Selfies, Sousveillance and Participatory Countersurveillance

Artists Hasan Elahi and Annina Rüst consider the culture and ecosystems of pervasive surveillance and the control of information and privacy. In his work, “Tracking Transience,” Elahi, the subject of an FBI investigation after 9/11, offers the FBI a continuously updated stream of information about his life and whereabouts. Elahi’s practice of self-surveillance, or sousveillance, inverts, as well as asserts, his control of information. In works such as “Tracenozier – Disinformation on Demand,” Rüst explores Participatory Countersurveillance and the complicated relationship between surveillant and surveillee in networked communications. How does our understanding of the data-selfie fit within the tradition of self-portraiture?

Hasan Elahi is an interdisciplinary artist whose work examines issues of surveillance, citizenship, migration, transport, borders and frontiers. Elahi has exhibited and spoken internationally and is currently Associate Professor of Art at the University of Maryland.

Annina Rüst, a LACMA Art + Tech Lab Grantee, is a Swiss artist whose works focus on political issues within tech culture, including gender representation and online privacy and participatory surveillance. Rüst is an Assistant Professor at Syracuse University Department of Transmedia.

Annina Rust: Hello. Most of this work is, and I didn’t make it while I was at Syracuse University. So, I’m going to talk about internet surveillance and, as it says here, internet. I think it’s complicated. The internet surveillance is complicated.

Digital pessimists tell us that surveillance is always negative because it violates our right to privacy, free speech, et cetera. And, yes, it does and, if you think so, then, I totally
agree with you; however, if you and I think that enthusiastically confronting and engaging in surveillance can be just as empowering, that’s what I’m talking about here.

I’m going to talk about projects that I’ve made since around 2001 and, obviously, a lot has happened since then. Today, we have social networking and things like that, and theorists say about this type of surveillance, or about people who are active in social networks, that they put on an exhibitionist performance about their lives.

This is an example. It’s called *Socialty Barbie* by Darby Cisneros. It’s on Instagram. And it’s essentially simulates a kind of like a beautiful life, and it’s obviously parody. So, people, I guess I do it as well, put on a kind of like an exhibitionist performance about their lives. And everybody is kind of like their own PR agency, and that is seen as empowering because everybody’s controlling their image online.

This is from 2001. It’s a project called “*TraceNoiszer Disinformation on Demand.*” It’s basically for people who do not want to be found on the internet. From today’s perspective, obviously, that looks kind of strange. But, maybe, some people may want to put on a performance online while others really do not want to be found, and they may have reasons. So, this is from 2001. You can see it on the screenshot. It looks really old.

At the time people had websites, and that’s how they were presenting themselves online, and this is a project for people who don’t want to be found. You put your first name, last name, and then you hit run. And it generates clones from your data body in order to disinform those who are spying on you.

So, basically, it makes websites about you, it goes to Google and downloads information about you by putting your first name, last name, downloads the information, and then it organizes texts and images into sort of generic websites about you. So,
hello, dear, surfer. I am this first name, last name, and this is my page. Obviously, it's not really plausible website by today's standards, but at the time, it could have passed.

There were key words that lead to subpages, and the key words were derived by doing a key word analysis using the Rainbow Text Classification Library. And then we uploaded these websites, and depending on what information was available on these people or on ourselves, it sounded more or less plausible.

We uploaded these pages back on the net. And then we made more; we had an automated process that made more and more pages, and each page was derived from the last one. And then we linked all these pages together in a way similar to what porn sites did at the time where, you know, one site that had a lot of links was seen by Google as being more valuable than another one.

And, so, the idea was that these pages would then pollute your search result. You also could log in and watch as these so-called clone pages were being generated. So, it's a clone, this kind of language for describing a website that you had. Anyway, this is TraceNoizer Disinformation on Demand.

Another project I made is SuPerVillainizer Conspiracy Client. It’s also an internet surveillance project. It’s also a counter-surveillance tool, but it’s different. It also uses the technique of obfuscation, but in a different way. I’m from Switzerland. This is where the Swiss Parliament the Swiss National Assembly meets. And in 2002, the Swiss Government issued a decree to institute data retention. And data retention is a practice that means that internet service providers have to archive connection data and email et cetera, for six months. I don't know in detail what exactly is being archived. But like a lot of stuff about people’s internet usage, it is being archived to have a retroactive record of who spoke to whom. And proponents of this type of legislation does exist in other
countries as well, they will bring up terrorism as, obviously, as a reason for instituting this; however, this is back in 2002. TraceNoizer was in 2001. This piece is from 2002.

It was later shown by researchers at the Max Planck Institute that data retention hasn’t ever caught a single terrorist; that’s it’s pure imagination that this is how terrorists will be caught. But nevertheless, it’s still being practiced in Switzerland and elsewhere. And, in fact, there’s discussion about making more and better data retention. So, it’s a kind of surveillance in advance of surveillance because the crime it is trying to prevent is imaginary.

Because the crime it tries to prevent is imaginary, I created this conspiracy website. So, it’s a website, it looks like an email client. If you press on participate, it brings up this email web email client. It’s a website. It looks like Microsoft Outlook looked at the time but instead of being Microsoft Outlook, you can create conspiracies with it; email conspiracies specifically.

You can click on “Create Conspiracy,” and then it will bring up the conspiracy interface: you can give it a name, a duration, i.e. how many emails per day, how many days, and then what language. It has English, German, and I think Italian, even though I don’t speak Italian. But it doesn’t really matter. Then you could choose villains, and the villains were all crowd sourced. You could also enter your own - crowd sourcing didn’t exist at the time - villains.

This was created under the Bush Administration and to a certain extent, by Europeans. Some of these names you may not know, others may be more familiar. Anyway, you would, press “Create Conspiracy,” and then it would create the conspiracy. And as you can see, Hasan is a popular villain name, but -

Hasan Elahi: I’m not a villain.
Annina Rust: Yeah, yeah, it’s Okay. It’s actually Hasan-i Sabbah who is actually a historical figure, but anyway it would then create email accounts, and these email accounts would email each other conspirative messages that were generated. It was a fake imaginary conspiratorial tone. i.e, “Finally we got that info about tactical information broadcasting service. You will receive it after the satellite has passed over.”

It used the conspiratorial language that - to a certain extent - was created under the Bush Administration. We can discuss whether today this is still the conspiratorial lingo that’s used. This is how you could modify the conspiracy, and you could also donate email accounts that you didn’t like anymore; that were yours but you maybe you didn’t trust the provider. So, people came up with around 2,000 villain names while it was working. And, you know, the idea was to speculate about who the villains of the world are and, who the enemy is, essentially; the name Hasan, for example.

So, fast forward, ten years to the next project, to 2012. And it’s anticlimactic because this is not interventionist at all. It’s not an interventionist project. It’s totally different, and it’s not interventionist like the previous one. It’s an audio visual performance. This is me and my collaborator, Amy Alexander. We built this performance. It’s an audio visual performance, and we built it around a solar-powered disco ball. So, we have solar cells on a disco ball.

What happens here is that we’re projecting against these solar cells. There’s a motor in that that turns the disco balls, depending on how the disco ball, depending on how much light hits the solar cells, and it turns faster or slower and we created an audio/visual performance. When you project against a disco ball, it creates this kaleidoscopic thing, and projected dance videos against it.
This is social media as we know it today to a certain extent, and it’s quite literally this kind of exhibitionist performance that I was talking about that people put on on YouTube, and according to theorists of participatory surveillance, these are supposed to be empowering because you do your own thing, you control your own presence online.

As we were looking into dance videos we figured out that there was a history of dance videos of this kind of exhibitionist dancing that starts in 1895 when film was a new medium. So, dance clips were recorded then, and they resemble very much today’s social media because they were put on by stage performers and they were, essentially looking at their audience like I’m looking at you now.

So, we found that this kind of dancing where during dancing, people were looking at the audience or at the camera lasted until the end of the era of the tap dance movies - the 1950s, maybe. So, Ginger Rogers, Fred Astaire, these movies - basically, they’re actors that are acting, and then when they’re dancing, they break character and they actually look at the camera, and then they go back into character. So, we took all of these dancing films, and we made a performance out of them.

We basically found that although YouTube performers are these self-directed and liberated and empowered people, many will still enact gender stereotypes and conform to body expectations and that the mass media puts out there. And we found that there were very little examples of people breaking the gender stereotypes.

For example, this person is dancing to Beyoncé’s *Single Ladies*, and he’s really good; doing a really great job. This is what, to a certain extent, participatory surveillance should look like in the sense that there is this empowerment to be whoever you want to be. Obviously, my narrative here is not very consistent, and I just wanted to present three different angles of looking at surveillance and the internet.
Hasan Elahi: Great. Thanks, Annina. Peggy, thank you so much. Thank you Joel (Ferree), I guess you’re hiding somewhere back there and Amy (Heibel). Thank you so much for having me here. This has been really great, and I really appreciate you folks coming out tonight because with all the stuff that’s going on, this is, actually, pretty amazing. It means a lot that you folks made it out here tonight. So, thank you.

I’m Hasan Elahi. Annina and I actually had assigned seats because that arrow pointed this way. I guess we could have made it point the other way. It will all make sense in a bit. I’m going to try to go over a lot of material with you. elahi.umd.edu is my website, or elahi.org because I’m an organization of just one. There’s also one of my projects, the “Tracking Transience” project is running on the screen behind you, so later on, we can go to that one.

So, real quickly, I guess my big hit song, my free bird, is this tracking project that I’ve been doing. I created this project in 2002, shortly after got reported as a terrorist. I was taken in by the FBI and I had to spend six months of my life justifying every moment of my existence.

What had happened is that the authorities received a report that an Arab man had fled on September 12 who was hoarding explosives. And that Arab man would be me, even though I’m not Arab, and even though it wasn’t the 12th, and even though there were no explosives. But, you know, if you see something, say something, even if it’s just something you only see in your head.

And, that’s how I started documenting every moment of my life. It’s one of those situations, where I was worried that the agents might not get the next memo and here we’d go all over again, and I thought, how do I make this not happen? How do I stay away from this suspicion?
So, they (the FBI) said, “You know, here’s some phone numbers. Give us a call.” I felt, this is great. I’ve got the best guys in the business to watch out for me. So, I had to call my FBI agent before I’d go anywhere because it’s my FBI agent. Actually, we’re still in touch, and I’d tell him where I was going. He’s, like, this is cool. No problem. I’ll pass this on; you know? I’d give him my flight numbers. So, I started documenting every little moment of my life for him, every little detail because it was really important because, you know, they need to know; you know?

We know the government needs all the help they can get. So, I figure, I’ll help them. It’s kind of an act of aggressive compliance. Yeah, I’m going to really comply with you. I’m going to tell you every little detail. So you see my toilets and you see the food that I’ve been eating. You see all these random things.

The whole thing is to say, “Guys, you want to watch me? That’s totally cool. I’m perfectly okay with you watching me because I can watch myself so much better than you guys ever could, and I could get such a level of detail that you’ll never have access to.” But it also borrows a very simple principle of economics where if you put out enough of your information out there, you flood this. Obviously, you know, the FBI has a file on me. And, probably quite a few people in this room. We don’t necessarily know what’s in that file because it’s kept secret.

But let’s cut out the middleman. Let’s just take that out. If I give you that information directly, that information that the FBI has has zero value, so it devalues their currency. So, you maintain privacy by giving it up. I know it sounds counter-intuitive, but it works. It’s like we were talking about Annina’s noise generator.

This is the building at the Tampa Federal Building – this is the kind of thing that I like to share with them every now and then. You can see all these on the site. So, they wanted to know things about me. So, I decided, you know what? I’m going to tell you everything,
but in the way of telling you everything, I’m going to tell you absolutely nothing. It’s noise. I’m going to give you so much noise, and that in that noise I’m going to be hiding. So, it’s kind of like hiding in plain sight.

Another way to think about it is this idea of digital camouflage. And this is important because, we’re in an era where everything is tracked, and everything is archived, and everything can be monitored, if it’s not already being monitored. So, you know, disconnecting is not an option. We’re too far in to get out. We’re not going to all of a sudden just stop using our phones because the data is being sent to the NSA.

Try to live without your phone for a day. It doesn’t work. Even in our cars. In order to avoid, any sort of tracking, you have to have a car pre-1996 because of the sensors that are in the monitor; but on the other hand, I like the safety features that are in post-96 cars. So, there are lot of little bits and pieces, but this is important because what you’re really looking at - at first look is like a modernist grid of images – but what you’re really looking at is this is a sample taken from an early design for the soldiers for the ACU (Army Combat Uniform), the camouflage that the soldiers wear.

Historically, camouflage was used so the enemy could not distinguish between the soldier and the background so that it would break the silhouette; make sense? So, that’s why when we went to different wars, we had different kinds of camouflage fatigues because trees and bushes and field, they looked different everplace. But have you noticed the color that the new camouflage that we’re using? This kind of greenish-grayish kind of pixely pattern? Have you ever noticed any trees that green or grayish color anywhere?

This is really important because, historically, we had a need for the soldier to blend into the landscape of warfare, but now it’s no longer that; now we have a need for the soldier to blend into the machinery of warfare. There’s an embeddedness that’s taking place.
And the reason this is important is so the enemy cannot distinguish between the soldier and the noise in the night vision goggles. So, there’s this mechanization, this embodiment.

In a similar situation, like when you’re looking at that map and there’s an arrow of me over there, in the past we’d have to open up a map and would go, “We’re here.” You’d have to locate yourself to the geography. Have you tried to buy a road map recently? Have you tried to buy a map at a gas station? They don’t exist because now you have that gadget, that magic phone, you pick it out, and you touch that button, and you become the center of your own map.

When I first started this project, more than a dozen years ago, it was odd at first to see yourself as a pixel. It took a little bit of time to see yourself. But now, you see that little icon of that car or that little triangle on your GPS? You become that pixel. So, this embodiment of the technology, I think, is really important.

Anyway, going back to warfare, I want to show you this piece. This is called “Instances of Use of United States Armed Forces Abroad 1798 to 2006,” which is actually the title of a document. The title comes from a congressional document that chronicles every time U.S. troops have been used overseas for other than normal peacetime purposes; essentially, every time we invaded another country. Now, the U.S. has only declared war 11 times in history, but there have been over 330 instances where we’ve landed U.S. troops on a foreign country without that country’s permission. Every time that we basically invaded another country.

In the years since 1776 that we’ve been an independent nation, there have been only 39 years that we’ve not been at war, and 23 of those are before 1800. In the 1900s, there have only been five years that were not at war. So, what you’re really looking at here actually [slide showing large glass transparent map], Peggy and I, we were in this
show together in LABoral in Northern Spain, in this amazing building built by Franco. All the white Xs that you see are invasions that took place between 1776 and World War I, all the gray Xs are between World War I and Vietnam, and all the black Xs date from the Vietnam War until today.

The number of invasions from 1776 to World War I roughly equate the number from World War I to Vietnam, and the number of invasions from 1776 to Vietnam equal roughly the number from Vietnam to today. So, we’re on really good trajectory here. For this proposal, when I was talking to the curator about it, I suggested, “You know what? Let’s put up a huge sheet of bulletproof glass, and then we’ll hire a guy with a rifle at the other end that will shoot at the X’s, and the bullets will stop, because of the bulletproof glass, in front of the people - in front of the live audience knowing that they’re watching this performance.” I thought, “This is crazy. There’s no way this is going to happen.”

But to my surprise, they said, “We’ll look into it, we’ll talk to our legal people, we’ll talk to some…” - and then they did these amazing ballistics tests, and just visually it’s just beautiful when bullets hit bulletproof glass; it’s actually very dense plastic. So, the plastic heats up and swallows up the bullet, and it starts shattering inside of it.

And then a few weeks later, they called me and said, “You’re crazy. There’s absolutely no way we’re doing this.” So, we have to do this offsite. So, this is actually what happened over there. What you’re really looking at the glass that was shot, each bullet marking a point of invasion. For example, we’ve invaded Central America so many times that the bulletproof glass gave way and became a literal wreck.

I’m going to change gears a little bit. I’ve been doing this project for a long time, so you can understand why I’m looking at this idea of the selfie. What does this mean in terms of selfie? When we think of the selfie, there’s a very direct relation between that and the war on terror - this perpetual documentation. Because when I started doing this tracking
And the big thing that happened was *Big Brother*, which normalized surveillance, which normalized this idea of watching from above. We’ve had small point and shoot cameras, but this angle of this looking down from above, this idea of the surveillance camera becoming a TV star, becoming a celebrity, really normalized the idea of surveillance. In the midst of all of these images that are taking place, one of the things that I’m proposing is that when you look at these images, is that the selfie, this perpetual documentation, is the cultural effect of the war on terror.

If you think about World War I and Dadaism and the relationship to the world; Dada as a result of World War I where the world didn’t make sense anymore. Or the relationship between abstract expressionism and World War II. If you follow that same logic, the relationship showing how the Vietnam War and the Korean War were uniquely American experiences in the same way that Pop Art and Minimalism are uniquely American art movements. So, I’m suggesting that this trend of perpetual documentation as the cultural relic of the war on terror.

This is a photo taken directly from a Google Street View. But this building is called Hawkeye. In 2007, it was discovered that Hawkeye contained about over 300 terabytes of every phone conversation on AT&T’s network. There were 16 Telecom companies that the NSA approached and said, “Hey, we’d like to copy your data stream.” And 15 of the 16 said, “Please, be our guest. Help yourself.” There’s only one company that objected, and that company, interestingly enough, no longer exists.

This building houses 300 plus terabytes of voice information, it’s not meant for human consumption. It’s meant for machine reading. So this is a new piece that I’ve been working on. This image is an installation at The Open Society Foundation in New York
last year. The color in these banners are at this calibration of the color bars and of video and of this noise going in and out, but at the same time, it’s also the image used before an emergency broadcast; you know, when you heard that, it was a signal to be prepared, of this impending danger or warning.

This is another piece. It’s very similar to the piece of this one, but in light boxes, and then here is this detail. And, similarly, we’re looking at this image. This was actually just finished last week at the Tang Museum in Saratoga Springs. What you’re looking at, the black and white images [along with the banners with images from _Tracking Transience_] is a rooftop of the NSA.

So, a few years ago, I was working with this physicist up in Boston, Lazlo Barabasi, who is interested in human behavior. He said, “Hey, we’d love to study your data.” I thought, this is great, so I sent him my data, and he sent me back this image, which, it looks like a geographic map - it’s actually a probability map. He’s actually trying to prove scientifically that I’m completely unpredictable.

He wrote a book called Burst, and I pop up several times in it. But, basically, in this image, it’s this thing of looking. He’s saying, you’re so off the radar, that you’re so off the norm that maybe the FBI did have something right when they pulled you over because you just did not fit any profile.

I’ve been watching a lot of people watching me, and I love the idea of these observatories in Mauna Kea, which is this amazing place in Hawaii. Just watching the unknown out there. This is my log file; all the people that come by my website (and some of you are probably on it) or you can look at your own websites and take a look at who’s coming by.
And you’ll notice, a lot of these interesting names like, you know, like Department of Justice or the Defense Intelligence Executive Office of the President. So, I made a nice little list over here of all the folks that come by on a regular basis. I’m, you know, I’m glad these people like art. Because, I really can’t think of why else they would be coming by and why else they would be coming by on such frequency. So, I’m going to leave it at that. And I guess we should move into more of a conversation.

Annina Rust: So, when you first caught the attention of the FBI, you lived in Tampa?

Hasan Elahi: Yeah.

Annina Rust: And now you moved to Maryland; is there that’s connected? So, like, you moved closer to your surveillance?

Hasan Elahi: Yeah. Well, I in the middle, I lived at a few other places.

Annina Rust: Okay, okay.

Hasan Elahi: But, yes this happened in Tampa, Florida, is where I was taken in by the FBI. But now I work at the University of Maryland. I live just outside of Washington, D.C. And interestingly enough, I don’t know if you followed this, but there was a thing going on around on Vice, that it named The University of Maryland as the number one militarized campus in the country. So, if you were to triangulate the location of the FBI, the CIA, and the NSA, it ends up on our campus.

And this is why I need to kind of help them out, I got to move closer to them; you know? We’re having this budget issue in Washington, we got money problems. So, it’s, like, guys. It’s okay. You don’t have to waste your resources following me. I’ll come to you. I’ll
come to you, and that way I'll be nice and convenient around everybody, and that way I can help them out.

So, yeah, this list, practically every single one of them is in Washington. They’re all inside the beltway. I think it’s interesting looking at that from that direction.

Annina Rust: Did you develop a kind of a Stockholm or is this kind of a performance of Stockholm Syndrome?

Peggy Weil: Since we’re in a museum, I’ll follow up on the question of performance; on what level do you consider both of these sets of pieces a performance, and on what level do you consider it a portrait? Because I think of this in relationship to portraiture, self-portraiture, both personal and societal; you’re really talking more societal in a sense. You mentioned selfies as an artifact of the war on terror. I really think it’s the war photography of the war on terror, this self-surveillance. In what sense do either of you think of what you’re doing a performance or as a self-portrait?

Annina Rust: I think you are just getting started, so you should continue.

Hasan Elahi: There’s a writer at Northwestern University, Joshua Takano Chambers-Letson who wrote this amazing book called “A Race So Different,” about Asian American performance and the law. In one of the chapters, he talks about my project as a performance of the law for the law because I’m performing the legal evidence. I mean, what you’re basically seeing is evidence. There’s no editorializing, everything is just reduced to pure evidence. It’s just the facts.

Is there an interpretation of it? No, no, it’s just the facts so, in a way it reads as a performance. I’m really glad that he wrote that because it even helped me understand it, this work as a performance of the law. But on the other hand, it’s also creating this type
of a safety net. There’s a real comfort that I have knowing that at any moment that there’s thousands of people looking.

So, if my map didn’t update from here, say for the next two days, it just did not update, we’d know that something happened here, and we can very quickly narrow it down to the number of people involved here. So, we’re all implicated, but it’s also interesting because we talk about this idea of performance and this idea that we’re all doing this, whether we’re aware of it or not. We’re all doing this.

Peggy Weil: That refers to the question that Annina brought up earlier, in that case is everything surveillance?

Annina Rust: No, I don’t think that if I look at you that is surveillance. I think there’s more to it, but I forgot what I was going to answer, but, yes, is everything surveillance? I don’t think so. I think that for it to be surveillance, it has to be - you have to make a conscious decision; I think of it more from the perspective of the surveyee; the person online, what they reveal of themselves.

I think when you make these decisions, whether you make them consciously or unconsciously, I think that’s when it becomes or the technology, in a way, enables a certain type of surveillance.

Peggy Weil: It’s interesting where you say yours are unedited, but in a sense, you make a lot of decisions.

Hasan Elahi: They are edited.
Peggy Weil: In Annina’s work _TraceNoiszer_, and in the _SuPerVillainizer_ email piece especially, there’s a sense of self-libel as much as self-portrait. You’re able to call yourself anything from Harry Potter to Rumsfeld; right?

Annina Rust: Yeah, but I’ve actually warmed up to the idea of the portrait. When Peggy first brought this up in previous conversations that we had, I was, like, oh, man, I hate this idea of the portrait because you know, we think of portraits as, like, grey-haired people in I don't know, I'm not quite sure, like, these people who are important, - making a portrait of themselves and then hanging it somewhere, and I didn’t think of what I was doing as portraiture, but I’ve since warmed up to the idea.

And I think that, for example, the villain project, it is like a kind of a portrait of the enemy; like, what this sort of imagined enemy - obviously, not the real enemy, but the imagined enemy. So, yeah, I've kind of warmed up to it I have to say.

Hasan Elahi: If I can follow-up because one of the things that you talk about in this idea of portraiture, and for some reason we’re working as artists, you immediately go to this idea of the image, but when you look at all that data that's behind that image, it’s really that these are portraits of data.

So, when you look at the information in your phone, not only it knows the exact GPS or latitude, longitude, it also knows the altitude, it knows what angle the phone was rotated to, it knows whether you’re moving or not, so it’s only a matter of time before the entire geography is archived, and then we can recreate that image.

Just a few years ago, it was just ridiculous for us to think, “Oh, well, you know, Google Street View, they wouldn’t be driving up every single street.” No, they actually did, and they do it over, and over, and over, and over, and over. So, it’s only a matter of time
before all that information is archived and - and then cross-referenced with this data. So, we know where that data resides so, really, that becomes a portraiture.

For some reason, we tend to think of it as image, but I think it’s only a matter of time before things change, and our idea of what an image is will change because of the data that’s attached to it.

Peggy Weil: We were also talking about the notion of obfuscation, and I leapt from there to the notion of disguise, which is perhaps a better way of expressing my idea of self-libel or self-editing; do you even want to address that?

Annina Rust: Do you edit yourself?

Hasan Elahi: Yes and no. Basically, it’s telling you everything and nothing simultaneously. I’m really interested in this idea, how much noise can I put out and still be hiding in plain sight? That’s really what it comes down to because one of the things that happens is when you look at a lot of these investigators that go look through criminal activity, particularly for white collar crime, one of the first things that flags is the email that says, “Call me,” because that’s when you’re going off grid. That’s when you’re going off target.

But take that even into personal relationships and personal communication. When you don’t answer a text message, why aren’t you answering? Why are you not picking up the phone? Why are you off grid? So, that option of editing, I don’t think it’s possible anymore. I think the question is, How do you embed? And I think this is why I addressed this idea of the soldier embedding warfare. I think that’s very symbolic of what I think we do in communications.
I'm a firm believer in the fact that we cannot just stop with this technology. We're too deep in to get out. It's not necessarily that we're going to be to change this, it's that it will change us, and we just need to be prepared for the types of changes, the new types of interactions that take place when we live in a society where everything is archived and everything is monitored because it's too easy not to do that. So, if you think about it, do you delete your emails? I'm curious. Do you delete spam or something?

Annina Rust: I don’t think, like, the Swiss government, you know, that they keep a record of everything.

Hasan Elahi: Of everything, yeah.

Annina Rust: And I’m sure they keep a record of me now, too. But, so, yeah, I can ask. I thought to ask, you know, for I lost my emails, “Can you, like, give them up, please?”

Hasan Elahi: Or ask the NSA, “Hey, my hard drive crashed; can you send me a backup copy?”

Annina Rust: Yes, yes, yes. But I think that obfuscation, to a certain extent, to bring it back to what Peggy was saying, also suggests an asymmetrical relationship; there’s you and you’re trying to hide from something that’s somehow overpowering or whatever, and has more power than you, and I think that this is not something new in that sense.

Maybe social media has made us hyperaware of this kind of power dynamic, and maybe that’s a good thing. It’s making us - in a sense - more empowered. I think that if you look back historically, and I’m not all that great on history, but if you look back on history, of groups that had to hide and what techniques they used – for example, I just recently
read the book that had an example of how the ANC in South Africa used really crazy systems of communicating, and trying to stay hidden.

They used the internet in ways that were really interesting where they blended in with business communication so they had some of their members who were of these secretive circles with business men, and they passed messages back and forth in the language of business communications. So, I think there are interesting examples everywhere of how people try to stay hidden. I’m not trying to say, TraceNoizer does it in a certain way or you’re doing it by hiding in plain sight, but there have been others, obviously.

Hasan Elahi: Yeah, the ANC camouflaging themselves as a business entity in business communications.

Annina Rust: Oh, no, not necessarily like the communication that was coming, not the -

Hasan Elahi: It’s a communication style.

Annina Rust: It was not camouflaging as a business entity, but some of them - like, for some of the members it wouldn’t have been weird if they had communicated otherwise.

Hasan Elahi: Right. Okay. I’m curious how this works because we’re still in this weird flux between the analog and the digital, and a lot of our lives and a lot of our communication takes place on an analog level, but a lot of it doesn’t; a lot of it is digital, and I think it’s only going to go further and further into that direction.
And I think once we made that full transition over to digital, I think things will be a little different because, a lot of the times for example, people come up to me and they said, “Hey, you know, back in 1977 I got followed around by the FBI because they thought I was a communist and I was protesting Vietnam.” Or, there’s always examples that you hear of people following people - that’s the classic example of the FBI kind of wasting their time. But these days, why bother doing that? I mean, I notice many of you have iPhones. Can we do something just to really creep people out?

Peggy Weil: Sure.

Hasan Elahi: Okay. Let’s do this. So, pull out your phones, there’s a version of an Android, too, but I don’t know the steps off the top of my head - and some of you probably know about the Frequent Locations, but there’s got to be at least one person that this is going to freak out. So, go to your Settings and when you’re in your settings, go down to Privacy; do you see it? Go into Location Services; are you there yet? Location Services. Scroll kind of towards the bottom, and you’ll see a thing called Frequent Locations; are you on it?

Or - I’m sorry - System Services. Yes, System Services. And then go into - I’m kind of doing this from my head. Go into System Services, and then go towards the bottom and you’ll see Frequent Locations. Go in it.

Annina Rust: Mine’s off.

Peggy Weil: I turned mine off.

Hasan Elahi: Okay. Yours is off. That’s good. But for those that are not off, what do you see? And then go into each of those tabs. So, your phone knows not only where
you went and how many times you went there, it knows down to the minute when you walked in and when you walked out.

Peggy Weil: And, if you put your phones away right now - I’m going to ask you a another question.

Hasan Elahi: Yeah.

Peggy Weil: Your phones have to be put away.

Hasan Elahi: Sorry. I made everybody take their phones out.

Peggy Weil: No, no, the phones had to be out for this. Now, I’m just going to ask you a question. What time is it? Did anybody even notice?

Hasan Elahi: Yeah.

Peggy Weil: There’s a lot of information on our phone hiding in plain sight that we’re ignoring.

Hasan Elahi: Absolutely.

Peggy Weil: I’m going to ask one more question before we open it up for questions. I think in both cases, for both of you, these pieces are really interesting in terms of the form you chose for presentation. I’m thinking of your practice as artists. I hadn’t really realized that Hasan’s color bar piece referenced camouflage -

Hasan Elahi: Yeah.
Peggy Weil: Annina’s *The Piece of the Pie Chart*, had a tremendous amount of humor. You were placing the data in a pie coming from a machine that made pies. That’s a different set of work, but it’s a work that we’re familiar with here at the LAB. I didn’t realize that Hasan’s color bars referenced a warning or an advisory. Annina’s work allows the viewer to automatically make her own website, it’s almost a game, like the Mad Lib game that kids play, and using that familiar process to subvert what somebody would find about you. Both of you referencing very familiar forms.

Do you want to talk about the forms you chose to present this in in any level? Your choice to take the process or the image from everyday objects or in objects from camouflage, or from television, or from domestic work, or from disco. Do you have any comment on the forms that you chose to present these ideas?

Annina Rust: Oh, I have interventionist work, and non-interventionist, and I think I’m somewhat impulsive so, I don’t really remember how I made them, just like, in the heat of the moment, you know, this has to be made, like and the forms that I put it in - so, way back when I worked mainly on the web, and now I make more objects and I’m interested in electronic objects and actual objects like food and, so, that changed over time.

I don't know how to explain this it's in a way also very much the influence of the language, for example, by the Bush Administration, right? This language that was just difficult to process and to bring it into a different form helped me process it because it was just kind of maddening and annoying in a really maddening way.

The Pie Chart Project, that’s another type of anger, I would say, that I express. So, I have a certain level of anger that I think is very productive, and that kind of makes me produce things. And, so, yeah - anger.
Hasan Elahi: I think in following that up in terms of these types of visual elements and these visual tropes that keep coming back up, there are a lot of familiar references that I'm borrowing. So, when you see this data body, say, moving around in this digital space, that the arrow and the map and the image, that's actually not that drastically different than what Vito Acconci was doing many, many, many decades ago with a physical body through mapping.

Or in the same sense, when you look at this pile of the food or this huge amount of data of just the one food image after another, after another, after another, that's actually a direct reference to a Sophie Calle project where she would eat specific colors on specific days, which then leads to the familiarity of, say, the color bars in that same sense. Or when you look at the beds, you know, it's impossible to make that work and not make a reference to Felix Gonzalez-Torres, but at the same time, the rationale is different. The motivation is different.

And I think that's where the 21st century aspect of this post 9/11 surveillance, the political reality of today. Because I think it's more than just surveillance. I think it's really just the way we live in a completely different way - So, how do I borrow images that are familiar? How do I borrow systems that are familiar? I think this is what goes back to that idea of the selfie.

Peggy Weil: Right.

Hasan Elahi: So, we all take those images, but how many of those images do we look at? It's really the action of capturing that image that becomes important. We can take 3, 400 images a day, but we actually very rarely look through every single one of those and this continuous capturing, this continuous capture, it's not just about that, but there's also a camera right up there that's doing a continuous capture. We have a photographer over here. There are more cameras than people in this room right now
because every single one of your phones has one, and your laptops, and your tablets.
So, once we start adding…

Peggy Weil: This is something that Annina made to cover the laptop camera.
Here, why don’t you demonstrate it? We’ll end on this.

Annina Rust: Okay.

Peggy Weil: Annina and I were speaking, and she called me on a Video Skype and I had to peel the piece of tape covering the camera on my Mac for her to see a video feed, and she said, “Oh, I actually made something for that.” If you see, you might want to hold it up, it’s a little clip that holds an image, in this case. an eye in front of the camera lens on a computer. In a video chat, the viewer on the other end would just see the image of an eye staring back at them. And I thought that was wonderful. And she said, I will bring you one. Now I can take off the blue tape and show you her eye.

Annina Rust: I also have an adult version of it.

Hasan Elahi: But, you know, Annina, the thing that I find really exciting about this is that it’s holding a mirror. It’s holding up a mirror.

Annina Rust: Yeah, I actually have one with a mirror, too.

Hasan Elahi: We tend to think of surveillance as a one-way thing. We tend to think of surveillance as something that is done to us, but we, too, can participate in it, and we can participate for different reasons and different motivations. The power is still there to hold that mirror up. What this eye does - it shuts - it - creates a speed back loop, and in that feedback loop, it just starts recirculating that same information over and over and over in the same way.
You know, there’s not a single photo journalist over the age of 40 that hasn’t had an experience of their film being taken away at some assignment. But on another level, these days you can go ahead a because there’s a video of your camera being taken away and it’s already on YouTube. There’s an immediacy that’s taken place that’s completely changed this equation. So, it’s no longer the little guy is being watching by this big thing. It’s that we all have more of these.

And if there’s enough mirrors that go up or if there’s enough cameras that point back, it changes the tactics of and the system of surveillance, and I think it changes the way we approach the system. So, we’re not powerless in this. We have a tremendous amount of power to change this.

Peggy Weil: And on that note, let’s open it up for questions. I’m going to ask you to come up here because we are recording this and your questions get completely lost if you’re not on the mic. So, if you have a question, please come up.

Annina Rust: If you want to be recorded.

Peggy Weil: If you want to be - and if you don’t want to be recorded, feel free to ask quietly.

Hasan Elahi: You can text it.

Annina Rust: Yeah.

Audience Member 1: Do you think technology is going to make us all fascists and what can we do to stop that because we’re losing our freedom?
Hasan Elahi: Okay. I missed the first part. Technology is -

Audience Question: Leading us to becoming fascists.

Peggy Weil: Is this a statement or a question?

Audience Question 1: Do you agree with me?

Hasan Elahi: Well, I don’t know. I don’t agree with that at all.

Audience Member 1: Why not?

Hasan Elahi: Well, I think maybe we should ask somebody in Egypt or Tunisia, and ask them what happened; you know? When we can overthrow a dictator that was there for over 30, 40 years and that technology has helped take that over.

Audience Member 1: This is in the present. I’m talking about the future.

Hasan Elahi: Yeah.

Audience Member 1: The way things are going.

Hasan Elahi: It’s, again, it’s how we control it. It’s - it’s not necessarily that technology does -

Audience Member 1: Are you in control?

Hasan Elahi: You are totally in control over it.
Audience Member 1: Give me an example.

Hasan Elahi: Well, basically, there’s just the exact same example that I used just a few minutes ago; historically, you’d have the film taken away and no one would ever know what happened at that site. Now, there are so many videos - we saw Libya firsthand while it was happening. When we’re seeing this in Syria today, I mean, there’s no way that information would have gotten out - what’s happening there - had this been say, you know, 20 years ago.

Audience Member: You’re being desensitized. You’re losing your freedom.

Hasan Elahi: No, no, absolutely not. You tell that to somebody that has an artificial heart, that the mechanization of the robotics of their body has made them de -

Audience Member 1: There’s pros and cons. L.A. is like an abstract painting beyond Jackson Pollock. Now, if you digitize abstract art, you don’t have abstract art anymore. So, you’re losing some freedom, and you lose some possibilities. And I think technology is taking away a lot of freedom that’s not been maximized yet because with the glass wall that we don’t see, somebody getting power saying, I’m going to shut this - we’ll shut it down, and you realize you’re in a grid that you can’t move around.

I see a lot of freedom being lost and people not being, in my opinion, honest about the depth of what we’re losing and what we’re gaining. Unless we protect our freedom and our privacy, what else do we have? I’m looking at it from a philosophical standpoint. And then who said that the world is flat in the 21st century? The writer for the New York Times.

Hasan Elahi: Yes, Tom Friedman.
Audience Member 1: Tom Friedman. So, now you have some movement, and you have some change, and you have people taking political space and making rational statements - have you read the Black Swan?

Hasan Elahi: No.

Audience Member 1: We’re predicting things that’s unpredictable. And the possibility is so far-fetched - we do know, in my opinion, that we’re losing something. And I think that the - as we gain something, we’re losing something.

Hasan Elahi: Okay.

Peggy Weil: Thank you.

Audience Member 1: Thank you all.

Audience Member 2: You were talking about how we’re in limbo between the analog and the digital, and I’ve had a lot of conversations with my peers who are in my generation and how we’re the last to have experienced both the analog and the digital, and there’s somewhat of a social responsibility that I think comes with that. And in one of my art history classes, we read the critic, Dave Hickey. He was talking about how art civilizes us. And, so, I was wondering how you think that our generation should take on that responsibility.

Annina Rust: Okay. That’s easy. No, I think that, whether it’s analog or digital technology is always linked not necessarily in expression of but linked to the culture where it’s produced, right? So, it’s not like just because there’s a different set of technologies, but that because you can take selfies, you’re suddenly like a totally
different set of humans, or because you grew up in a selfie era that you’re suddenly a different set of human.

What I was trying to say with the disco project is that it’s always an expression of the culture that it exists in. So, if we have cultural norms that somehow make us do things that I don’t think that that technology can necessarily be liberating by itself. It requires a culture to be there that brings forth that liberation. So, I’m not sure if I answered your question, but maybe it gave Hasan some time to think about it.

Audience Member 2: No, I think I understand what you’re saying. I think I’m more concerned with the fact that, like what you were saying with the rapid amount or how quickly we’ve gotten into immediate communication, I think that there’s a different dynamic than there was in the past, and I’m referring to that.

Hasan Elahi: Well, the speed that we learn things is amazingly quick, as human beings we’re incredibly adaptive. So, you have the technologies that move at a specific rate of progress, and then we do pretty well keeping up. The problem is when we talk about policy and maybe because I live in the D.C. area and I work inside the beltway that this concept of policy keeps coming up but that is real.

When you’re dealing with email laws from 1982 and you’re dealing with Federal Telecom laws that were updated in 1992 from 1937, this is hugely problematic. I was asking Annina earlier today, what do you do with your spam? Do you delete emails? One other reason I showed you that Hawkeye building, the AT&T data center, which, by the way, is at the corner of Third and Folsom in San Francisco.

The next time you’re up there, check out the building - there are no windows. Those are vents. It’s a gigantic, like a 20-story tall hard drive. When every one of your phone conversations is archived there, when you’re having that conversation with grandma,
does that conversation belong to you, does it belong to grandma, or is AT&T licensing you the one-time use of it?

Audience Member 2: Right.

Hasan Elahi: We don't know because we've never had to deal with that in the past. Data storage has become so ridiculously cheap. You could buy a terabyte drive now for $40. There was a time when you'd pay maybe $1,000 for a 1 gig drive and now that comes in a keychain. You can't even buy a 1 gig drive because it's too small. So, if you think about that, ask, do you delete your spam? Or does Gmail just do something with it and...

We don't even look at it. It's just there. So, sometimes, you go into your email or you're going somewhere and you search something and something pops up, and you just completely forgotten about it. You may have had this experience. So, that is this idea of never having to forget.

We've had thousands and thousands and millions of years of getting used to things, forgetting, mourning, forgiveness. So, what happens to a society that no longer has a need to forget because everything can be called up?

Audience Member 2: We might lose the ability..

Hasan Elahi: An ability to forget, yeah. So, we no longer even have the need for the ability to forget. And I think that's a real huge philosophical change -

Audience Member 2: Yeah.

Hasan Elahi: I think for the 21st century; it is this thing that everything can be called back up. Many of us, before our phones, we used to remember, maybe hundreds of
phone numbers off the top of our head. Do you remember those days? How many do you know now? I actually have to check my parents’ phone number. Oh, wait, is that the right one I’m writing? There’s only, maybe, three phone numbers that I actually know off the top of my head.

Peggy Weil: But I think you asked a question -

Hasan Elahi: Yeah.

Peggy Weil: - about the role of art…

Hasan Elahi: Yeah.

Audience Member 2: Yeah, spinning more into the role of art, I see exactly what you’re saying, and I’m saying, how do you respond to that philosophical change through art? Or as artists. As a way to civilize it.

Peggy Weil: You’re both practicing artists.

Audience Member 2: And I don't know if there’s an answer to that question.

Peggy Weil: And you’re an art student?

Audience Member 2: I am an architecture student.

Annina Rust:  Thanks. So, can you rephrase the question? No, can you restate the question? So, there’s been a philosophical change from -

Peggy Weil:  I think he asked about the role of art.

Audience Member 2:  The the role of art -

Annina Rust:  Of the role of art.

Audience Member 2: - in the change that the digital world has provided my generation.

Annina Rust:  Okay. I think that we create the kind of a relationship between humans and technology. And we try, like, this eye; instead of just covering up the camera, we - we think of ways how we can creatively create; create technologies that speak to other technologies or speak about technology in general. At least my approach that speaks about technology. I don't know if this is or was the answer you were looking for.

Audience Member 2:  No, yeah, okay.

Annina Rust:  Okay.

Hasan Elahi:  I think artists have an amazing level of agency that other professions may not necessarily have, and there’s a level of engagement and ability that we have as in the forefront of cultural shifts and changes in society. So, whether you look at, say, Goya’s black paintings or whether you look at Pollock, all art was contemporary art at one time. We can go back thousands of years even to the cave paintings. In a sense, artists have always been at the forefront of these huge societal
changes. And I think, we kind of have this responsibility of doing that and continuing that. There’s an incredible level of agency that we have and a level of experimentation that we can offer. Whether it’s the right direction or not, that’s a whole different conversation. But I think the fact that we have the capacity of doing that is incredibly powerful.

Audience Member 2: Thank you.

Peggy Weil: Great. Any other questions?

Audience Member 3: So, this piggybacks on your photograph of the AT&T building because what I think I’ve heard in some this discussion is this sense of there’s a new form of governmentality that’s emerged as a result of digital technology that’s produced a new sense of self and, therefore, there’s this kind of anxiety about changes and definitions of what is freedom and what is resistance, but a lot of that is being framed in relation to a state.

So, you’re invoking the selfie as the effect of the war on terror, but as Bruce Schneier, who is a big encryption activist - not a very famous person, but in certain geeky circles he is. He said the NSA didn’t wake up one day and decide to surveil the whole of the U.S. or society. It woke up one day and realized that corporations had already done so, and it just wanted a cut. It just wanted a pipeline into what was already being generated.

So, one of the things I’ve been wondering while listening to this is whether and to what degree this also is a new moment in the history of capitalism that is worth theorizing, critically reflecting on so that the question of just autonomy versus the state can be decentered, and we can also think about how these surveillance technologies are also forms of producing value.
Hasan Elahi: Yeah, absolutely.

Audience Member 3: Right? That this is commodification, the marketing of the self, but also in many ways this new kind of bizarre growth industry. What kinds of arts interventions are addressing that?

Annina Rust: Okay. So, arts interventions, yes, you can question the logic of surveillance. You can hold up the mirror. Obfuscation practices can also be practiced – there’s this great new book called Obfuscation. The first half is all about different obfuscation techniques. For example, my example with the ANC is from that book.

I’m not really answering your questions, but because you were talking about cryptography, the book talks about the difference between cryptography - this idea of building a stronger wall around you or obfuscation as another technique.

What I really thought was this type of brilliant reduction was that cryptography can be calculated; you can calculate how many years it will take to break a certain type of code, or what would be required; whereas obfuscation cannot be measured. It’s much more fuzzy. So, in terms of what kinds of art interventions, I don't know. What was your question again?

Audience Member 3: Oh, it was about whether we could think about surveillance technologies in relation to capitalism and whether and to what degree you know of artists who have already done that work.

Annina Rust: In relation to capitalism. I think Hasan thinks about that more - no? Because you talked about value and the value of the data. Obviously, you’re valuable to Facebook if you’re on Facebook or Instagram because you’re basically doing the work
for them. You’re producing content that other people will watch. There are people that make art about that. There’s this project, *I know Where Your Cat Lives* by Owen Mundy. It basically shows pictures of cats and maps them. As the title of the work says, this project is about data, the data that’s in the image and the fact that you can pinpoint the exact location where a picture was taken, and it’s a somewhat of a menacing notion - the title says - says it all. Anyway, I’m explaining way too much here.

Hasan Elahi: No, I love Owen’s work. I think that *I Know Where Your Cat Lives*, (it’s iknowwhereyourcatlives.com is a genius work, because, you know, cats invented the internet. We know that. And if it wasn’t for cats, we wouldn’t have the internet. But, in addressing your question about the public and the private, for some reason we were really appalled to find out….actually, maybe I shouldn’t speak for everybody, but I think quite a few people were appalled when we found out the NSA was actually looking at your data, and holding your data.

And I was, like, how could they do that? I think that was the reaction from a lot of people. We know they *can* do that, but the ethical implications were, “How can this governmental agency do this to its own citizens?” And, yet, when Google does it, it’s totally cool. Actually, we give it to Google. I mean, we just give it to them. And on the other hand, I think a lot of it has to do with this idea of materiality and immateriality. We tend to think of material with a different set of values in the immaterial.

Iggy Pop had this amazing lecture recently, about how he’s talking about music. By the way, Iggy Pop actually has had to recently take a day job to pay his bills. He works as a DJ. And if Iggy Pop can’t make a living off his music, what does someone starting out have any hope for? I don’t want to go down that direction, but I view this as important because if you think about your Gmail, have any of you exceeded your Gmail accounts or your amount of space? When you do, most people don’t want to pay for that. We want this free. We want this immaterial information, this service, for free. But, you know,
we don’t go into Starbucks and ask for it for free. So, the physicality has a value, there’s a actual, tangible value that we attach to it; whereas, with the immaterial, it’s easier for us to not think about it. And then well, you become the product.

Bruce Schneier, who you mentioned earlier, he's got this beautiful thing pointing out, “so what Google reads your email. It’s kind of like your dog watching you naked.” It doesn’t bother you that your dog is watching you getting dressed. It’s a really important issue there because at the end of the day, what is of value?

It’s like what we were talking about earlier, this transition of analog and digital. We still haven’t fully figured out the value of digital entities and digital beings or digital information. We know there’s value in it. We just don’t know how to value that. And this could be a reason why you see these wild fluctuations in tech companies back and forth; it’s all perceived value.

I think it’s something that we’re going to learn how to deal with. I don’t think we’ll have an answer right away. But I think it is something that a lot of artists are able to work with because we work outside the traditional norms, and we work outside the traditional systems. And we can have this conversation without the risk of losing 10 billion dollars in a tech company. I think there are certain things that we can do so, that’s a different way of looking at that.

Audience Member 3: Thanks.

Hasan Elahi: You’re welcome.

Peggy Weil: One more question.
Audience Member 4: This is for Annina. You had some trouble summarizing your reason for why you think not everything is surveillance. I know that there’s an argument that surveillance is sort of a type of male gaze. I’m wondering if you think about your work or this kind of counter-surveillance work in a feminist framework or a cinematic framework.

Annina Rust: Yes. I have thought about it. Initially, the projects that I’ve showed, they basically cover the whole time that I’ve been making digital art. And, so, from, like, the very beginning to the end, no, not the end, but, like -

Peggy Weil: The present.

Annina Rust: The present, yes. I’ve also changed. In the beginning, I was very much trying to fit in. And then I think that I would have never thought about myself as a woman, and I was really trying to not think about that because it’s, let’s say, a male dominated field, and in the beginning, I was really trying very much to fit in. And the first couple of projects are very much that kind of work.

And now, for example, through my work with Amy Alexander (I didn’t make the disco project by myself. I made it with somebody else). The first project, TraceNoizer, was made as a group under a pseudonym, and we really specifically chose that because we somehow didn’t believe in the artist this. We believed in the collective. At this point, I believe much more in myself as a able to be out there as a woman to prove that, in fact, there are women. So, I would never use this kind of pseudonym again.

I think that to understand surveillance in that way has taken me some time, I have to say. So, through my work with Amy, I’ve started, like, seeing surveillance also in that way; we’re all putting on a kind of exhibitionist performance on Facebook, or Instagram
or Twitter or somewhere else; we're putting on this exhibitionist performance. I know you are putting it on somewhere on social media.

But the question is what kind of exhibition; what kind of norms are this driven by? In what way are we in a way like the victims of our own cultural aspirations, like to be super pretty, or to be perceived as responsible, or to be perceived as in why are we doing this? So, it’s this sort of questioning which leads to more self-questioning. I hope this was a good answer.

Audience Member 4: Thank you.

Peggy Weil Thank you very much. Good night.

End of recording.