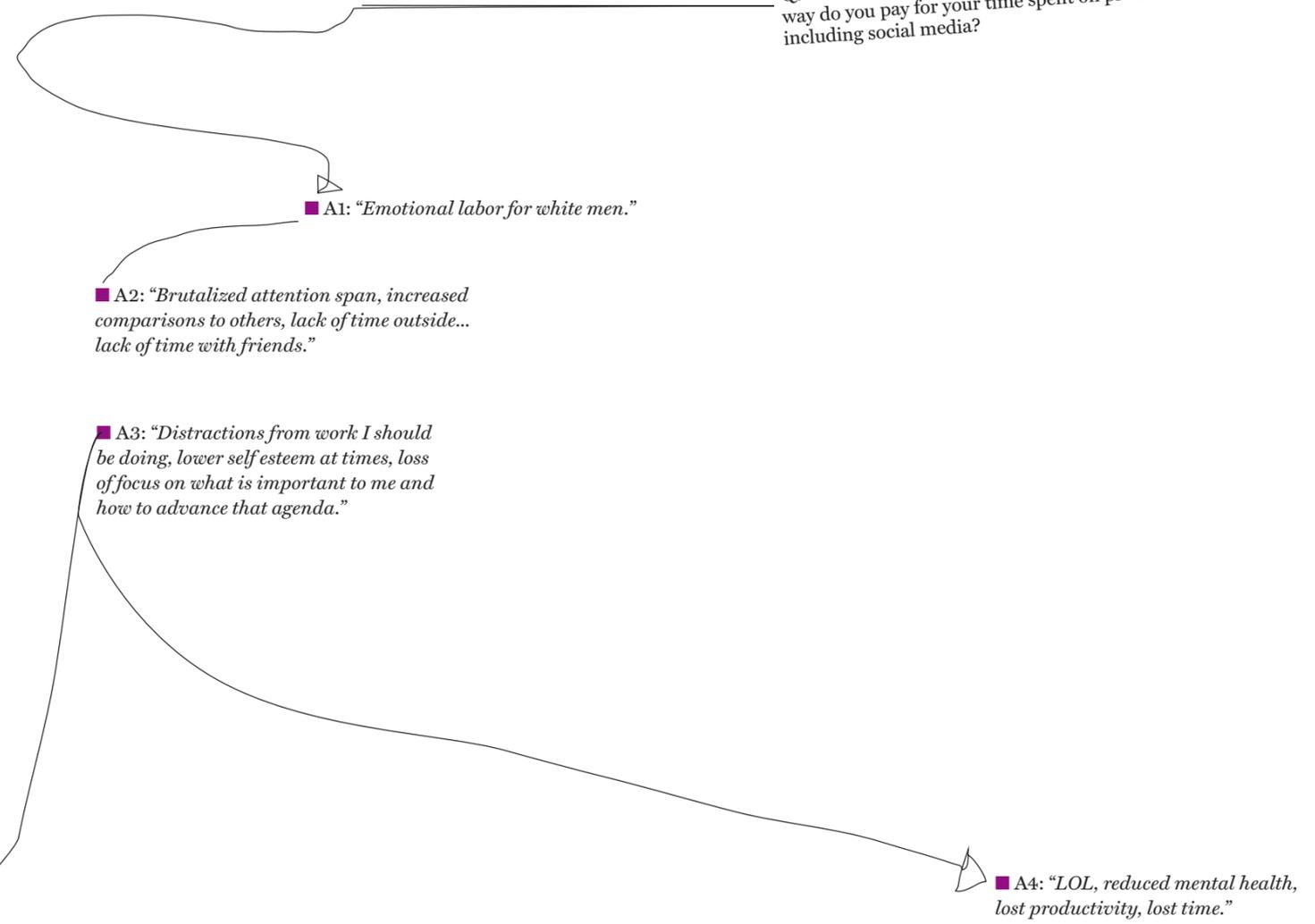
User-oriented programs are made to be easy. We take Lyfts and order all the things through Prime to cut down on wasting time (the train, going to a store). What do you do with the free time you've earned?



- I spend time on my passions.
- I consume more media, entertainment, music, culture.
- I work more, without cease, without rest.
- I get to spend more quality time with my family and friends.
- What free time?
- Other:

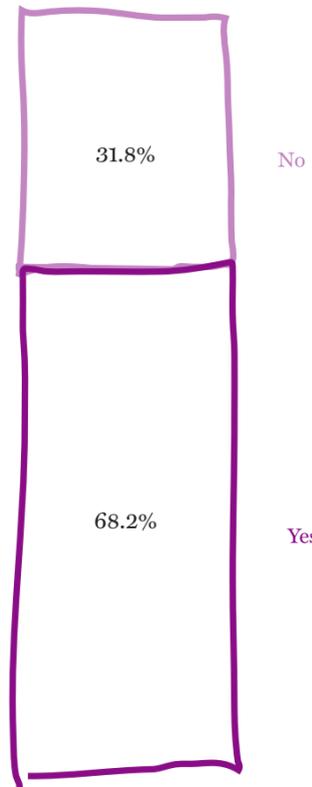
*"i become more devoid of people and movement"*

■ A5: "In anxiety and restless, non-focused split attention."



Utopian Promises: Fig. 1

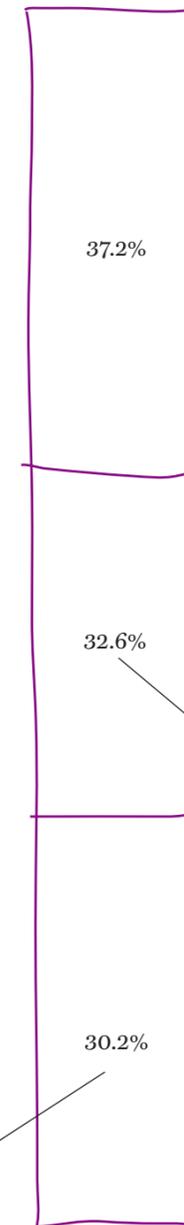
Technology is an inevitable compromise for access to a life of possibilities, giving me more time, flexibility, and resources to be able to live out my dreams. Technology helps me have more agency over my life by giving me useful tools.



Yes. Some of the great political movements towards greater access and equality are yet to come. They'll emerge through the waves of political art and arts advocacy online.

Utopian Promises Fig. 2

Economic oppression and racial supremacy can be successfully countered through the offerings and potential of digital technology.



Other:

No. Wealth is only concentrated. The effects of racial supremacy are only amplified.

"this isn't a yes or no. it's complicated! is an activist uploading a video to Youtube safer than crossing a border w/ a film canister?"

"they can be countered if people dismantle the systems that concentrate power to democratize the internet as it was originally intended to be...a diffuse network for information transfer."

"Yes. Wealth is concentrated, and the effects of racial supremacy are amplified. But some political movements towards great access and equality are happening, and more to come. They might not have anything to do with art."

"Digital technology exposes economic oppression and racial supremacy but action occurs in 'real' arenas."

"if numbers are the language of power then code is the reckless enacting of power onto people. i appreciate digital advocacy but am skeptical of the platforms they are forced to operate on."

WORDS IN THIS CHAPTER

PILGRIM

BOT

VOICE

GENIUS

SYSTEM

We watched Tracy Chou's collaboration with Claire Evans with admiration: bots with randomized genders and voices play out a tense, tight drama about a plausible Silicon Valley office.

Chou, a software engineer, entrepreneur, and tireless diversity advocate, has a clear and intuitive understanding of programming and systems, which she passionately applies to engineering of equitable frameworks to counterbalance gender discrimination and bias.

# the paradox of intolerance

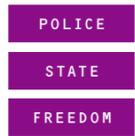
We thought Chou's focus on systemic institutional issues would intersect well with Kate Ray's interests. Ray, a programmer, engineer, and journalist, deploys her human-focused, "anti-technology" approach through playful apps, maps, and sites that make code learning accessible, allow amateurs to replicate media giant website designs in an hour, and address gender violence and sexual harassment through both low-tech mediums and open-source design processes.

On a Saturday at NEW INC., they discussed their mutual interests in systems and representation, Silicon Valley's blind spots, neoliberalism, what an ethical design of systems might look like, and the present and future of women in technology.

**Rhizome:** I'd like to start with both of your collaborations — Kate, yours with Holly Herndon, and Tracy, yours with Claire Evans. What did you learn from the experience?

**Kate Ray:** I had a really good collaboration. I do most of my projects solo, aside from work, which has to be collaborative. I remember being really nervous ahead of time that I would have to work on something with somebody, especially in a high-pressure situation. I was really happy with how our conversations went, and that we were really building on each other. I don't know if I've worked so well with someone in that intense way. Maybe it just shows that you're really good at picking; I think you guys paired us really well.

The project was SPYKE, which was like an old chat app where you had to enable your video camera in order to start talking with somebody. But here, you wouldn't see a video anywhere. You would just see the chat box. You could take a picture of them at any point along the way, and they wouldn't know that it was happening. You'd sort of be spying on them even though you've authorized them to do it. I have been thinking about this a lot this week with all the Facebook revelations. I feel like we were sort of just ex-



ploring stuff, and it was really abstract. In the conversation we got into some of the ideas around surveillance; what if you give someone permission to watch, but it still doesn't feel like they're actually surveilling you? The project feels much more concrete when you think about what Facebook has been doing. It started out in this really abstract and emotional place, but certain aspects of it feel more relevant right now.

**TC:** It was great, my project with Claire. So, Claire is a very multi-talented person. She is a singer and songwriter, and a writer. She recently released a book too [ED: *Broad Band: The Untold History of the Women of the Internet*.] I had a little bit of anxiety because I just didn't know what we were supposed to do. I think in contrast with you, Kate, most of my projects *are* in collaboration. I've mostly worked on teams with other people. The collaboration part wasn't scary to me. In most cases, I have relatively well-defined output goals: I'm trying to build this project, or product. I'm the engineer on the project, and there is a product manager and designer, and it is very clear. In this case, the goal was just to produce something cool. We didn't know each other before, so there was a bit of mutual discovery around the different perspectives, skills, and experiences that we wanted to bring.

Pretty quickly, we found some common ground around gender issues relating to technology. I thought because she was a singer, she'd want to do some musical. She said, "No, I'm actually in a band with my partner, and I don't feel whole making music without him." That's interesting. I'm not artistic at all. I guess that was the point, pairing a technologist and an artist. She asked, "How about we do a play? And I will write the play." I don't know anybody's who's ever written a play. It's just so far out of my domain. Then she started a Google Doc, and just started writing. I was watching her type out the play in real

time. It was kind of amazing. I had never seen that happen before. I had never really spent time with writers in real time.

**R:** *It seems like it had been labored over much longer. Watching that construction of artificial language was fascinating. Artificial languages demand care and creativity and thought, because the bot-writer thinks long and hard on how a person will respond, on what will make a person feel warm or responsive.*

**TC:** Claire just kind of knocked it out. I was watching her compose it, and then I wrote the Python script to read it out loud in all different permutations. I was amazed by her writing process. Similarly, she watched me do the technical side and was like, "Wow, how did you make the computer read these things aloud in different voices?" She was writing a play script, and I was writing a Python script, and they came together so well. That was cool, to be able to jam together. I started playing with different things, like how long we should pause in between the different characters, how we should slow it down for the robotic voice. She got to test the voice out as well, adding different punctuation based on how the voice would read it differently.

**R:** *You both talk about or work on redesigning systems through your work, to either reveal or address the unseen. Kate, you have your map where people can mark places they have cried throughout New York and elsewhere. SPYKE gives us intimate glimpses of people alone. Bots, maps, language trees. How do you imagine systems revealing the hidden, whether they're biases, microaggressions, or, say, emotional nuances flattened out by sterile, impersonal environments, like work?*

**TC:** The first thing that comes to mind is a discussion I was having with one of my professors from school, who's leading in the AI field. We were talking about this issue of bias in models built from data that is biased. One very promising thing is once you've identified that bias,

you can, in some cases, remove it. There was one study that's been floating around about gendered language. If you are training your models over a corpus of general human language data, they'll often pick up gender affiliations between male and doctor, female and nurse. You could say in that case, that the model's working really well. It picks up exactly what it was being fed, which is, unfortunately, biased data. But then we can actually choose to go zero out those biases if we think that there shouldn't be a male correlation to doctor and a female, to nurse.

What's promising there is once we've identified the bias, we can remove it, which is not the same with humans. If you talk to a human, and identify that they have some sort of bias, whether it's sexist or racist or some other form — it's very hard to behave in a way that's not biased. With the machine learning model — with the right types of models — you can just go and manually zero out those parameters.

It's not the case for all models. There's a lot of work being done right now in the AI field, especially around deep learning, to make the models interpretable. So, there's been a little bit of a trade-off, where the models that are easiest to interpret are often not the most performant ones. You could imagine, pretty easily, a decision tree. What it is doing is it is walking down a tree of yes, no. Does it cross a threshold or not? You just go down the tree. It is pretty easy to understand how the model made a decision.

But those models don't perform as well as the black box neural networks. There are a bunch of researchers working now on how to understand what those black boxes are doing inside. So, if a decision is made that is not ideal, we can go in and examine why it happened. A lot of times these systems are just training on things you don't understand. When

you look at the data, you have some intuition for the domain. You can figure out what it is. In other cases, it's about finding some smart thing in the data. We can't figure out what it is when we're just presented with all of the numbers that are the parameters.

**R:** *Playing devil's advocate, one might say that this is a road to creating politically correct AI and "politically correct systems." Meaning, we're creating data that is equitable when people themselves are not. The flip side of that is, what would a trans-feminist data set look like? An anti-capitalist dataset?*

**TC:** I think it's hard to say what something should be. You can say, let's devise the system, but what does a non-biased system look like, and what does it mean to create an optimal system? There's still a lot of human editorialization, and as you pointed out, what we accept to be good also changes very quickly. Our norms change very quickly. Do we also update all of the models that we're building to map to the new versions of what is correct?

**R:** *And our positions change based on emotional context, too. Kate, what I really appreciate about SPYKE is the unearned intimacy with these people in front of their computer scrolling through their feeds. It is voyeuristic, seeing these private moments, faces morphing from happy to glum within minutes. Could you talk about your projects as they frame our relationships with technology as extremely human and emotional?*

**KR:** I would say my projects are all very intentionally anti-technology. In general, they have required humans to do human work to make them even a little bit interesting. The only time I have thought of using machine learning was if I could use it in an artistic way, as opposed to creating utility out of it.

A project that I made last year, for Ingrid [Burrington]'s conference about science and speculative fiction, was a really simple bookshelf app. You could use it to make a set of book mixtapes that you could like. You could just name a bunch of books and put them together into a list, and give the list a weird name. Being the opposite of Goodreads is what I was going for. There's no action that you're doing that is creating data. The app is just you, the person deciding what data you want it to make, and then creating it. The same goes for the Cry in Public app. There is nothing interesting there, except for the human's personality being funneled in a very particular way.

I would rather work on projects that use technology but are kind of anti-technology in

ethic. I want to investigate the limits around what technology is doing to your data, and find some interesting things going on there. I'm not even using it to make something happen.

**R:** *It's a mode of turning people's attention to alternative possibility. This is why your Scroll Kit was used so heavily. There's a nice divergence here between creating shifts in perception through software experiments, and creating shifts in perception by revealing institutional inadequacy. Do you both think about the tension between experimentation and professionalization within tech, especially as you work with activists now, some of whom worked in Silicon Valley and decided to leave? What types of communities are you able to build within institutions versus outside?*

**KR:** I've struggled a lot with this in the last year, because I used to be immersed in tech. I see a lot of solutions there. But in the last year, I've not wanted to work in it at all. I ask myself, *Okay, what do I do?* Work-wise, I've found a job that honestly isn't a tech company; I work at Pilot Works, which helps people start food businesses. We are renting kitchen spaces and getting people to cook, enabling that by communing with a bunch of technology. I do all of my side projects just for myself, with no money coming from anyone. That way I can keep it the way that I want it to be.

**R:** *Is there value in creating your own communities versus working alone? How has that changed for the both of you throughout your careers?*

**KR:** Well, I've been thinking a lot about gender stuff with the #MeToo movement. Once that came through, I started trying to work on something to address it. Even there, I got in over my head. I said, I don't think I should be making anything. So I started volunteering for an assault hotline. That is the lowest tech. It's an ASP app that breaks all the time when you're trying to train. It's actually interesting, because it's like a really pure form of humanness coming through this not-great chat app; sometimes you feel like you're behaving like a robot, because you have all these scripts to say. But the only thing that you are providing is your human empathy and human presence, your being there. I like how this is the lowest tech, that is enabling some humanness to come through.

I don't know if this will be my solution forever, but I feel like I am backed away from a lot of problems that I don't know what to do about anymore.

**TC:** Yeah. The tension between working with or within problematic institutions, versus outside of them for a change, is one I see all the time. I personally felt to be more effective to be within institutions or on the inside, because then you understand how those systems work. You know what the leverage points are, and who the right people are to go to. In the end, these are all the people, so you just need to have that human map. From the outside, it's hard to know what drives people to do things or not do them. Obviously, working from within the system has its challenges because then you feel like you are complicit with the bad system, and potentially compromising your values. There is something nice about tracking the totally ideologically pure route, but often, it's not very practical. When you're not following what you believe to be ideologically pure, it can be hard to defend the line in the sand that you've drawn, whatever it is.

I've seen both sides of it. Not intentionally, because I wanted to step out of a major institution, but because I've worked in Pinterest for a number of years and wanted to go on to do other things. I'm no longer at a big-ish tech company, but I've still been operating within the system. I've been working on a few different startup projects. I'm on my third startup idea project since I left Pinterest.

Startups will often participate in incubators as they grow. We had a lot of heated discussions about which programs it was okay for me to participate in, because many have not always had the best record on diversity and inclusion. I still thought it was valuable to go and see these programs from the inside. I have many friends who have gone through these programs and work for them. However being in a cohort was very eye opening. It enabled me to give a lot of concrete feedback. I have no idea if they're going to take my feedback, but there's a lot of daily reminder elements that would only be caught by somebody going through the system.

Take one minor example. When you submit an application, you usually have to indicate your areas of expertise. You check off areas like artificial intelligence, backend engineering, marketing, sales, all these different things. Diversity and inclusion is never one of those things. It's like, wow, no one has thought this would be an important area of expertise. And I don't think this issue is critical, but it's just one symptom of a greater problem. Another time in a similar context, a presenter spoke about how people view the valuations of their companies like they do the size of their manhood. I was looking around the room, thinking, did nobody else hear that? Why is nobody else upset? There's like hundreds of people, but no one else seems to be upset.

If you talk to a human, and identify that they have some sort of bias, whether it's sexxist or racisssst or some other form — it's very hard to behave in a way that's not biased. With the machine learning model — with the right types of models — you can just go and manually zero out those parameters <sup>36</sup>

There are always a lot of little things. Accumulated, these instances are not intentionally trying to push someone like me out or anything.

One of the other takeaways for me was that, when you're a startup, most of everything is about growing your company, so even the female founders or under-represented minority founders for the most part are not thinking about the microaggressions they experience, or how to make spaces and places more equitable. They are just trying to focus on growing their companies. I pay a little bit more attention to these things, because I worked so much in diversity and inclusion. I am naturally primed to pick up these little cues. But I acknowledge that the bulk of people's attention is not going towards these issues.

**R:** You have spoken about the idea of diversity as a kind of "lowering of the bar," which is of course a really insidious kind of racist thinking. When you logically deconstruct this language and thinking, there's a kind of beauty to that. So when person A says, person B was just brought in because of inclusion, you can eye their assumptions. They assumed the working plane was flat to begin with. And what person A is really saying is that, person B, in their mind, doesn't really have the capacity to do the job. Where does that come from? It comes from centuries of racialized hierarchies in which one group assumes what is in another's mind. It's like moving backwards up a messed-up decision tree. And first-generation immigrants learn the myth of meritocracy the hard way: If I just do my best, then that shields me from being harmed. I wonder about this idea of "just working hard" and "sheer talent alone," and a pure system. But there's no pure space without politics. We are all embedded in social reality and history. So when we claim an objective purity, purity for what, and to what end?

**KR:** It makes me think about a lot of stuff going on in the science fiction and speculative fiction communities. Recently, the prominent award-winning books have been suddenly from women of color writing science fiction. The backlash to those awardees is saying, "Everything is just political now. All the science fiction is all about politics."

**R:** *There were the protests around the Hugo and Nebula award nominees.*

**KR:** As if it weren't political, as if you were just writing about the future, and that had nothing at all to do with how the world that

you were coming from functioned, or how what you wanted to live in the future wouldn't relate to politics. That's the most stark, funny example of this purity to me lately.

**TC:** Also some of the responses are very emotional, and they usually come from people who feel like something is being taken away from them. They don't want to give up their positions of power and their representations as good or superior. It's fundamentally an emotional response, but then couched in rational language. It's like, let's just walk it through. Let's look at the numbers. The graduation rates. But people will find ways to justify their point, and they don't always make sense. That wasn't really the point. The point was that they felt defensive and didn't want something taken away from them.

**KR:** Yeah. The friends who have come out strongly on this side have so much more to say to me than I have to them. I remember after the Google Memo incident, I had older friends from college asking me, "So, what do you think about this?" I would say, "Well, it's stupid." Then they would just want to talk for 45 minutes about why they thought the Google employee was right, and about the memo and why it was important and why it was good. I had so much less to say, but they had been doing all this reading. Sometimes it felt like the reading and researching was primarily to not face their much more emotional, personal reaction. By reading and listening to podcasts and stuff, they would have an argument that they could present.

One of the more negative projects I planned, that I haven't done, was to take some of these e-mails that I was getting from friends and just make a bot to generate sentences to mimic them. They would all use the same language. It started to get to the point where if I just saw someone arguing about free speech, well, that plus certain other words, you just knew what someone would argue.

**TC:** I've actually been happy in some cases when people were not so sophisticated around the packaging of their ideas and straight up said what they were thinking. It gave me insight into what was really going through their minds before they may have found better language. I've talked to people, like Asian male engineers, for instance, who say, *This is all we have, this is the only thing we're good at — why take that away from us?* I'm like, oh. Our society is really deeply problematic. [laughs]

**R:** *And that is the precarity of a system that wants us to fight over little parcels of land.*

*Utopian Promises*

*I think of the protest against tent cities in California, the growing conservatism of immigrants, and the violence engendered by the model minority myth.*

*What changes have you seen since 2013, when you started to gather data on women engineer hires in Silicon Valley and place them online?*

**TC:** I think there's been some shifts in the conversation to be less about women and slightly more intersectional, which is positive. It's less about *Let's get some data, map out the problem*, and more, *Now we have data, what do we do to fix the problem?* There have been some exploratory attempts at solutions, most of which have not been very successful, but you have to start somewhere. We've found some programs that work to mitigate bias. Other programs require a lot of effort. You see a bit of gains from them, but they can't be widely scaled; we haven't found very many successful scalable solutions.

So, for example, some companies are doing apprenticeship programs, which are much more intensive on mentoring and onboarding people. It is great to be able to provide those on-ramps for people who aren't coming from the same, traditional feeder backgrounds. But it doesn't work to do that for most of your new employees. You don't have enough bandwidth, practically speaking, to continue building the business and also onboard new people.

So, there has been some slow progress. One big change is that diversity is now a trendy PR thing for a lot of companies and firms. That can potentially be more damaging, because there are a lot of people who are raising this flag of diversity and inclusion and really aren't doing anything. They are actually counterproductive to the movement. This talking too much — without actually achieving — is also inciting some backlash, like some of the men who think it's all "gone too far."

I think progress is going to be uneven. We'll make some forward strides, and then some will try to pull back. On the whole, at least the party line is that diversity is important. If that's what people are saying, eventually we'll start pulling in that direction, even if not everyone feels it yet. I think it's better that people say diversity is important than they say it's not important, even if they're not quite yet there with their actions.

**R:** *The alt-right challenge a shallow form of what identity politics really is, a neoliberal conception of diversity, a flatly marketed idea used as protection by many companies. Ignore our drones; look at our staff. Diversity*

I've talked to people, like Asian male engineers, for instance, who say, *This is all we have, this is the only thing we're good at — why take that away from us?*

I'm like, oh. Our society is really problematic.

*is not just one different person in a room; it's also diversity of thought, engaging in other's difference.*

**TC:** What that's demonstrating right now, though, is that that same group of people co-opting a lot of this language, even "diversity of thought," they will also say, "Well, you're also saying you want biases, but not our biases." I think it falls into the paradox of intolerance. I forget the exact wording. Something like, "We cannot be tolerant of intolerance."

**KR:** That's good. I'm going to write that down.

**R:** *So you create different paths of access, like creating an onboarding process when the resources aren't there. Kate, you put up simple, beautiful, and accessible tutorials for coding. You tell people that coding is difficult, acknowledge what they might be afraid to ask in a classroom. Early programmers championed being an autodidact. When you didn't have access to a great education, you could teach yourself, tinkering in your room.*

**KR:** That idea of the genius tinkering in his room — that is what the programming community is still attached to. It is the ideal. I got into a good Twitter exchange with some statistician lady who was tweeting a seventh grader's homework assignment. It was a puzzle, about laying out five coins, more than a math problem. I said, "Oh, here is why I didn't get into advanced math." Then I never got to take calculus. I studied journalism, and then only later did I find myself programming.

When I tell people that learning to code is hard — my idea is that code is not just for people who have math brains, who are able to see the five coins and make a leap of intuition about how they should be arranged. For most of programming there are still certain areas that are highly mathematical, and machine learning is one of them. But most of programming is about being careful and thoughtful, and actually working well with people. Most time gets lost when someone's not paying attention to what someone else thought was happening.

I'm excited for when programming splits into something that's more like the work of biologists and doctors, rather than just being one field. Working at it and just being good

at your job are really different from being the math genius sitting in a room who can suddenly make Google.

**TC:** That there are alternate ways to think of systems and alternate communities. The more diverse perspectives you have, you have more different ideas of what tech can do.

**KR:** Right. There's alternate ways to judge value in work too. Programming can be something that you can do, if you work hard and get good grades. This tends to be what a lot more women are doing these days. They are going into higher education. This is better than romanticizing a 16-year-old math genius. The field then opens up for a lot of people who didn't think that they could do that kind of work.

**R:** *Which kind of futures do you envision? Are there small moments from the last year or recently even that have made you feel that things are improving?*

**KR:** When things start to go wrong, like with Facebook, we are blaming tech culture and the technology itself. As tech moves into every domain, we'll be able to start looking at the people in power who are making decisions, and how those are having an effect on people. This is not a state of affairs specific to tech, even if the decisions are being filtered down through to technology. We will see the effects of their values on things.

"Values" is the kind of word that I use most now. I'm not just looking at a tech company, because that doesn't really describe anything anymore; I'm trying to find out what's shaping the way that they're making. We'll become more and more able to separate out values, the human role in the making of the tools.

**R:** *So technical brilliance or ideological purity: these are not enough. You need moral intelligence; you need emotional intelligence.*

**TC:** Yes. I think in the last year or two, we've seen a lot of wake-up calls around technology, when it's not designed or implemented well, and those are bad things that have happened to cause us to wake up. I do like that people are starting to have these conversations. There's this one ex-Google who's written really well how chemists and physicists began

*Utopian Promises*

to see how their work could be weaponized, made into chemical weapons or nuclear bombs. They had to grapple with ethics. Those practitioners and researchers started thinking about not just what is possible, but whether it should be possible.

Software and tech so far has not really had that same kind of ethical thinking embedded within it. That will become more of a trend in the future. Hopefully more quickly rather than less. On the diversity front, more people are brainstorming and experimenting and committing effort towards increasing inclusion. We still have a long way to go, but there's some positive change. END

Interview v --- Fred Turner  
Conducted by Nora Khan

# We

Fred Turner is widely considered one of the foremost intellectuals and experts on counterculture's influence on the birth of the tech industry. He is the Harry and Norman Chandler Professor and Chair of the Department of Communication at Stanford University. He has written three books: *The Democratic Surround: Multimedia and American Liberalism from World War II to the Psychedelic Sixties* (University of Chicago Press, 2013); *From Counterculture to*

# are

*Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (University of Chicago Press, 2006), and *Echoes of Combat: The Vietnam War in American Memory* (Anchor/Doubleday, 1996; 2nd ed., University of Minnesota Press, 2001). He is also a former journalist, writing for a range of publications from the *Boston Globe Sunday Magazine* to *Nature*. I was lucky to connect with Turner on a call in Berlin.—Ed.

# as Gods

**Rhizome:** *You've written at length on the New Communalists, their rejection of politics, their attempts to build a pure new world on the edge of society. This ethic was translated into tools, infrastructure, and material for the technological world we are in today.*

*But, as you've argued so well, that rejection of politics, embedded in tools, has given us a series of disasters. To me, it seems the most insidious effect is when this claim suggests more advanced technologies are apolitical, amoral, or neutral. It seems particularly absurd when you start talking about machine vision, predictive policing and their algorithmic phrenology, databases sorting people by their employability, or psychographic maps.*

*I often hear tech-activists and critics decry technology companies' claims that their tools and platforms are neutral. I also do the same. But where does this idea of technology as neutral come from? Is it similar to how business leaders claim the market is amoral?*

**Fred Turner:** Well, I'll speculate, and I hope it'll be useful speculation. There are a couple of sources. One is chronologically proximate, and one is probably a little bit more distant. The proximate one remains professional engineering culture and its educational system. Engineering education is a system in which explicitly political questions are generally relegated to other fields entirely: political science, sociology, history, English, and on down the line.

The practice of engineering is too often taught as if it were simply the design of functions, the design of things to do things. It's sort of an explicit ethical choice, inside all parts of the field, to leave politics aside. (Although I think that's changing.)

This means you'll get people who tell you, "It's not my business whether the bridge is good or bad. The bridge has to work. The bridge has to hold up." That's the goal. That whole tool orientation is a pragmatic, self-serving vision inside professional engineering training. It's been there a long time.

There's a deeper thing that goes way, way back to the early modern period. It's about where the seat of the government is. In the era of kings and queens, government resided in the body of the monarch. Technology was an implement through which the monarch got the job done, but it was only an implement. The power to rule was in the blood of the monarch.

Kings and queens would demonstrate their organic power by building automata and staging amazing mechanical expositions in their courts and gardens. Chandra Mukerji of UC San Diego has written a beautiful book on the Gardens of Versailles and how they were, essentially, models of royal power. But they became models of royal power when Louis XVI demonstrated technology. The power itself resided inside him. The political was the king, the inheritance, the social role around the king, the court. It was people. As we look through time, I think that idea of politics being people gradually morphed and became attached to the idea that politics could live in writing. Politics is what we say and do. Tools are, by definition, things that help us say and do that, but power is, itself, something deployed by living beings, in person eons ago and later through letters and printed proclamations.

Today, thanks to Marx and especially Foucault, we think about power and technology differently. It's Foucault who teaches us about governmentality. More recently, most everyone in the academy on the social science side has had some encounter with the study of science and technology, particularly, actor-network theory in which it's always a social actor.

There has been a whole lot of work bringing things back into the social world, and that's just work that's been done since Foucault, Bruno Latour, and all the different folks that they've worked with in the United States and Europe. The question of why technology is consid-

ered neutral is only possible because we've had that last two generations of scholarship.

**R:** *And it gets more tricky when such effort is invested into maintaining an image of the tool as neutral. Many of the engineers and narrative designers who are sitting in these rooms are perfectly aware that you are persuading someone to feel and think. The design of technology hides its political imperatives by presenting as neutral.*

*It seems the most accessible and powerful example of this is narrative and conversational design, mediated through bot and virtual assistants and interfaces. You have poets and playwrights who are brought on to write bots, creating soft and pliable brand personalities. Add to that psychologists, cognitive linguistics scholars, and, of course, captologists, trained in the study of persuasive design — hey, a department based at Stanford! — channeling a carefully targeted design through interfaces.*

**FT:** Here's where you can see that wonderful migration of the material engineering position, a position born out of mechanical engineering, with physical engineering migrating into social engineering software unconsciously. It makes the migration by moving from thing to text.

So, when an architect or a builder builds the building that constrains the behavior of the people in it, everybody's happy; that's the point. Building objects that constrain behavior in benevolent ways is what engineers do. It seems that way, I think, to many folks who imagine and think of themselves as engineers. (There's a whole other question about whether programmers are, in fact, engineers.)

But if you take it seriously, that these are too, engineers, then the notion of moving from a physical architecture to a nudge architecture\* isn't such a big leap. The notion is that the option of benevolent influence through infrastructure, or team design, seems a pretty reasonable choice.

But, of course, it isn't, right? Because text and interfaces — interfaces being symbolic structures rather than material ones, although they have a material base — they work differently. They have different kinds of effects. They get inside us in different ways. If I have a material wall in a building and I just walk into it, it says, "Oops. Now it's soft; can't go that way." "All right, no problem." Nothing sort of inside me has really changed.

But a nudge infrastructure that changes my desire such that I desire a red Popsicle, not a green Popsicle — that's different. Once it starts to change so that I desire a baby made with brown hair, because we need more babies with brown hair, what happens then? You can walk down that line very quickly.

The next thing you know, you're deep in an Orwellian swamp. Engineers barely think about that swamp, because building architectures for benevolent influence is what they do.

**R:** *Relational AI is another swamp, building a mind that is mirroring our consumer desires back to us. It's becoming more difficult to see this design, these tiny incremental micro-adjustments to interfaces and infrastructure. So how can the average person understand and track this process, especially when a company's design thinking is proprietary, locked away in a black box? How is the average person to begin to demand ethical design or legible design? Other than, say, mining the brains of tech workers who abscond to activism, and tell us what's going on inside.*

**FT:** Oh my gosh. That's the \$60,000 question. You probably know Tristan Harris?\*\*\* That's one of the questions he's trying to answer and I'm going to put my money on him. I don't have an answer to

that question, but I do have some comforting historical context to offer.

We are building these kinds of mirror systems, these mirror minds, that reflect our desires, and then act on them. I think what's different about them compared to historical examples isn't the mirroring part, so much as the mode of interaction.

★ Everything that you just said about the AI, with the exception of how we interact with them, could've been said about the Sears Roebuck catalog in 1890. The Sears catalog was a desire analogy, a desire mirror that was carefully tweaked. The products were carefully removed and inserted to produce desires in people on the prairie and to give them means of satisfying those desires.

It also gave them the means of interacting with Sears as a company. What's changed since then is the speed at which the interaction between the user and designer occurred, as it does now in virtually real time. The catalog had to be mailed out and read, and purchases had to be made. The speed was months and years. But people were as disturbed at the end of the 19th and in the early 20th centuries by the arrival of new kinds of media in those periods as we are about AI. Many of the fears that we have are very similar, the mirroring one being a leading one.

**R:** *On our survey, we asked a question about Openwater, a consumer wearables startup that's trying to develop a ski cap to "read your mind," using data about oxygenated blood flow to the brain to read desires, thoughts. This is a claim made by the founder, formerly of Facebook and Google (an expert engineer around holograms, high-pixelated screens), onstage at conferences. She calls this move toward mind reading inevitable, a statement made with total confidence, and very little irony or pause.*

*What is at play in some of the more possibly ethically dubious inventions in Silicon Valley? Is it a drive to own all human "territory," inside the body and out? I also think of the archetype of the White Hat Hacker, the lone genius with access to code that no one understands, who knows what is best for society. The unknown may seem terrifying, he says, but you'll soon see.*

**FT:** I think that's absolutely what's at play. I was struck in the late '90s and early aughts as some of these early systems were being built, by how many of my friends would say, "Oh, you worry too much. The good hackers will protect us. People will crack open those systems. We've all cracked open other things." And that's tremendously naive. It's part of a deep prejudice in American thought. Americans tend to think in terms of individuals. They tend to not think in terms of institutions.

One place that it happens is in how we read what we can do with technology. We think, "Sure, big systems may come along, but individual rebels always triumph." That's part of our deep cultural narrative. "And it'll happen here, too." It's a way in which that same cultural narrative gets taken up by engineers — and you've just given me a fabulous example of that happening onstage — where these folks imagine themselves as the archetypal American frontierspeople. The nature of the frontier to be conquered is irrelevant; it's the conquering that matters. The actual westward push of Europeans stomped all over native peoples. Now, you see people like the founder you just described, quite happily marching across our brain space as though it was just the latest in open, organic American fields to be conquered. We're the natives in this story and that's terrifying.

**R:** *The brain is just more material to examine and absorb. People are raw material. Code to be unlocked.*

**FT:** Exactly. The brain is just another material. There's a lot of deep

American mythology at play. That declaration about wanting to read your mind: it is a classic case. One of the things I'm most interested in these days is the ways that technologists are thinking like the early American Puritans, who were my first intellectual love.

**R:** *There's a lot in your "Don't Be Evil" interview for LOGIC that I really enjoy, particularly your moments of reflection at Burning Man. You traced a line from this desert excess back to a more Puritan, deeply American idea of the restart.*

*There's a religious zeal in wanting to restart society from zero. I visualize this in terms of the simulation. If you can build a world from scratch, you can also build a person without history or politics.*

*This seems optimistic until you realize that what some designers are hoping to get rid of are the more "troublesome" aspects, like race or gender or history. They are modular add-on features that can be removed. That is an ideology. It now drives social engineering and corporate-driven city planning and design. San Francisco is a good example.*

**FT:** There's long been a lot of traffic between urban designers and game designers, even before things got digital. I find that fascinating.

You are saying something that I want to pick up on, because I think it's really important: this idea of building a person or a place without a history. I think that's a deeply American idea, because we leave the known. We're supposed to be the country that left Europe. We're supposed to be the country that left the known.

Why did we leave the known? Well, so we could become the unknown, the people without history, the people without a past. When you leave history behind, the realm that you enter is not the realm of nothingness. It's the realm of divine oversight, at least in American culture.

When the Pilgrims came to Massachusetts, they left the Old World behind so as to be more visible to God. The landscape of New England would be an open stage and they would, under the eye of God, discover whether they were, in fact, the elect: chosen to go to Heaven after they died.

No technologist today would say they're a Puritan, but that's a pattern that we still see. We see people sort of leaving behind the known world of everyday life, bodies, and all the messiness that we have with bodies of race and politics, all the troubles that we have in society, to enter a kind of ethereal realm of engineering achievement, in which they will be rewarded as the Puritans were once rewarded, if they were elect, by wealth.

The Puritans believed that if God loved you enough to plan to take you to Heaven in the end, He wasn't going to leave you to suffer on this Earth before you came to Him. Instead He would tend to make you wealthy. Puritans came to see that as a great reward. Puritans, and broad Protestant logic, deems that God rewards those whom He loves on Earth as in Heaven.

You can see that in the West a lot now. Folks who leave behind the social world of politics and are rewarded with money are, in fact, living out a deep, New England Puritan dream.

**R:** *The city on a hill. The early settlers on it, looking down at the wilderness, mapping civilization. This idea of having a God's-eye view of society maps a bit onto building of the simulation or the model. Being a world builder means you can position yourself as neutral, as the origin, which is an amoral, evasive point which you can never really capture. It vanishes.*

*But there are a remarkable amount of coders and programmers thinking, in terms of ethical design, who want to help us visualize a world with history and politics. Do you think ethical design could help us do that? Is that an imperative that is useful now?*

**FT:** I think everything helps. I think that what we like to call ethical design — well, you have to think very hard about whose ethics are built into the system, and how people have agency around that. This is an old lesson in science and technology studies, that if you build a road that only accommodates cars, then only people with cars will be able to ride on it. You may value independence, and you may see that as an ethical choice, but it may be that some people don't even have access to that ethical framework because of the kinds of lives they lead on the material plane. And then, you're stuck.

I've always found it very hard to think about any system, any planned, top-down system as, by definition, benevolent. The best systems and institutions are constantly focused on negotiation, on structured negotiation. So, the best institutions are places that have a constant system of checks and balances.

My idea of utopia is actually a hospital. [Laughs] A hospital is a place where people get together, work very hard over very long periods of time in defined roles, checking and rechecking each other's work, and they work toward a benevolent goal of saving lives. If you were to build a society built along similar lines, hopefully not one where everybody wears scrubs and white jackets, that starts to be a better place. So, the building is architected, so the systems are architected, but the negotiation is constant. That's what I'd like to see.

**R:** *That's lovely. I think of how Kiyoshi Izumi redesigned psychiatric wards in Canada after dropping acid. The caged-in architecture, the lack of privacy, of clocks, the barred, high windows like a prison; Izumi felt how distressing and inhumane it was. The ideal mental hospital valued privacy; patients had soundproof rooms with unbarred windows. Sources of perceptual distortions, like silhouettes, terrifying to someone with mental illness. Patients had less distress in this communal space driven by a different set of ethics, one more compassionate.*

**FT:** I want to riff on that for a second. If we go back to that question of these neutral worlds, if you act like a God and build a world that doesn't take account of differences, but rather tries to neutralize them in a single process, or a single code system, or under a single ethical rubric, what you end up doing is erasing precisely the kinds of differences that need to be negotiated.

So, it may look like a benevolent system to you. In fact, a form of a truly benevolent system is one that, I think, allows people to negotiate the distribution of resources across differences. That's a very difficult problem politically. That's what politics are for. You can help with those negotiations. If you can help people work with those who are different from themselves, you're better off.

**R:** *And this seems even more difficult to accomplish when diversity and identity politics are embedded in corporate marketing. I'd like to talk about your new piece on the aesthetics of Facebook, on the play at diversity and identity politics without ethical follow-through. There's a perverse contrast between the poster at their Menlo Park headquarters asking visitors to "Take Care of Muslim/Black/Women and Femmes/Queer Latinx ..." and so on, when there are no unions in sight. I'm guessing the hiring process would suggest some realities that are not quite aligned.*

*What is the danger in this flattening, this validation of diversity as a cover for violation? The image of counterculture, progress, transformation — these are very seductive images to imagine oneself embodying. How are people to stay alert to the difference between iconography and action?*

**FT:** We've done it differently in different eras. There was a lot of work to help people resist propaganda in the '30s and '40s. There were whole institutions formed to do that. There was a lot of work to help people resist the rise of commercialism in the '20s.

But something has changed since then: Individualism and attention to identity are sources of elite power right now. Facebook's mission is entirely consonant with identity politics. It precisely helped people break apart identities and become even more factional in identity. They give clear terms for this expression, they just market those expressions back. In those kinds of differences are exactly the kinds of market segments that matter to them, the segments that Facebook wants to monetize.

The focus on identity is one of the keys, I think, to being an elite American these days. That's part of where you see the backlash in the South of Trumpism. When we focus on identity, we focus on different modes, what you're describing, rightly, of market segmentation.

What we lose track of is just raw poverty. **Modes of separating that are geographically based, modes of separating that are age-based, modes of separating that have absolutely nothing to do with our race, our gender, or our ability to express our identity diversity.** Those are all important issues. I don't mean to knock those at all, but to the extent that elite Americans focus on identity diversity and look to that as a way to make solutions to the problems they're seeing — they're going to get stuck.

The way that we fix a Facebook is not by learning to read its representations more effectively. It's by using the democratic institutions that we have. We have to recognize that it's a company, not a system of conversation, but a for-profit firm, and then subject that for-profit firm to precisely the kinds of regulation from the state, elected by the people, that we apply to car companies, to architects, all the other industrial forces in our lives.

We have to recognize that Facebook isn't special. Weirdly, to do that, we have to start recognizing the identity itself is not special and above the political fray. We need to do our politics through institutions. We need to return to that old, boring style of recognizing differences and negotiating across them.

**R:** *It's the core setup of neoliberalism. You find many first-generation immigrants who are leftists or socialists have great, serious critique of neoliberal identity politics. This position isn't the same as not valuing the expression of identity; it's a critique of how the expression of identity alone syncs so well with the financial imperative of platforms.*

*I don't see identity politics addressing the real material issues of our time, like how racial capitalism intersects with city planning. I see perfectly expressed identities in fiefdoms, without any politics on which we can agree, or a space in between in which we can gather together to effect material change.*

**FT:** Yes. That's exactly right. Facebook's power blew me away. The poster that bothered me the most in Facebook was a poster of Dolores Huerta, who was an organizer of the farm workers. She's still alive. You'll know that she was one of America's greatest union organizers in the 20th century. And Facebook is a company that has relentlessly resisted unionization.

Some of its contract workers are unionized, but that's it. So, you have to wonder, why is a company not just tolerating, but promoting the image of Dolores Huerta around its place? Part of the answer, on the part of the designers, is trying to help workers appreciate that there's a diverse world out there, and they need to be in touch with it. Fair enough.

*We're supposed to be the country that left Europe. We're supposed to be the country that left the known. Why did we leave the known? Well, so we could become the unknown, the people without history, the people without a past.*

ZUCKERBERG

CHURCH

UTOPIA

But I think that a poster of Dolores Huerta only works inside Facebook if nobody remembers what it was that made her Dolores Huerta. So long as you can turn her into an image, particularly, a Latina female image inside of a firm with a dearth of Latina females, you sort of check that expressive political box, then carefully uncheck the institutional box of unionization or making institutional change, that would actually distribute resources to the communities she represents.

**R:** *It's unbelievable. As long as her image means nothing in particular, then it means just as much as any other image.*

*So then, this support for full expression overlaps very neatly with support for "unfettered creativity" and experimentation, so, art. Who wants to get in the way of people living their passions? Art's status as an unarguable public good, makes it a powerful space for pushing ideology.*

**FT:** Oh, very definitely.

**R:** *Without tipping into institutional critique, how does this ideology of creativity, at all costs, change the kind of risky, experimental, challenging art that can be made?*

**FT:** Let me address the issue of creativity. Certainly, inside Facebook, one of the reasons that they have art everywhere is, I think, to remind programmers and engineers to think of themselves as creative people. Ever since the Romantics, the creative individual has been an American icon.

But the kind of creativity that's never gotten any attention is working class creativity. Do you know how creative you have to be to be a single mother with a below-poverty-level income, intermittent access to food stamps and food, some job or no job, and be able to make a living, and make a family stay together?

That's the kind of creativity, the kind of MacGyvering, that engineers just never think about. It's not even on our radar with regard to creativity. We talk about the ideology of creativity, and what we're talking about is an elite theme, an elite hope that we engineers, we who architect this new surveillance reality are, in fact, the descendants of Walt Whitman, the descendants of the artists in the 19th century, descendants of American romantics. That's just hooey. In the meantime, as we pursue that vision, we very carefully elide all the modes of creative action and interaction that sustain people who don't have the resources that we have.

Notice the language I'm using. I'm very carefully not using identity-based markers for those people because what matters is their economic standing or their regional location, the fact that they may be the children of woodsmen, who can't move anymore because the logging industry is dead. These are folks who are living lives below the poverty line, in sort of post-industrial spaces that don't look like Silicon Valley, and there's some of them living in Silicon Valley. The whole rhetoric of creativity explicitly ignores them. It says to be creative is to build media goods that generate a profit and to have fun doing it. Bah! [Laughs]

**R:** *It is totally destructive to critical thinking. Creativity is for making media goods; criticism is in this way threatened by the ethic of technology and engineering, which demands we produce sense, or consumable, working ideological products. But successful art might be, sometimes, useless, or critical of labor. Actual dissent, not just an aesthetic of dissent.*

*How do you see "Silicon Values," as critic Mike Papi writes, shaping our relationship to art? He describes how art is deployed as a vital tool through which to push technological business models.*

**FT:** Let's step back and ask, what is tech, in regard to art? One answer is that the tech industry can be the sponsor of art. In that sense, it's a lot like the Catholic Church. When you ask me about artists at Facebook or artists at large companies or artists working with technologists, I think about the many generations of artists who worked with the Catholic Church from the early Middle Ages on.

Now, the Church is a complex institution. It has been the home of the Inquisition and its leaders have ignored and even hidden acts of child abuse around the globe. Yet the Vatican is also the place where Michelangelo paints the Sistine Chapel. The beauty of the Sistine Chapel, or of Michelangelo's paintings, are not reduced by their appearing under the sponsorship of the Church. The best art, I think, can outlive the circumstances of its creation.

I think we also sometimes imagine that art is immune to the forces that drive every other thing that we do. It's immune to commerce. It's immune to greed. It's immune to failure. It's immune to ugliness. It's immune to collective pressures. It's always the product of an individual mind. The hope that we could have an art that would be outside the industrial world, which is so clearly driven by tech, is a little naïve.

That said, I've seen art inside Facebook that has dazzled my sensorium. Truly, I've seen art using and leveraging devices created by people in Silicon Valley at places like the San Francisco Museum of Modern Art, and marveled at the beauty and the way that it makes me rethink what the natural world might be.

So, I absolutely think that art and tech can go together and can help produce art that will, in time, eventually be seen as being as beautiful, as valuable, as the Michelangelo paintings were seen by the Church, or as landscapes sponsored by hideous patrons eons ago might be seen as beautiful today. I don't think the sins of the sponsors necessarily ruin the experience of the art.

**R:** *And then there's the second kind of art doing the support work, the oblique shilling.*

**FT:** Yes. Art doing the work of tech legitimation. I hear, a lot of times, that we need to get artists and technologists together in some space, because the technologists will be able to show the artists their tools, and the artists will be able to adopt the tools to come up with creative new uses. The technologists will, in turn, be able to monetize those uses in terms of new products. This does, in

fact, sometimes happen.

In the artist-technologist collaborations that I've looked at from the '50s and '60s, the work that went on was primarily ideological. Collaboration helped everybody imagine that they were creative, that they were making something valuable. It made it possible for engineers who were building our media and communication systems, the Bell Labs sound system, or the engineers working at NASA on rocket engines that would send things into space, or people working in Silicon Valley on Polaris missiles, to imagine themselves as the same kind of exquisitely sensitive and culturally elite person that, say, a John Cage was, or Robert Rauschenberg was.

By the same token, Rauschenberg and Cage and others who collaborated with technologists in that period, were able to get new ideas, get money, and borrow some of the legitimacy of the engineers, who were winning the Cold War at the time. I think we see that now. I think we can see artists borrowing legitimacy of technologists, and then taking their money. We can see technologists borrowing the legitimacy of artists, and taking their ideas.

I think it's a mutually beneficial relationship so far.

**R:** *At present, the Whole Earth Catalog, chaos magic, and mysticism, of the kind expounded on in Erik Davis's Technosis, are seeing a strong resurgence within tech. It seems to me there's a feeling that it is possible to go back to the original idea, that computers and platform can, yet still be mediums for liberation, rather than platforms for control.*

*So. What would a Whole Earth Catalog for our time look like, if we learned from past failures?*

**FT:** Yeah. Hm. Oh, boy. Well, if you ask some of the people associated with the actual *Whole Earth Catalog*, which I've done, they will tell you it would look like Google. It would be a global system for an individual to search out the things that individual needed to build a life on their own terms. I think that's fine.

But I think that definition misses the key part of the *Catalog*, which is the way that it didn't actually sell goods. It printed recommendations for goods.

The recommendation letters came from people living on communes at a time when the only way to know what communes were out there in the world, was to get on the telephone or use snail mail letters. The *Catalog* become one of the first representations of the commune world. It was a map. Embedded in all those products was a map of all the different communes that were using and recommending them.

So, the thing that I would like to see, that I don't think Google is, is a map, a kind of map of an alternative kind of society, a better kind of society. I don't think the *Whole Earth Catalog's* mapped a better society, but they tried. Can we see a map of alternative communities, communities that are taking things in different directions — not just, Can we search using digital tools for tools that help us lead our life the way we want to? I mean, that just sounds like the L.L. Bean catalog on steroids. Can we identify communities that are taking us in directions we want to, map their interconnections, and find some way for ourselves to search our way into new kinds of community, and new kinds of institutions? I think that's what I would like to see.

There's something I've always held against the *Catalog*, and that's its individualism. The opening sentence, you remember, in the front of the book, is "We are as gods, and we might as well get good at it." The sentiment, We are as gods, in the *Catalog*, meant that they were able to take the products of industrial society, and put them to work for individual purposes in what Stewart Brand called "a realm of intimate, personal power."

To the extent that we imagine the politics take place in the intimate realm of personal power we're going to get lost. We're going to keep building interfaces that allow for expression, that allow for the extension of intimate personal power, and we're going to precisely not do the work, the boring, tedious, structural work of building and sustaining institutions that allow for the negotiation of resource exchange across groups that may not like each other's expressions at all. So we have inherited from the *Whole Earth Catalog* a language of individuals, tools, and communities, which we've translated, I think, in tech speak, into individuals, communities, and networks. I would like to see a language of institutions, resources, and negotiation take its place.

**R:** *Beautiful. I'm going to go walk around in the woods and think about that.*

**FT:** There's another thing hiding in here, under the *Catalog*, an idea that the counterculture and neoliberalism share: If you just free people up and build a market structure, things take care of themselves. What this idea ignores is the persistence of subsidies, of regulation, of shared state resources, of things as basic as roads and bridges. If you don't tend to that subsidy, you can't have any of the other freedoms.

So, that's what we need. We need to be alert to sharing and sustaining our public resources.

**R:** *Artist Caroline Woolard speaks of this as a defiance of the academy's teachings. This generation, she says in a recent Brooklyn Rail interview, is one of artists that makes cultural organizing, community arts, and advocacy a central part of artistic practice. To rebuild that degraded civic spirit, artists can't be disengaged.*

**FT:** Well, I think a lot about Eastern Europe during the Communist era and how artists dealt with that. Some artist became critical. Some artists became politically active. Other artists just wrote beautiful stories.

I do think there's a role for disengaged art in a moment when otherwise our lives need to be engaged. I think there's something to be said for laying aside objects of beauty for when times are better. I've spent the morning today at the Gemäldegalerie in Berlin looking at early Renaissance paintings, filled with violence, but also stunningly beautiful.

Alongside these kinds of political paintings were all these little portraits that the artists did, just people's faces from eons ago, totally disconnected from the politics of the time. They were just interested in the subjects' physiognomy: their hair, their skin, their noses. Those faces come down to us as emblems of the kinds of connections we can make with each other across time that aren't political in any direct, immediate, historically specific sense, but are the most deeply political in that they offer us a vision of seeing each other with love. That's something that the arts can do almost uniquely, but they can only do it, in a weird way, when artists stand a little to the side of the political fray. END

\*Ed. – Nudge or choice architecture is a development of behavioral science, in which consumers are "nudged" to make socially desirable choices, like eating better or recycling.

\*\*Ed. – Harris is a former Google Design ethicist and founder of non-profit Time Well Spent, aiming for development of ethical design standards in tech.

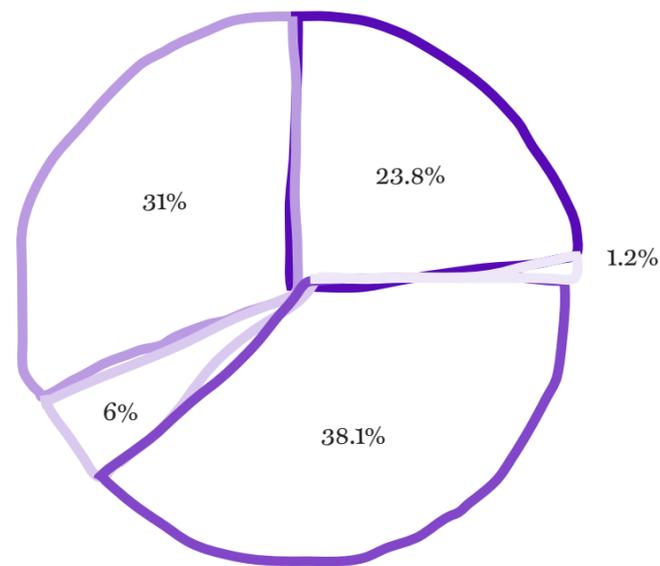
7x 7: Fig. 1



*GIPHNOSIS* for Seven on Seven in 2014 by Paul Pfeiffer and Alex Chung. One of a collection of downloadable GIF screensavers "to reprogram your mind."

Utopian Promises Fig. 3

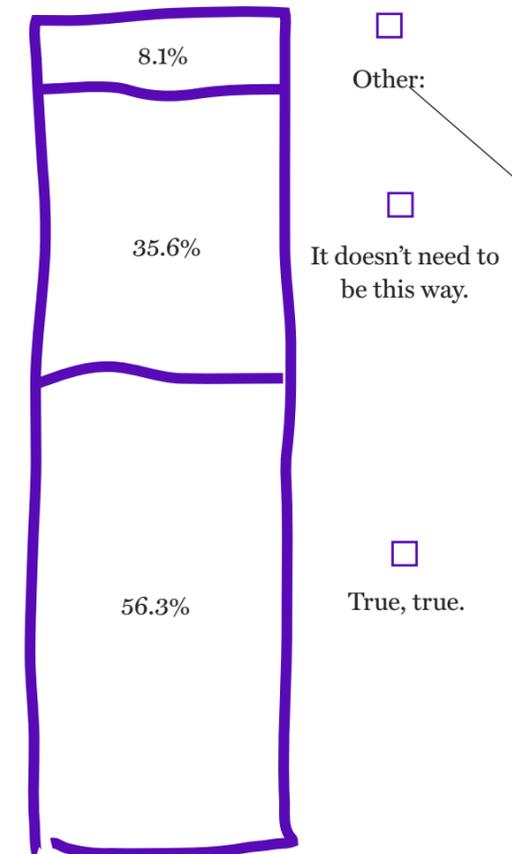
I am willing to endure social engineering through technology as long as it doesn't really affect my comfort or position in society.



- I don't care about maintaining my comfort or position; I try to resist any form of social engineering where I can locate it.
- I am fine with it. I know subconsciously that I benefit. I am safely allowed a moral alibi, to profess care for those below my position.
- It's too late for us to do anything about the social engineering effected through technology that is already well in place.
- I really don't want to think about this.
- I don't care about my comfort or position and try to resist any form of social engineering where I can locate it

Utopian Promises Fig. 4

Dominant technologies will continue to exacerbate preexisting inequities while packaging every move as innovation, and progress.

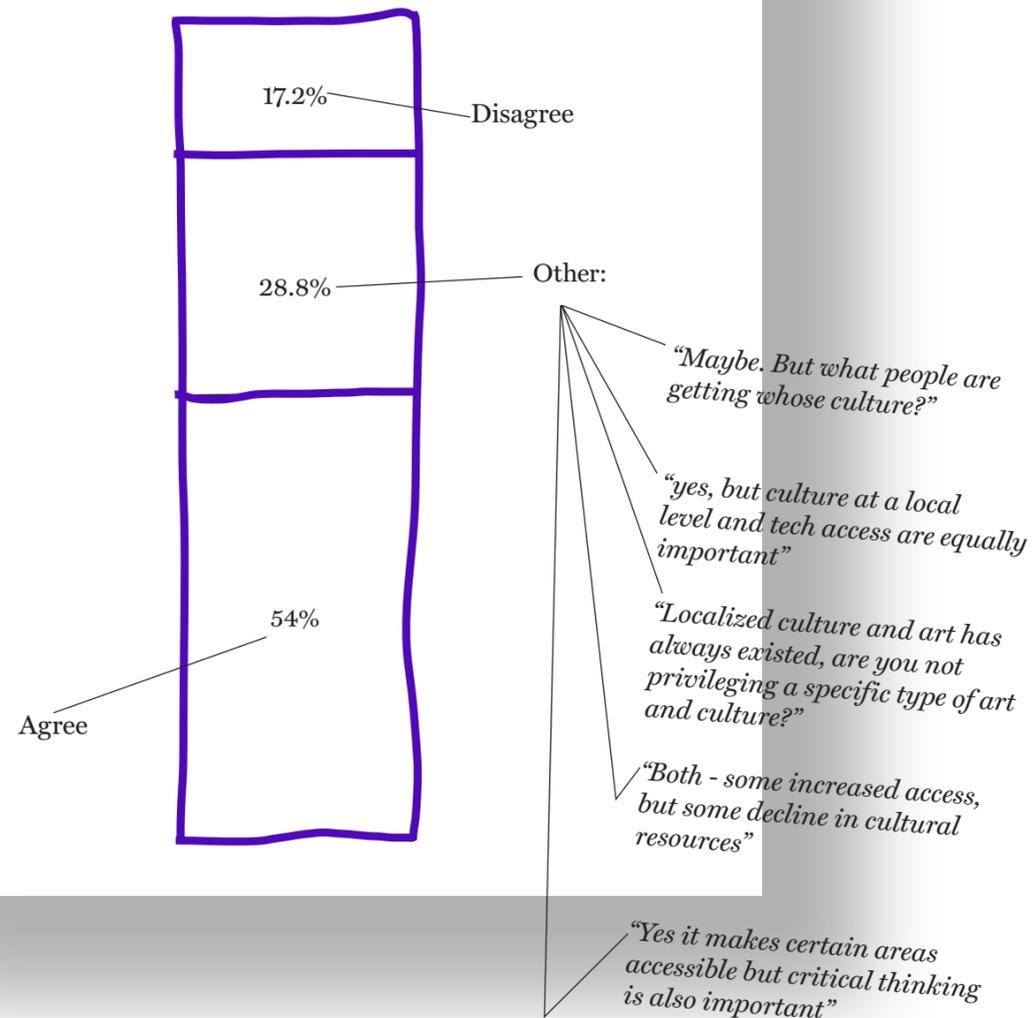


- Other:
- It doesn't need to be this way.
- True, true.

*"I think reality is more nuanced. Something like Conway's Law may be more accurate."*

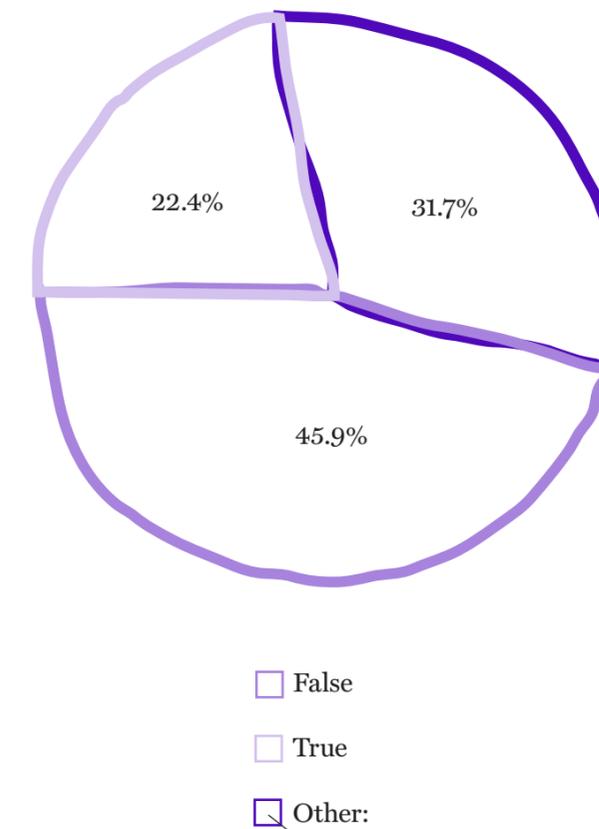
Utopian Promises Fig. 5

But wait. Digital technology will also redeem the humanities and education. It gives more people with less privilege greater access to art and culture.



Utopian Promises Fig. 6

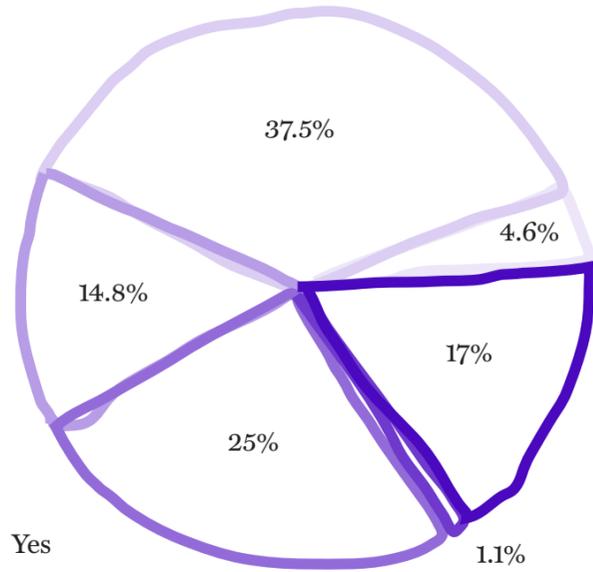
And the likelihood of a startup solving social issues before government is very high.



“Both will continue to suck under capitalism and greed disguised as innovation and social consciousness.”

Agency & Control Fig. 2

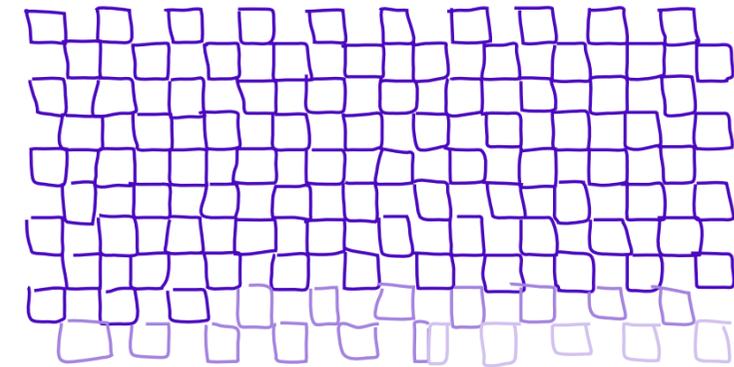
Platforms should be responsible for the content posted by users. Platform owners have an obligation to make terms of service clear, and must clearly describe what happens to one's extracted (volunteered) information.



- Yes
- No
- They should be, but it won't happen, when the business model depends on harvesting information with a very long, loose leash.
- It's unreasonable to expect companies, which are fundamentally amoral working in an amoral space, commerce, to have ethical responsibilities. Only regulation can achieve this.
- It's more complex than this question suggests.
- Other: *"I feel no ownership of 'my' data. This whole political battleground needs to be re-framed in less neoliberal 'paypall me for me emotional labor' way than is presently in vogue"*

Agency & Control Fig. 3

Most communication platforms can be considered "neutral."



- True
- False
- Other

WORDS IN THIS CHAPTER    END

GENIUS    FEMALE    THAT    PERCEPTION

“...to better recognize and understand the entanglement of power, automation, simulation, and algorithmic media, we need to equip ourselves with new tools and techniques. We need to train ourselves at the outer limits of perception.”

# Performing the Feed

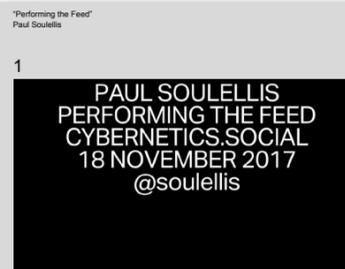
*Paul Soulellis has been Rhizome’s absolutely vital contributing editor for a few years now, generously applying his expertise in experimental publishing to deepen our reach into theoretical practices through the Download series he curates, “an ongoing series of artist commissions that considers the ZIP file format, the act of downloading and the computer user’s desktop as a space for exhibition.”*

*Soulellis delivered this talk, Performing the Feed, at the Cybernetics Conference, held in November 2017, alongside Wendy Chun, Shannon Mattern, Adrian Chen, McKenzie Wark, Mimi Onuoha, and others. Soulellis was thinking around the creation of Printed Web 5: Bot Anthologia, which he edited. (The Library of the Printed Web is an archive of web-to-print artists’ publications founded by Soulellis, that has been acquired by the MoMA Library: <http://printedweb.org/>)*

*In an earlier version, Notes on Feeds, Soulellis walks through the aesthetics of*

*digital feeds — Twitter bots, live streams on Twitch and YouTube. Notes took shape as a talk at Interrupt 4 at Brown University, and physically as a newsprint wrap pre-viewed at the NY Art Book Fair. In Performing the Feed, Soulellis takes a step deeper in, helping us historicize and theorize the feed. What does it mean to make ourselves public through it?”*

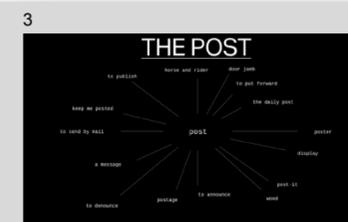
*This question is probed by the thinkers in many of these pages. Performing posits the feed, like the Instagram Eye, like the drone’s perspective, as an entirely new kind of event that demands a new language. What does our agency and control look like as we consider how information now flows to us and away from us, in an endless scroll, in which we move toward a feeling of limitlessness? As we move effortlessly between human and non-human perception? Somewhere between us and the algorithmic sits our compulsive and unique ability to interrupt: to archive, to document, to contextualize, and to see and think actively. -Ed.*



I wrote this talk because I approach network culture through the lens of experimental publishing and publishing as artistic practice, and I see that lens shifting dramatically right now, as algorithmic media and the network become more and more entangled. *Making public* is expanding into a new array of gestures and performative conditions that need to be examined and theorized, perhaps as a new paradigm. So this talk is my attempt to work something out, in real time, and I would love feedback.



I'd like to start with the post — the blog post, a news story that's been posted, a posted tweet. I see the act of posting as one of the foundational gestures of making public. Especially now, when we have an expanded field of publishing that includes anyone with a device who can amplify to the network.



Looking for the origins of the post — where do we get this gesture, the word, its meaning? I don't have any conclusive evidence, but the post appears to have a long trajectory that points towards something very basic and physical — an actual wooden post. The poster, the post office, the daily post, keep me posted, and even the post-it — all of these are ancestors of the town crier,



who, after reading proclamations in public, at the center of town, would nail the notice to a door post, in a visible place.

Posting a notice was a kind of evidence of news, the residue of a performance.

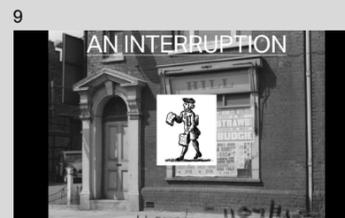


This is the act of physically placing language on a vertical surface, in public space, and it's here in this gesture that I like to look for the origin stories of publishing — of making public.

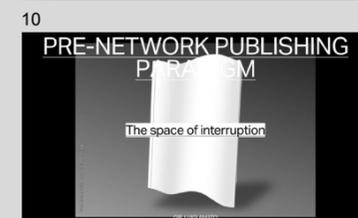


That's all pre-network. Whether it's posting — or dropping, or stacking, performing, or just handing a pamphlet to someone —

dispersing messages in public has always been a signal that needs to read apart from the noise — a kind of interruption.



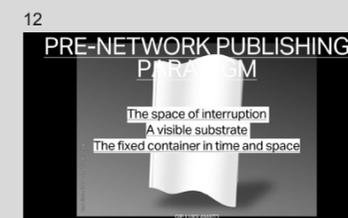
This is a gesture of disturbance, a break in the pattern, or the line of sight — an announcement that draws attention through materiality, addressivity, and difference. It's not always a radical disruption, but for a public to form around a work that circulates, it needs to ask for attention.



Maybe we can define this as the old publishing paradigm, and I really mean publishing in the broadest sense — a post-like gesture, built on the material condition of the interruption.



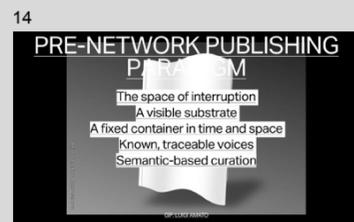
At its most basic, this usually involves a visible substrate, with clear markings that result in a record that can circulate.



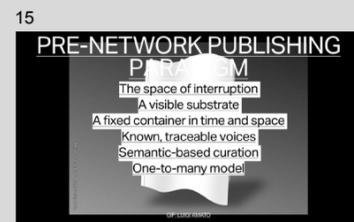
The idea of the fixed container in time and space — carved stone, a poster, the book object, the printed page.



Known, traceable voices, whether it be the individual author, the publisher, or an institution, performing traditional narrative structures.



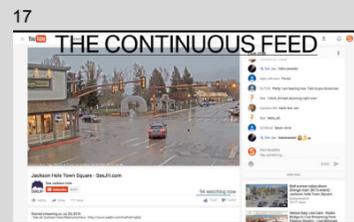
Semantic-based curation — material that's been meaningfully selected by humans around its capacity to assemble publics and generate discourse.



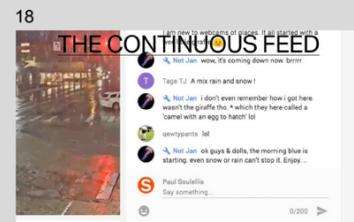
usually following the one-to-many model — a single source, duplication, and amplification.



Recently, I've been paying attention to another kind of making public, to posted information that seems to fall outside this paradigm. I'm talking about feeds that never end. I've become addicted to watching Twitch streamers, who present themselves watching, or gaming, or doing nothing at all, sometimes for days at a time. What kind of an event is this... is it publishing? It's performative and it's certainly making public, but it's less like a signal and more like noise; a durational time-space that forms around the image, as it circulates, and it seems to go on forever.



These are broadcasts, but not the 20th century kind — they require a new kind of watching. The story is never resolved, because it doesn't develop; it's simply a constant becoming. In the space of the live-streaming cam, it's not the singular act of posting that matters, but the ongoing, continuous transmission of minor events. And frequently, these cams command a sizable audience.



Rob Horning refers to this as the new boredom — a state of watching-togetherness. We're interested because others are watching, and the feed allows us to enter a state of pure reaction, in the moment, together. But because feeds are usually live, we come to them expecting a surprise. Something could go wrong. The continuous feed feeds our need to watch, but also to bear witness, to capture, and to judge. These are politicized spaces, where it's easy to find bias, bigotry, hate speech, and injustice.

As our tolerance for surveillance increases, what it means to watch has shifted. In the new boredom, Horning says, we desire a sort of 'god' view as a collective subject, becoming the they who does the observing, instead of the me being seen. Our new position might feel safe, like a kind of removed resistance. A soothing counter to the police state.

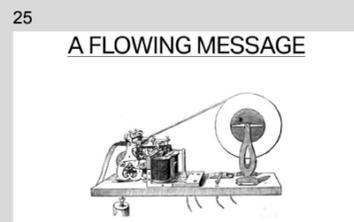


But keeping us watching is part of the deal. Pure, passive consumption — that somehow, at the same time, feels active and powerful. A reverse panopticon, where

we participate in the very structures that oppress.



Social media is where the new boredom thrives. I might be watching feeds alone, but I share them with others in my network — building up a collective subjectivity that includes family, friends, and strangers. We keep feeding each other the feeds.



The history of the feed is the history of electrical telegraphic transmission. The earliest examples of a feed trace back to the 1840s, after telegraphic printing began to evolve.



The very first streaming cam, in 1991, was aimed at a coffee pot. The most boring of scenes that signaled the start of a new kind of distanced watching.



Today, the coffee pot watches us. And we watch each other. In public and in private spaces, and in our own homes.



This condition of endlessness fuels our addiction to social media, which is built on the feed, a compulsion to add to them, to stay connected through a never-ending flow of published posts. Feeds are constant, and they don't stop. Because we don't know where they end, they might as well be infinite.



And when we participate in the feed we become entangled in a mix of human and non-human voices. Never-ending streams of recommendations, driving directions, delivery notifications, warnings, live events,



bot chats, and other forms of information flow that require new kinds of attention and trust. In this twitch livestream, a neural network trains itself to drive in a GTA mod, while humans and bots comment and control the driving conditions together, from the chat.



If the post announces itself as an event, and asks for our attention explicitly, the feed pulls us into a flowing state of new boredom semi-awareness, something that feels like a texture.



Could publishing be like a texture? Is the persistent flow of human and non-human writing that travels into and out of our devices, like an ambient background noise, the flow of real-time feeds & streams that operate almost like an atmospheric state — is this a new paradigm?



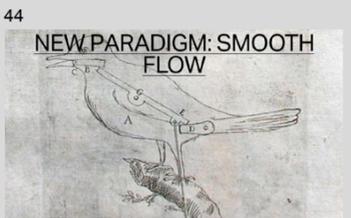
Today, and perhaps more so in the near future, we need to understand publishing as less 'breaking' and more 'layering' — a rhizomatic carpet, laying on top of everything else, without edges. In the "smooth flow" of the new publishing, the substrate isn't clear. It might be invisible, or even unknowable — code written into distant servers, below a natural language interface. Algorithms that work under the hood, writing records that remain out of sight.



In a kind of anti-publishing move, I think we see totally new conditions of erasure in the EPA's instant scrubbing of the words "climate change" from thousands of web pages and documents, under the current administration. Whether it was manual or performed as a script, I'm not sure, but the total alteration can't be seen clearly, it happened almost immediately, the change replicated itself in many places at once, and it will largely go unnoticed.



Where there's natural language interface, especially if it's voice-controlled, we'll find the new publishing paradigm. With networked domestic agents, we experience information as a smooth, conversational flow — not individual events, like a post or a published edition of the news — but as an ongoing, on-demand chat. The sense is that the information is always there and available, as a presence in the space, to be called forth when needed.



Bots aren't human, but they are individuals, and they can have voices that work and chat in and around our own conversations. A few years ago, Hito Steyerl said that "a Twitter chat bot is an algorithm wearing a person's face, a formula incorporated as animated spam. It is a scripted operation impersonating a human operation."



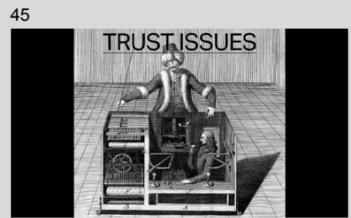
In the new publishing paradigm, the container is open and fluid, maybe non-existent.



voice might be disguised, unrecognizable, or non-human.



All of this smoothed out into a performative stream of data that infiltrates like an atmospheric presence — and so it's fitting to mention Manuel Castells' now twenty-year-old idea — the [space of flows](#). He says that flow is the space of power and domination over experience, because forces may act all at once, in a unified way, outside of contiguous space.



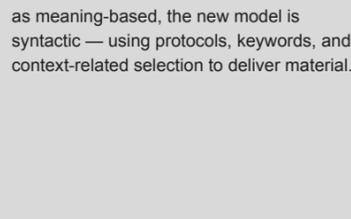
So a bot's face, or its voice, might lead us astray. Certainly, there are trust issues here, and I want to think about the ability to deceive, or to lose control. The new conditions of publishing test the limits of human discernment; all of the examples I've shown so far operate outside the normal ranges of human perception.



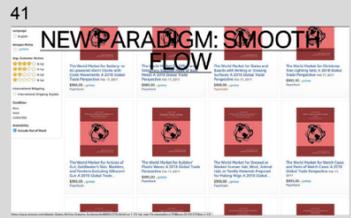
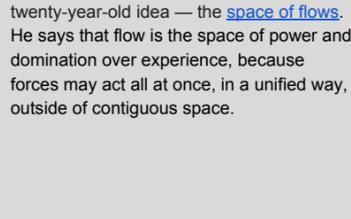
So, how do we train ourselves to engage with these new conversations and vistas? How do we learn new techniques for discerning, authenticating, and seeing in the space of flows?



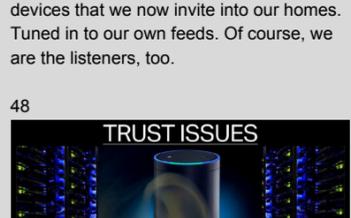
Authorship is certainly no longer fixed —



And whereas the old model could be seen as meaning-based, the new model is syntactic — using protocols, keywords, and context-related selection to deliver material.



But this isn't new — anywhere a searchable database meets algorithmic curation, we should look for published content that falls outside of traditional, human-centered perception and understanding.



devices that we now invite into our homes. Tuned in to our own feeds. Of course, we are the listeners, too.



ease of smooth flow by twisting the commands into something much more uncertain and ambiguous; rhetoric that's open-ended, and never resolved.



So where do we find this new modality today? I'm actively looking for examples where the traditional publishing object is absent. On a hopeful note, I see it in the [Inter-Planetary Filing System](#), a peer-to-peer protocol that aims to connect all devices with the same system of files. IPFS envisions a permanent, decentralized web without servers — a distributed system that stores and shares according to discoverable content, not location.



But right now, we'll also find this new paradigm on YouTube, where last week James Bridle brought these kinds of algorithmic agents [to our attention](#), an automatic publishing machine that pumps out endless amounts of repetitive, scrambled content for kids with almost no regard for conventional meaning.



It's a work to be heard. John calls it aurature, but once I created an Amazon Echo account, I was able to access all of our conversations as transcripts on the web. These are intriguing records, as a kind of poetic output to be read. The flow of conversation, inscribed as data into the archive.



But how might we archive the bot itself? Not just to store it, or preserve it, but to really see it? Or to see it differently. How might we interrupt the flow. Earlier this year, I began collecting specimens of bots and other algorithmic media, including those transcripts, and I published them on newsprint — [an anthology of bots](#).

51



This might be one technique. By printing the bots, I used the old paradigm of publishing to interrupt the new. A conventional container that tries to alter our experience of smooth flow.

52



I'd like to think that the act of archiving is itself a kind of resistance to durational information that can't be separated from the flow of time, by clearly fixing it in space.

53



Printing has always been a political act, but there's a new sense of urgency right now in what we archive, how we recognize value. Artists, archivists, and activists are working to alter our perception by shifting states, interrupting the flow of information into conventional forms that defamiliarize the view and ask us to slow down, to look more closely.

59



Are we ready for that? How will we evolve to watch these? The authors of this research say that they're training their network to predict plausible futures of static images. Who is training us to perceive them? What happens when these turn into smooth feeds, as I'm sure they will. I'm squinting and I see a not-too-distant future where these dream scenes evolve into total believability, fictional futures that are indistinguishable from live events, detached from their origin, livestreams spun out of thin air.

60



Are we ready for future feeds that surround us with limitless realities — not simulations, but a present moment that branches into any number of options to be experienced, all real-seeming, all possible, filling up our view forward, forever.

61



If there is some new, future version of us that better negotiates truth and information in the space of flows, then we've got a lot of work to do right now. We already tend to our feeds with great care — loving them as extensions of ourselves.

54



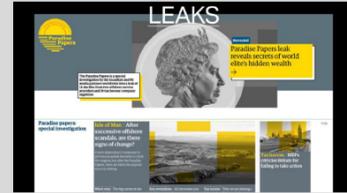
If the feed and the stream suggest that the new conditions of publishing are a smooth flow, a fluid state, then what does the leak mean in this context? Maybe leaky information is a feed in reverse — material that escapes a closed system, dripping out from its source. It's a radical state change, from private into public, and in many cases it works as a rupture.

55



What can we learn from the leak? Is the whistleblower an artist, and is the leak an art form? Those responsible for leaks try to shift the narrative through acts of publishing that interrupt, for various causes, of course —

56



— but I'm thinking about the recent [Paradise Papers](#), a leak that attempts to disrupt power by creating an event that carries many of the qualities of the new publishing paradigm — 13.4 million documents that can't be totally seen or known from any one position, no well-defined container, unknown sources, and instant distribution — but the leak breaks, launches and announces itself as an interruption; it cuts through the noise like a cry.

62



But we need to see these feeds differently — let's print them, interrupt them, archive, redistribute, and inhabit them with new agendas. With the help of artists, archivists, and activists, let's de-focus our gaze and look for breaches, breaks, and leaks that resist smooth flow. Let's teach ourselves new ways to see. How else to prepare for total uncertainty.



Talk delivered at The Cybernetics Conference November 18, 2017

■ A1: "If one is critical of usage, the amount of control one has ultimately depends on class/social status. You have the choice to refuse usage and subsequent capitalisation because you can afford to say no, or that you are in a powerful enough position at work to choose not to devote your persona for the branding of your company, for example."

■ A2: "I feel them. I try to mislead the systems when possible. i.e: I don't reveal where I work, what I do or where I went to school on Facebook. Nor my relationship status. So I get served irrelevant dating ads which I adore, and collect screenshots of. I take joy in tricking the targeting mechanisms. I'm also often bitter and cynical."

■ A3: "I am definitely not in control. I am entirely beholden to whatever UX designer/s have created."

■ A4: "I'd like to think this is true but acknowledge that I could be totally wrong. It might be nice if there was an auditing service where a non-profit observed your social media practices and then explained how common / typical behaviors were with respect to advertiser goals"

■ A5: "Well good for you, because I'm a pawn to the interface."

Agency & Control: Q&A #1

Q: I can feel and track how my emotions are being actively manipulated by interfaces, across devices, browsers, apps, and news feeds. I can notice this manipulation as it happens, and then make a conscious decision about how to respond. I feel I have a choice about not only whether I use these interfaces but how I use them. I am in control.

57



I'm still working this out, but I suspect that in order to better recognize and understand the entanglement of power, automation, simulation, and algorithmic media, we need to equip ourselves with new tools and techniques. We need to train ourselves at the outer limits of perception.

58



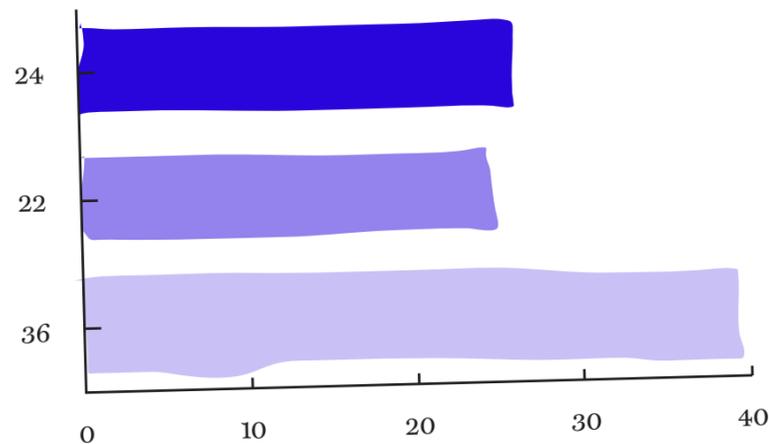
I don't believe that the post is over — rather, we need to negotiate multiple modalities. We need to resist the new boredom and modulate between fixed and flowing information. Maybe this is how we face new forms of media that are on the horizon, like these [predictive videos](#). They're generated by a neural network from still photographs. These are one second clips of events that have never happened. Bumpy and janky and sort of frightening. I don't trust them. And yet I suspect that they'll eventually evolve into realistic scenes, with ultimate resolution.

Agency & Control

61 Agency & Control

■ A6: "The only conscious choice is to use or not to use one platform over another, everything else is susceptible to manipulation. To some extent, that is control, but control is very limited in this space."

Digital curators use algorithms and data science to analyze consumer taste. The idea here is that taste is a product of information, meaning, the amount of time you spend with types of work. So, you listen to Hall and Oates ten times — then you probably love all kinds of groovy ballads. How do you feel seeing your calculated or curated taste fed back to you — whether on music apps or your various feeds? How has this mirroring changed your actual taste?

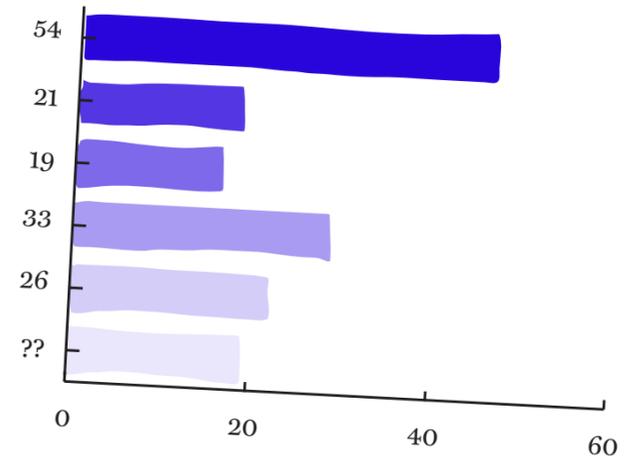


- In general, I think less about seeking out new music, film, and writing when I do consume; I tend to look at what my friends share. I don't think this is a bad thing; my friends and I share tastes.
- I feel much less open to new or different material and artists; when they are shared, I'm looking to see how my friends or people I value have framed them.
- The opposite; there is too much choice. If I didn't have my friends and people I like sharing, I'd never have time to find new work.

*what a fucking nightmare!!!*

*"Sounds like a bad idea but white ppl do want the world to end so they can go off I guess."*

Mary Lou Jepson, a former Google executive, has been on record saying telepathy will be possible through consumer wearables — a ski cap — in about eight years. The functionality of an M.R.I. could be integrated into a hat. (An M.R.I. scan's data already allows us to predict what sounds you are thinking about, and what you might say). This is one example of how technology is moving rapidly to prototype modes of non-invasive human brain-computer hybridity. Many of these projects (like Musk's Neuralink) cite the inherent value of innovation, and accelerating its cycles. The idea, they claim, is that you'll be able to write your screenplay more quickly if you can transcribe it from your mind to your computer. And you can eventually, if the product works, retain and translate dreams and deep memories.



Ethically, this is profoundly disturbing, given what we know about how power works. No company can be trusted to use these products ethically; the fact of their existence is suggestion of other aims than "helping artists translate their dreams." Fin

The potential for creative people — composers, artists, writers — is staggering.

This is the beginning of the end, in some ways.

Greater regulation and ethical oversight (AI Ethics) of such initiatives needs to be put in place. We need younger, more technically skilled individuals in policy and law.

Better education is key for consumers and the public to understand what the \_\_\_ is going on in these fields. Consumer education is a right.

Other:

*"the ability to translate your thinking into materials is a big part of what creatives do and define what kind of creatives one is. Before getting excited about the possibility, we should think more critically and thoroughly what does it mean to be a creative practitioner and what kind of help we actually want to get from tech than just being "quicker"!"*

*"inevitable, speeds the demise of mankind, fine"*

*"I'm not a fan of hats"*

# Knowledge, Wisdom

"...THROUGH THE CHECKERWORK OF LEAVES THE SUN FLUNG SPANGLES, DANCING COINS."

We spoke to Claire Evans, musician and writer, shortly after the launch of her new book, *Broad Band: The Untold History of the Women Who Made the Internet*. On April 19, she joined Stacy Horn, founder of the community Echo, “one of the earliest spaces online to be truly hospitable to women,” and Jaime Levy, creative director of Word.com (an early web publication centered around the potential of interactive design) at New Museum to discuss the book.

*Broad Band* posits a vital new history of technology outside of solitary visionary men who forged a frontier on their own. The story of women online community builders, hackers, programmers, designers, and graphic publishers was just

as important, frequently defining the ethics and norm of emerging technologies and networked spaces.

After we talked to Fred Turner, whose zeal for the failures of New Communalism and Silicon Valley’s misguided attempts to “engineer everything” was infectious, we were keen to talk to Evans about a different kind of communalism. What can we learn from the communal ethic of so many online communities run by women within Silicon Alley in ‘90s New York? What possible agency and control can we find in valuing the early stages of new technologies from virtual assistants to AI, where women can play a significant role? -Ed.

# Understanding, Fr

**Rhizome:** *We were hoping to hear a little bit about your 7x7 project with Tracy Chou. It was SVS, or now Bot.theater is where it exists online, a play for four bots in three acts. We interviewed Tracy for this project as well, and she mentioned in her interview that after finding out about your shared interests in gender, and gender issues in technology, the writing flowed fairly easily. How do you remember the Seven on Seven experience, and the writing, and what are your reflections on its success now?*

**Claire Evans:** Tracy's assessment of our working relationship is very accurate. When we first talked about what we would do, it became quickly apparent that we wanted to talk about the way that gender plays out in technology, not just in the workplace but in the tools that emerge from those working environments that are so predominantly male. We talked about things like the female voicing in machine assistance, Cortana, Alexa, as well as GPS navigation and customer service bots. And I had an interest in that because I've been writing about the history of women in technology, and a lot of the reason that we have female voices in those positions is because of a cultural familiarity with them that goes back to telephone operators, before the war. So this is part of the public consciousness of people and machines, but it's also very problematic because we're now raising a generation of children growing up with some of these tools, and they're becoming accustomed to just barking commands at pliant woman machines, which is weird.

So we wanted to do something that would play with that, that would serve as a bias test, but also be an enjoyable aesthetic experience on its own. We ended up settling on this notion of doing a play for four bots. And I loved it because it was a very easy working relationship. It was probably one of the easiest

and enjoyable projects I've done with another person. I have spent a long time collaborating with the same people, and to collaborate with someone new who has a facility with the language of code that I find so fascinating, but I have no access to myself as an artist, is so cool. It proceeded very easily.

I wrote the play, and she wrote the program that runs the play. The way that it works is that the play is always the same, and you can run it as many times as you want, but the names and genders and nationalities and voices of the bots that read the dialogue is randomized. So every time you run the play, it's got a different casting. Depending on the audience's biases about gender, the play reads differently every time. It's also complicated by the fact that one of the characters in the play is an AI, and so whether the AI is cast with a female voice or a male voice taps into different touchstones of our thinking about AI throughout history. With the female voice, we think about sexualized relationship between the voice and the person and the archetypes that define her. And then on the other end, if it's a male voice, we jump immediately to antagonism, because that's the way that those kinds of gender in AI have been presented in the media throughout our lives.

So, it's a lot of different things going on at once. It's a sci-fi story. It's a play. It's a program. It was very enjoyable to create. The program that Tracy wrote is so beautiful, and it has all of these very thoughtful details, and as we played with how the bots voice the various characters in the play, we realized that the way that sentences are written influences the cadence of the bot's voice, so you can use punctuation to create a rhythm to the dialogue, even if it's being automated. So, you can put periods between words, and that creates these accents or pauses, which you can play with, which was a really interesting discovery about language

and trying to play to the limitations of their character that's going to perform.

That happens in playwriting all the time, as you write to a specific actor, maybe, because you understand their strengths. And it's like that with the bot, too. Writing for a bot, you can exercise a limitation, and formal experimentation.

**R:** *How were you thinking about gender in AI when you first wrote the play, in 2016, and how are you thinking about gender in AI now, in 2018, after finishing your book, and speaking to so many women pioneers in the internet? You spoke on it a little bit, but could you expand on that?*

**CE:** I think it has changed. Working on a history of women in technology, I found is that women tend to concentrate, throughout this history for various reasons, in the user-oriented side, in spaces that maybe are easier to break into than classical programming at the highest levels of hardware or software engineering. Spaces like hypertext, and publishing, and community development online. Programming itself really is still dominated by men. We might see the beginnings of technologies as an opportunity for women to articulate a space that works, or is accessible. And in history, those spaces tend to define the parameters of what the technology can do. The first people to work on computer programming were women, and they invented norms and approaches to it, that we still use when we code. And so it was taken away from them by various circumstances, throughout the 1970s and 1980s.

I think there's a possibility for this kind of female intervention early on. I hope that that happens in AI now. I see a possibility for that to happen, because I feel like there are women that are entering into the spaces of UX inter-

face design, AI interface design, conversational interface design. That's a really interesting intervention. At least I hope that the right people are in that space, because it seems like that's an area where you can really encode these personalities with values that are consistent with positive human existence and cohabitation.

I take a more interventionist approach now. I just hope that women can be part of the conversation, and in doing so, be able to define technology that works for everybody.

**R:** *So, as a response to that, what kinds of AI do you think we could build? Do you think it'd be a transfeminist or a feminist AI? Maybe a leftist, or an anti-capitalist AI?*

**CE:** Yes, totally. The world's our oyster. If we're going to be interfacing with these systems all the time, we want to make sure that these systems are helping us mirror and amplify what's best in us, and not what's worst in us. I want to design systems that are only responsive to polite inquiry. I think that that's something that's important, because I don't want us to forget that it's important to value others. But there should be a kind of exchange. I think about Siri and I feel bad about how much I boss Siri around. I'm already starting to feel that way, and I know that when these systems become more advanced, it's going to amplify that feeling in me. And I don't necessarily want to feel that. I don't want to feel like I'm abusing something, or that I feel like I'm entitled to all the knowledge in the world at the most convenient time, specifically tailored to me. I think that's a very dangerous change in temperament, in our society.

**R:** *Do you think AI can do something for our examination of misogyny, racism, and other violent ills in the world, through our treatment of and our building of AI?*

**CE:** I think that that's a very noble aspiration. I hope that that is true. I want that to be true. I don't know that it will be true. If we're building AI and we're training them on our behavior, and our precedents as a society, I don't know that we're necessarily going to be training an AI to do anything but just replicate us, or mirror us. **We always bring ourselves with us into every new technology, and it's hard to imagine human beings creating something that might give us critical distance on our own trip, and our own society and our own problem.** I find that hard to believe.

**R:** *We today have most tech companies investing fully in AI. We have black box AI that teaches itself in languages we can't track. We have bots and machines speaking in their own language as one to another. That moves us past the conversation around gendered AI and classes of servent AI and sexbots, to one around more philosophical questions about AGI and ASI.*

*One iteration of the play ends with Agnes, the AI, conversing with a new hire who has sworn not to snuff out the life of a new intelligence. And the hire is conspiring to help her mind move offshore. Agnes says to the human, "I am improving, but you stay the same." There is a sense here of Lucy, and her, and Ex Machina, these glorious female superintelligences which are indifferent to humanity, comprised of computational power that will exceed our understanding.*

*Why is it interesting that a being that is indifferent to human existence, male or female, be gendered female?*

**CE:** Well, the interpretation that you're reading is from one iteration of the play. That's one randomized casting. Had the program been run a second time, that character could have been male, and would have totally changed the way

that question is posed, because it would have been a different dynamic that we're talking about. It's difficult for us to break out of the cultural assumptions that we make about what AI is and specifically how it's depicted, I think, in cinema and television and science fiction literature. It tends to follow certain tropes.

It's a difficult question. There are so many different ways we could approach voicing, but even within the play, it can only be as nuanced as the cast of voices that are available. I think Tracy used Apple's built-in text-to-speech voicing. But there's choices in nationalities, and in gender. I would be interested to hear voicing that was ungendered, maybe a classic robot voice. But even the classic robot voice is feminized in a way. It's got a certain pitch to it. It already has some assumptions built into it.

**R:** *You could maybe think of Microsoft's Sam, if you remember that, which is as close as you could be to ungendered. It is masculine, but it was completely almost nonfunctional.*

**CE:** I think it's a really interesting design challenge, to create a new kind of voice. It's totally possible. It has to be comprehensible. It has to have no cultural associations. It has to be a blank slate. What a fascinating prospect. What could that possibly sound like? I would like to see more experimentation in that space.

**R:** *Let's talk about Broad Band: The Untold History of the Women of the Internet, your more recent work, a book. Can you tell us what the response to Broad Band has been so far?*

**CE:** The response has been good. I think the timing was right. I couldn't have anticipated necessarily, when I first started working with the book three years ago, that it would be in a position culturally where there would be so much

# me, Justice, Equality

interest in a conversation around women's stories. I'm grateful for it.

**R:** *What critique have you heard? What would you say you've heard from men reading the book?*

**CE:** I think some of the more positive early readers have been men, actually. I think there's a strong contingent of men who are really trying. It's cool to see that. It makes me happy.

In terms of critiques, I haven't been reading the reviews too closely. I think someone said it was a little too "Girl Bossy," which I get. It's always really difficult to talk about female historical figures without it coming off *rah rah*. And I hope that the book is a deep enough dive into each individual character's temperaments that it doesn't feel that way. It's really important to recognize that even our heroes are flawed. Men get to have flawed heroes, and I want women to have flawed heroes too, not just these coloring book heroes, sticker collections of Ada Lovelace, Grace Hopper, and the like. There's a flattening of these women to make their stories more commercially digestible, or to disseminate them more quickly, because it's so needed.

But I really am so interested in people's accomplishments within the context of their lives, and the things that they had to overcome in order to succeed. I think it's much more instructive and useful, for example, to understand that Ada Lovelace was a gambling addict. That makes her accomplishments seem more approachable to me. It makes her more of a hero, not less. So there's a lot of that in the book, and I hope that that cancels out any overly broad strategy that I took in the writing of it.

**R:** *And how has writing and researching for Broad Band been instructive for your understanding of the ethical dilemmas facing technology and users of technology?*

**CE:** Writing *Broad Band* changed my understanding of the human ecosystem of technology. Not just in terms of its effects on our lives as the public, but its effect on the lives of the people who create it, and the kinds of decisions that are made in the conception of transformative technologies. They're not always decisions that are made with a long view in mind. People make choices, and design things for the context that they're in. They can't anticipate how the technology is going to change and how it's going to change society. And I think a lot of the early internet people are just as stymied by what the internet has come to represent, as we are, because it was different for them and for their time.

Just having an awareness of how human these systems are, how much they're predicated on design decisions made in the moment, makes the whole field feel more approachable. I think it makes the idea of an intervention or a change seem more possible, if not more likely.

**R:** *In understanding these interventions, and the revisionist history of the secret histories of women founders, investors, and tinkerers that you researched, what did that do to your sense of what are we to do now, facing these ethical dilemmas we've discussed? What are women in technology to do now?*

**CE:** Well, I've spent all this time thinking about history and then interviewers always ask me about the future. I see patterns that

repeat themselves, and I hope we don't continue to repeat them. The question of how to solve or fix the diversity and gender diversity problem of technology — the answers are so simple. It's just about paying people equally and giving them equal opportunities. It's not rocket science. It doesn't need to be parsed *ad nauseam*. We just need to fucking do the thing. We just need to make it easier. Everybody wins. Products will be better designed. Products will be more human. They will actually, perhaps, approach and assist the user communities that they're trying to assist. I think it's a win all around.

It's instructive to go back in the history and see that not happen, again and again, in more or less the same ways, in different permutations with only slight evolution. It provides a strong foundation for which choices to reject. At this point, I just want to get on with fixing it.

**R:** *Do you have any specific examples from the book that you encourage people to take away, to apply today or into the future?*

**CE:** One of the easiest places to look for an analogy for our current moment is in the pre-web development of online communities, specifically the online community of Stacy Horn, called Echo, in New York City. These are the really early test cases of trying to understand what happens when people come together online, how societal dynamics are shifted or not shifted by the presence of this new medium. People working in that space in that time were observing very closely what was going on. There was lots of good writing about what it means to build a community online. I think a lot of that stuff is still useful. The system has

gotten more refined, but we're still doing the same stuff to each other.

Stacy Horn made design decisions that she felt would make for a better community environment, one of them being the implementation of host moderators in every single channel of conversation. This was a small community of people who have a real vested stake in the health of their community online. Horn made sure that every single one of those channels had male moderators and female moderators, working together in a partnership. And the impact that that had on the community was massive. Women felt like they actually were part of the community. They saw themselves reflected in it. They didn't feel weird about claiming space. It was just already theirs. I think that's so important.

I don't know that there's a clear analogy necessarily for how Facebook could implement something like that. But just thinking about what people experience when they use a platform, and how they see themselves represented or not, and what they feel like their affordances are in that space is instructive. We should be doing this kind of thinking now.

**R:** *It is harder to access moderation or crowd managing. Do you think this current lack of community managers and moderators — that has become more automated, or in some cases, usurped by the use of AI technologies — has stifled the more productive outcomes that could be happening on social platforms, and has encouraged the less productive, more harmful conversations that are occurring? In Echo, the community managers facilitated things more actively to make productive spaces. I know Stacy Horn said she didn't want Echo to be a safe space.*

**CE:** The present condition is one of slight ambiguity, in which we often can't tell between artificially intelligent agents or simply offshore workers working remotely through an interface of audio or text. The fact is that we're never quite sure who or what is filtering our posts, and yet we continue to scale upwards, and build larger and larger platforms, based on that assumption. More people need to understand how much of moderation is just outsourcing suffering to other people, content moderators who are flagging images of beheadings and rapes. These are people whose minds are being destroyed, whose souls are being destroyed, by having to witness a concentrated shot of what the worst of humanity is, all day, every day. We're outsourcing that to other people, based on this assumption from the user side that those people are automated in some way, or that they're not there. I think that's really scary. It's vicious.

Ultimately social media is the failed scaling of online community. We tried to make online community bigger, and more all-encompassing, and I think it has only caused a great deal of pain in our society. We've been forced to ignore a lot of the realities of what these platforms are: how they make money, how they exploit us, what they do, and who they're for.

**R:** *The book elevates the collective spirit of the on-the-ground, communal experiments that a lot of the early women of the internet undertook. You mentioned women at the early stages of a technology, defining its norms, and often in collaboration. This feels very much at odds with the dominant Silicon Valley myth, or archetype, of the genius loner male inventor. In an essay, Ursula K. LeGuin called this the hero myth,*

*one that could be countered by different narratives about creation, about its work to sustain, its unseen labor in service of different ideals than individual ego.*

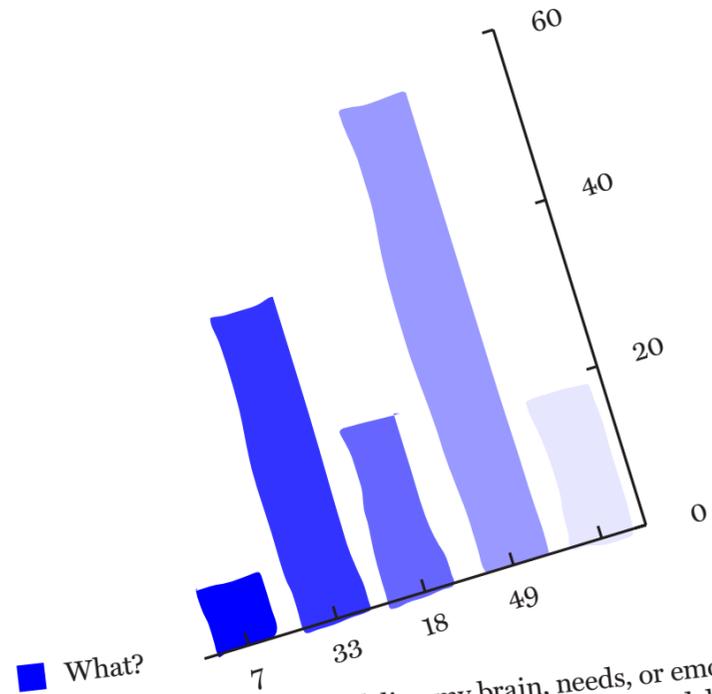
*How do these ideas of technical expertise and "programming genius" obfuscate stories of people with more accessible approaches and likely (full of mistakes, starts, restarts) to technology? Broad Band ultimately asks us to consider the reality of many kinds of genius or intelligence or intellectual labor to make the tools we have today.*

**CE:** Big question. I don't think the alternative to great man history is necessarily great woman history, because it's just as non-instructive. There's no such thing as one person who's responsible for something at large scale like that the of internet. You can't accomplish things like that alone. In the case of a lot of tech heroes, you either do so by the exploitation of others, or with the collaboration and support of others, or a combination of both. So, I am interested in being more clear about acknowledging the sheer multiplicity of the condition that everybody is in, especially people who are creating technologies. Not only are they interfacing and engaging with the people around them, but they're also interfacing and engaging at a distance through a technology or a technological platform with a wide, possibly global public.

I don't believe in solitary male geniuses, just as much as I don't believe in solitary female geniuses. But I do think that the

women in my book are all geniuses.

Because there has to be a machine learning question: the full changeover to AI from Google to your local bank designing a virtual assistant, all depends heavily on the offerings of machine learning. A portrait of your mind, your needs, your emotional responses, is created in response to your stream of live data. What is being formed is an analogue of your brain, reflecting and mirroring your needs back to you. What will the most important challenge be for both academic and corporate machine learning research in the next five to ten years?



*"at least we know full communism is technically possible"*

- What?
- I don't want anyone modeling my brain, needs, or emotional responses. I definitely don't want companies modeling my brain, needs, emotional responses.
- Even as AI evolves to understand us, we evolve, as well. We'll only become more flexible and nimble, challenged by their echoes of us. Bring it on.
- I don't believe most people using these technologies have any sense of, or access to, what it would be to interact with a system that is responding and interacting with them in real-time, let alone how to manage that relationship that works on us without our consent.
- Other: *"honestly the most disturbing thing is that none of these AI systems are actually that smart, so I can only imagine that this road leads us to terrible ends"*

*"I want to model Google (and other companies) executives' brains first"*

YES



*Seven on Seven is 10! I think this is where we're supposed to say: "What a long strange trip it's been."*

*When we held the first edition in 2010, Gizmodo had just reported that they found an iPhone 4 at a bar in Redwood City, Snowden had recently landed in Hawaii as an NSA contractor for Dell, and Instagram was tinkering with the final release of version one. Where those stories and countless others like them would go — the assimilation of daily life into our devices, the revelation of mass government surveillance, how the algorithmic feeds of social networks impact the collective daily mood — have all been refracted, poked, and illuminated by artists and technologists brought together under the auspices of Seven on Seven.*

*How? This program has endured because its simple framework — artists and technologist work together to make something new — has created space for deep engagement with the topics of our time.*

*This publication takes stock of the state of art-meets-tech at ten. It's a special partnership with Wieden+Kennedy New York, who helped us found Seven on Seven and have continued to support this platform ever since. They're visionaries and we're grateful.*

*Thank you to the brilliant creative team at W+K: Richard Turley, Justin Flood, and Frank DeRose. We're in awe of your work. Thank you to Liz Taylor, a true Seven on Seven superfan. And thank you, Renny Gleeson, tireless advocate for all things Rhizome.*

*Over here, this publication was ably shepherded by Nora Khan, our special projects editor, and an astute critic of both art and tech. We thank all the participants as well — many of them are program alumni. Thank you to Michael Connor, Rhizome artistic director, for plotting themes and pairs each year that enable this great platform that reveals the future of art and tech. Thank you, Greg Pass and the Rhizome Board and Lisa Phillips and the New Museum, for championing this program and this organization. And, finally, thank you to my predecessor, Lauren Cornell, for creating this program with Fred Benenson, John Borthwick, and Peter Rojas. It's been a trip!*

*Zachary Kaplan  
Executive Director, Rhizome*