

TECHONOMYNYC

Authority in a Networked World

Speakers:

Rachel Maguire, Research Director, Institute for the Future

Gary Marcus, Professor, New York University

Eli Pariser, Co-CEO & Cofounder, Upworthy

Moderator:

Jessi Hempel, Head of Editorial, Backchannel

(Transcription by [RA Fisher Ink](#))

Hempel: Hi, I'm Jessi Hempel. I'm pretty sure Simone loves this panel because she hates authority and would like an impressive discussion on how to tear it apart and rebuild it. But let me tell you who we have with us. We have Rachel Maguire from the Institute for the Future, we have Eli Pariser from Upworthy, and we have Gary Marcus, currently affiliated with NYU, always affiliated with NYU. I am Jessi Hempel from Backchannel, and when Simone and David were first thinking about this topic and thinking about how to have a conversation about authority, we began to think about how authority in the twentieth century was prescribed. It came from institutions, it came from experts, we universally decided who those were and it was top down, and we've seen that become entirely disrupted over the last twenty, thirty years. And I think that we've hit peak distrust in authority but, even as I say that, I worry that I actually don't know anything, like we're going way up over the mountain, and that's what we want to talk about today. But in order to talk about that effectively, I think we have to start by defining our terms. Guys, what is authority?

Maguire: I am. I am the authority on authority, clearly. [LAUGHTER]

Hempel: I'll take that, Rachel.

Maguire: So, I come from—I spend a lot of time thinking about the future of health and healthcare, so the lens I'll bring often to this conversation will really be about what's changing in authority when it comes to how we pursue and produce health. But broadly, I'd say we're moving from where authority was conferred or authority has the right to command—historically, I think it's been structural in nature. That we had structural authority, which is that you had the right to command by your position so to your point, institutional, but it was also what scholars call sapiential authority, or knowledge-based authority, and certainly in healthcare one of the key transitions that we're undergoing when it comes to who has authority, not necessarily power, but authority in healthcare is really around that changing knowledge around what in effect actually does produce good health and so do the institutions or the entities that have authority in health today actually have sapiential or the knowledge that's needed to maintain that authority over the next decade.

TECHONOMY NYC

Hempel: I know that you have a framework for how to think about it and I want to talk about it that but before we do I want to ask broadly, do you agree, both of you, that authority to date has been, and tell me if I'm getting this right, largely about who has the knowledge and that has been mostly determined by your affiliation with an institution?

Pariser: No, just the negative. I'm not a social scientist but from what I understand of how trust in authority, what it does for us psychologically. It's helpful to go back a couple thousand years, or a couple of tens of thousands of years, and say what are our cognitive structures built around and a lot of them are built around making very quick assessments of who is on my side, who is not on my side, who has my interests at heart, who doesn't have my interests at heart.

Marcus: And who knows what they're doing.

Pariser: And who knows what they're doing but I would argue that the question of competence is an interesting one to interrogate because it's not about access to knowledge per say as much as who is going to protect me when someone's attacking me. I still think that that is the primary lens through which many bonds of authority are created and then I think there's a sort of technical domain that you're speaking about where we have a totally different way of conferring authority. In our normal lives trust is built through your being on my team or not on my team, and acting in my interests or not in my interests. That's all kind of playing out as we see authority decenter because we're replacing a procedural way of building authority with one that is actually much more familiar, which is person-to-person, do I trust the person who shared this piece of information rather than do I trust the process by which this piece of information was made.

Hempel: There seems to be you're not that far off. This centralized version of authority

Pariser: It's more interesting if we disagree.

Hempel: Yes, it is, I appreciate that. We need that in the middle of the afternoon, too, maybe you don't have coffee in front of you.

Pariser: Yes.

Hempel: Maybe you're adding a historical lens, which is it feels like this centralized notion of authority is being disrupted then we have to keep in mind that authority hasn't always worked this way and maybe, in reality, it doesn't work this way.

Marcus: I'm with Eli in thinking that the brain can be shortcut. We evolved in an environment where we wanted quick information about all kinds of things. For a very long time no individual has been able to do everything so we've been in a position where we're reliant on others and we have to make snap judgements about who to rely on. Maybe we get some data over time: this is the person, the leader of my village, or something like that, are they reliable? But we often use shortcuts to say "I can't do this myself." I'm a scientist, among other things, and as a scientist I have to do this so I can't do every single experiment myself. I have to decide which

TECHONOMY NYC

other scientists are doing good work or maybe not doing good work. I make decisions like this all the time. We almost never make them on the basis of enough data.

It used to be, not too long ago, that I could trust, say, *The New York Times* or something like that. Now, I get a lot of my information, say, from Facebook, and maybe there are different standards there but the brain is still kind of grasping for that quick fix about, “Okay this is where I get my information from, I’m good to go. I’m not going to analyze every single piece of information individually. I’m going to be comfortable because Google or Facebook gives it up to me.” I think that probably part of why we’re talking today is that we have a new kind of centralization of authority which comes from places like Google and Facebook. They don’t pronounce, “Hey, I’m the authority,” but we implicitly assume as we visit their sites that they are authorities and, of course, this has come into question, as well it should in last few months.

It should have come into question for longer but I think part of the question is that there’s a new regime here for where people get their information from and what they trust and how they decide what they trust. I’m not sure we’re that well equipped as a society to know. I remember a study I reported in a book I wrote a few years ago called “Kluge.” The study looked at children and websites. This was about 2008 I think. Children trusted the sites based on how good the graphics were. The implicit assumption is that if the graphics are good, they must have money, they must have put this together right. We all know that this is not actually a good metric but what are adults using now? I’m not sure they’re so much better. It’s like, “Well, my friend posted on Facebook.” They’re not even thinking about that Facebook has some algorithm to serve up the things from the friends that most agree with them.

Pariser: And there’s plenty of research that says adults make those same snap judgements when it comes to fake news and if the website looks credible just from a design perspective, then they’ll buy in. My point was, as a group of highly-educated rationalists—I’m going to go out on a limb and guess—it’s easy to forget how non-rational authority is in many domains. In fact, many of the shortcuts you’re describing are actually the opposite of what we know empirically about where competence comes from. There’s a Harvard Business Review study that was circulating about leadership and it turns out that the most effective leaders tend to be kind of quiet, consensus builders, tend to have a lot of traits that female leaders have that men may have less but that we think of leadership, our cognitive schema for leadership is kind of a hard-charging narcissist. I’m not making a political comment here. What we think competence looks like and what it actually looks like are two very different things and our brains mislead us on that.

Marcus: The simplest version, very quickly, is that usually the presidential candidate that is taller wins. This is a short—sorry—a simple metric that you can use and it’s not a very good one, it’s not correlated with reality.

Hempel: This does not bode well for women in presidential elections.

TECHONOMY NYC

Marcus: It doesn't. We have brains that do that. There's a question that if we know that our brains keep gravitating toward these superficial cues of what we're going to do about it, which really brings you into things like education.

Hempel: Right. Well, let's put a pin on that, I want to come back to Rachel's framework for thinking about the new ways that authority is rearing its head in the healthcare system specifically.

Maguire: Just observationally, having spent a few years thinking about this, certainly trust is different in our minds from authority and so really thinking through where do you need trust to have authority and where is authority conferred through other mechanisms. Similarly, with expertise and authority, not necessarily needed in all spaces but maybe there are some spaces where expertise or knowledge is needed. So just sort of noticing that we sometimes use language, we substitute words where maybe we should unpack that a little bit.

In healthcare, what we are recognizing is that if structural authority and sapiential or knowledge-based authority is being challenged by lots of forces that are shaping the next decade than where do we see emerging sources of authority? We argued that there are four emerging or reemerging sources for authority when it comes to the future of health. The four areas were computational, so we can talk together about what that might mean but really the idea of being able to quantify health in really radically new ways, scale it very large, and also very granularly. All of that sort of a new knowledge base, new area to inform how we think about health. Networks, Johnson & Johnson were just up here and they know a lot about the power of networks to inform how we make health choices and where we get information now.

Facebook was at Techonomy Health yesterday talking about their play in healthcare so I think everyone is aware that networks are becoming an increasingly important source of authority in healthcare. Ambient authorities, so whether it's big data analytics or it's just understanding social determinants of health or environmental determinants of health better. This is a new area of expertise and perhaps authority over the next decade in health. Finally, and probably most critically, and this is where I think you guys have a lot more to say than I do, is narrative, the power of the voice in a really data-deluged future, who can tell personal narrative stories, institutional narrative stories, and sort of society-wide narratives in a very compelling way that can be an area to derive authority from in healthcare, at least, in the next decade.

Pariser: Can you just speak to the difference of authority and trust a little bit?

Maguire: In healthcare, sometimes they overlap but sometimes you just have authority. In healthcare right now, it's a who not a what that certifies illness. Whether or not you trust that authority as the right person or entity to be certifying illness and determining treatment protocol, doesn't matter. That is the authority that certifies illness. There might be other areas where trust is crucial to recognizing the authority but, at least in healthcare, it's not required.

TECHONOMYNYC

Hempel: Is that something that's going to change over time? I think about it. I recently was pretty sure I had a sinus infection and so I went to my doctor but before I got to my doctor I spent a good long time on the Internet and I'd like mapped that thing out, and then I got there and the doctor's like, "You don't need antibiotics, and I was like, "Yes, I do." She's like, "No, you don't." Then I went home and called a friend who is a doctor and got antibiotics, and got better.

Marcus: You got better but the virus got better, too.

Hempel: We don't have to unpack my psychology let's unpack the decision itself.

Pariser: There's a serious issue about tragedy of the commons, though. What's good for the individual patient isn't good for the population as a whole. The reason antibiotics are generally not prescribed by the doctor is because of the resistance that the bugs themselves grow.

Hempel: Gary, I agree with you, but the interesting part of this, for this conversation, and it impacts that, is medicine's not working if I'm making that decision. Authority is not working in medicine if I'm making that decision, right? How do we grow into a world where it works again, not just for me the individual, but for us collectively as members of a democracy?

Maguire: I'm punting, but I will say that certainly in our view, structural authority is being chipped away at in healthcare, because of things like that, because people are relying on other sources than traditional sources of authority and expertise in healthcare. Whether or not existing, and entrenched, and incumbent sources of authority are going to relinquish their power, the power that has come with the authority that they've had—not for very long, to your point—maybe for one hundred years. That, I think, is to be questioned. How that happens is probably more for the social scientists in the room that understand how we actually take away power that we have assigned through authority, or conferred through authority, and give it a new or reemerging entrants like networks of trusted peers who may have a better idea of how you personally should manage your health.

Hempel: Fair enough.

Pariser: I don't know that this fully answers the question, because it's a big one. I think there's a clue in the research of a guy named Ron Engelhardt, who looks at how values shift across societies over time. He's been doing this study since the 1960s or 1970s across 60 different countries, looking at how much authority in and of itself is a value popularly. One of the things that he found is that there's this very predictable pattern, which is that the first generation that was raised without fear of physical deprivation, they weren't going to be hungry some night, had these radically different values that geared much more towards self-expression and autonomy and away from authority. Which again, if you accept that cognitive framework that we mainly use authority when we need to be safe. If we feel at some level essentially safe, then maybe we shift our energy to other areas where we're going to find safety. I'm not saying that we actually are safe, and I think that gets to some of the problem, which is: We live in a society where we're

TECHONOMYNYC

not very likely to die on the spot and the doctor is going to come in and save us. Maybe we care less about what the doctor is saying, and the doctor's role in society.

You could argue that that's happening across a whole bunch of different pillars where, not necessarily to say that it's a correct assessment, but the fear that drives some of the need for authority has dissipated and we take for granted a bunch of things that are provided to us by that managerial air, and the authority that lives in it, without really buying into it. If you accept that, then we're in for a reality check, which arguably is what we're seeing. I would say, in the media, we're definitely seeing that.

For a set of economic and structure of media reasons, we've happened to have had a media system that more or less combines some sort of buy-in to a process of journalism with distribution power. Now those things are completely coming apart, and your journalistic competence has nothing to do with your ability to reach an audience. That's not because people had some—Maybe people never bought into that in the first place, maybe people never were willing to choose something that was well-generated over something that was entertaining. Maybe we just had a system in the middle that did that work for them and now that system is going away. To me, the question then becomes how do you build structures that have that level of trust, that work in a networked environment? I don't think that's an easy answer but I think it probably exists in bringing these relationships down. I'll give an abstract political example or I can give it later.

Hempel: No give it.

Pariser: The conversation of there's a lot of people looking at this idea of proxy-based democratic process. This is an idea of, instead of electing a representative, I'm going to give Gary my vote on AI, because he seems smart about this stuff, and he's going to vote for a group of people on that. That kind of system, because I have a trust bond with Gary, may be more resilient, and more able to confer trust on the ultimate decision that's made, than one where I have a very abstract relationship with a representative that I'm only buying into because of their political party. I think, if you could bring trust closer and find ways to aggregate it—

Hempel: Localized trust?

Pariser: Or bring it down a level or two, so that it's not somewhere up in a bureaucracy, but that in one way or another, I'm deliberately investing in my trust relationships on particular domains in a way that feels more valid. I could go on, but—

Hempel: Even as we have this conversation, our technology is taking us to a place where we're less able to understand and unpack how we get to any decision. AI is about to make that a lot more true. That also shifts authority, it shifts in particular who has authority. Now that there all these invisible places where there is authority that we're starting to talk about after the fact. We're talking about the ethical implications of AI and how did that bot become a racist? Oh, it's because humans are racists and the people who created it didn't think through it in a way that

TECHONOMYNYC

we as a society want them to think through. Gary, AI is your sweet spot, I would love to hear your thoughts on who holds authority that maybe we're not thinking about.

Marcus: Programmers hold the authority now. Programmers and people who run the large corporations. I was just thinking prior to your question about the difference between Wikipedia, which I trust, and Facebook, which I don't. There have been empirical studies of Wikipedia and it's pretty good. It's on par with Encyclopedia Britannica and I don't think there's anything better. I think Facebook rather indulges my perception of myself as a know-it-all, because it feeds to me pieces by other people who agree with me. This is probably not as reliable as Wikipedia. Somehow there are what AI people would call cost functions or optimization functions—things that are being optimized. Wikipedia is doing its best, I'm not saying it's perfect, but I give them money every year. Wikipedia is doing its best to optimize truth. It makes some errors along the way and it sacrifices certain things. It doesn't do a good job of discussing complex issues, but it does a pretty good job of alighting on truth. Facebook chooses not to optimize that. Maybe there's some pressure on them now to do that, but what they've been trying to optimize is eyeballs.

There are some programmers at Facebook who presumably help in accomplishing that mission and Zuckerberg picks what the mission is. He could have a different mission and I think you could read him as somewhat changing the mission in light of the recent election. If you're asking, "Who has the authority?" Well, it's the people who design these systems, and say, "What is it that we're going to reward the system for doing?" Especially if you're talking about a machine-learning system, effectively you're rewarding it for doing something. Just like you could reward a rat or a pigeon in an experiment, you're rewarding your AI system for serving up a particular kind of answer that you want. You can decide, I want to maximize eyeballs, I want to maximize truth, and there are different algorithms that you can write. Most of those algorithms, for now, are opaque. They're owned by the companies, they're not publically available.

Wikipedia actually says something about the algorithms that it uses, so that's relatively transparent. Facebook algorithms are relatively not transparent. Google's algorithms are not transparent. Google is an interesting case, because there's a whole industry of people trying, essentially, to cheat the Google algorithm. That's what Search Engine Optimization is, is ways of trying to get their stuff to—I do SEO on your website, I'm trying to make your website more popular than it is, and that's like trying to reverse engineer the authority system that's built into Google. There's an arms race around these optimization functions.

Hempel: Let's talk about Wikipedia a second, because you brought it up. It's fairly good, it's not spot on. It's more consistent at some things than others. It is reviled by the far right, who feel abandoned by it. And yet, there are AI systems that use Wikipedia as their base-source for knowledge. I was just at Microsoft looking at some things that they're doing with Cortana and the very cool things that they're allowing teachers to do in their classrooms with students being able to build PowerPoints that pull knowledge and they only pull from Wikipedia. That caught my attention because I was like, "But wait a minute, a student coming into a classroom—and this

TECHONOMY NYC

isn't to pick on Microsoft, by the way, it's to make the example—a student coming into a classroom is going to use this tool to get to knowledge, is not going to have the context or understanding that I have for what Wikipedia is.” As good as it is, is it fair to call it the source of all knowledge?

Marcus: No, certainly not. I can run down some ways in which it's quite weak. I actually looked at my own Wikipedia entry the other day, something I should've done for the last few years.

Hempel: I did it this morning too, by the way.

Marcus: It's wildly out of date. I just launched a business, sold the business, that's not mentioned there. It was a three-year effort, and it received significant media coverage, but nobody bothered, and I didn't bother yet. Maybe I will eventually, but it's very out of date. As I said, it's not very good on disagreements. Where there are disputes, they get labeled but it doesn't give you much more than that. There are all kinds of problems with their model. I was just comparing it, relatively speaking, to Facebook. I would probably actually give a little more trust to a Wikipedia entry. I would not, by any means, want to give any single source of information unique authority. I don't think that would be a safe bet. It's one source among many. One of the things we need again, I mentioned education, and I'm going to unpin it off the board. I think it's incredibly important. We have an opportunity right now in society to move to a much more data-driven regime, which is great. Let's not just put in the taller person as president, that's not a good idea. We can move on. We are in this driven-by-data society.

There's an old book called, “Lies, Damn Lies, and Statistics.” Now we're living in an era where people lie through statistics more than ever before and it's easier to lie through statistics more than ever before. The only remedy for that is to have educated consumers who understand, consumers of quantitative results and understand all the different cheats you can do. My favorite cheat that I learned about in graduate school that I always call people on if they do it is you run your axis not from 0 to 100, your y-axis not from 0 to 100, but from 50 to 100. I give a talk about big data and Google Translate. The first paper on Google Translate said, “Look, the more data we get, the better,” and the graph ran from 47 to 52. As they got six billion words, they went from 47 to 52%. I replotted it from 0 to 100, and you're like, “Well, more data helps a little, but it's basically a flat line here.” You need to have those kinds of mental facilities in your head in order to be a good user of big data. It's great that we have that data and that we have a society that's attuned to it. Unless we educate people in how you think about data in the same way we need to educate them about critical reasoning in general, it's still not a cure. Having the data themselves, even if they're always available, is not necessarily a good thing. You can go correlation hunting for anything that you want.

Hempel: I understand that and I see that the fact of the matter is that AI is taking the thought process out of a lot of what we do so that we don't necessarily even know to have the conversation with ourselves about any given process. Whether it's the news that we're reading, whether it's the healthcare that we're receiving. And yet, the inputs going in to AI aren't without bias. They're controlled by a fairly narrow group of people who are the new authority, but not

TECHONOMYNYC

necessarily named so, or just beginning to be named so. Where can we improve? How do we even begin to have a broader conversation about that, to help a functioning democracy embrace AI without being played by it?

Marcus: I think the first thing is that people have to realize that the illusion of transparency doesn't mean that something's actually transparent. Your Facebook feed is user friendly. Stories pop up, you like them, you feel like this is all to the good, but that doesn't mean that the system behind the curtain is doing what you want it to do, or that you have any control over it. I think it's just very easy to take pre-digested morsels and assume they're what we want them to be. This is true for classical media too, right? Some editor decides what's important for you. We should be moving towards a world where individuals have tools to adjust some of this for themselves. What mix of news would I like that agrees with me and how much do I want to see what the other side actually says. You should be able to have agents that decide that for you, and for various commercial reasons nobody has done it, but you could do it now.

I think a second thing is that people do have to realize that no system is without bias. There's this book, Cathy O'Neal's book, "Weapons of Math Destruction," which is about some of the ways that biases can find their way into AI systems. In fact, there's no way to build an AI system that is without bias. There's something called the No Free Lunch theorem, that says that any system has some bias of some sort or another. We have to be educated consumers. We can't expect that by magic, just because a machine does the computation for us, that it solved the problem.

Hempel: I'm just giving the audience a heads up, we're going to ask for questions in one minute. You each have something to say on that, right?

Maguire: I was actually going to ask a question too, if that's all right.

Hempel: Please.

Maguire: Around algorithmic disclosure in the future, do you envision, either of you—Jessi, I think you should weigh in too, we'll switch roles—a future in which organizations have to disclose? I think Amazon said something like 70 million machine-learned nudges last year, or next year, or something. Is there ever a future where organizations have to disclose what is feeding their system?

Marcus: We can certainly talk about this. There's a right to explanation that's been discussed in Europe and I won't be surprised if that happens here. I think it's a good thing. There's a kind of countervailing trend, which is that the AI technique that's most popular right now, called deep-learning, is not very transparent.

Maguire: I know, they wouldn't know what to say.

Marcus: There will be social pressure over time, and you can already see the beginnings of it, to move towards algorithms that are more transparent, and I think that that's a good thing. I

TECHONOMYNYC

hope we will have algorithms that are more transparent and that people will push for that. Just imagine when we have driverless cars as a matter of routine. If your spouse is killed in an accident and what you get back is a vector of 3 billion numbers, and they're like, "This is why I had the accident." It's not really very satisfying.

Hempel: That's terrifying, Gary.

Marcus: It's going to happen.

Hempel: Eli?

Pariser: I think to the question of—Listening to you I realized that there's an idea from Marx of the commoditization or the fetishization of the commodity. I feel like partly what we're talking about is the same thing with facts or with information. We have this little fact or idea, but it's totally separated from the history of it and where it comes from is erased. That's a bad way to deal with knowledge and a very dangerous way to deal with knowledge. It's exactly what you're describing when you're talking about pulling an arbitrary fact without its history attached. I think that question of context and how do you build context for people, so that they understand, "How did this get to me? By what process did it get to me?" that becomes very important.

I think the second piece is, part of the argument I'm making, and this is not coincidental with running a media company that I run, Upworthy, is I think that the emotional and story component of how we build authority and trust and buy-in to some of these systems is really important. The conversation of, "Are we going to be rational and fact-based or are we going to be emotional and story-based?" that can't be the conversation or the rational fact-based side will lose and I very much don't want that to happen. How do we make the arguments for buy-in to these systems of authority and expertise in a way that resonates emotionally and that resounds with the way that people actually build trust and understand the world? How do we tell those stories that give people the context and the emotional buy-in to those systems? We can't rely on that managerial layer to save us, we've got to actually build those cognitive structures anew.

Hempel: To integrate those things.

Pariser: Yes.

Hempel: Let's get a question or two from the audience. We're going to go there.

Audience 1: Authority and trust, and a couple of times Eli you've talked about management and leadership. A lot of times, you think about leadership having authority or being viewed with trust or distrust. In this new world, how do we define leadership? A couple times you said, "The management layer, we have to find our own—" Do we have to redefine what leadership, authority, and trust are?

Hempel: You'll notice no one is talking, they're just deep in thought.

TECHONOMYNYC

Marcus: Well, I'm trying to figure out—I will tell you publicly, within the next two to three months we will have a new president. I could be off by a factor of four, but I doubt it. That's going to have interesting repercussions for society. We will presumably have somebody from the same party, but we will have what I think is going to look like, in retrospect, a travesty. People will do a lot of hand-wringing about how this happened and what could they have done. It's an interesting moment to be thinking about authority in the leadership sense. I think something went wrong last time and I think a lot of things are responsible for it, one of which we're talking about now, which is the way in which media was distributed and consumed and how authority worked there.

Maguire: My two cents would be that sometimes we're too fast to assume that access, whether it's access to information or maybe even access to media channels or whatever the case, equates power, and gives you some right to command. I'm not sure that we're there yet. Right now, I think you see a lot of access that has agitated the structures, but I think there's still a fair amount of authority that's still in structural positions. Certainly women and people of less privilege would be the first to say that there's still quite a bit of structural authority in our society. While the access has maybe democratized, we've got a ways to go before we're really going to see authority rewritten, writ large.

Hempel: Okay. I'm going to skip over you for this one and go to one final audience question. Make it quick if you can.

Audience 2: There's obviously a great deal of fragmentation, which we've talked about throughout the day, but one of the reactions to that from a Tavistock perspective would be this notion of oneness that comes out so that the leadership characteristics are part of a dynamic related to that fragmentation. It doesn't mean that they necessarily go away.

Hempel: Let's get to the question quick, because we're running out of time.

Audience 2: I'm just curious, especially for Gary, what's your perspective about the dynamics as we move through this cycle? The requirements for oneness in this group that we call the United States are not going to fade away. They're actually going to stay with the dynamics of the society through that fragmentation. I'm curious to hear where you think the dynamics are going. Will we have greater dependence on authority structures or will the fragmentation contribute to more of a fight-or-flight capabilities? These are all classic Tavistock structures.

Marcus: Unless something changes, we're moving to a more and more fragmented world, where each person can get an individual mirror of their own beliefs and feel reinforced that they're correct. I think we're moving away from the kinds of pressures that would make people do things in collective ways. We don't even have television shows that everybody watches anymore. We're very much in this long-tail era where you can find things that reinforce what you believe, what you like, and so forth. Facebook is a very big distributor of news right now. They might make a decision to change, but the way they have it set up is Facebook has figured out that I don't like Trump and then it feeds me a lot of negative Trump stories. Maybe that turns out to be right, and maybe it turns out, it's at least possible that that turns out to be wrong and I

TECHONOMY NYC

wouldn't know it. Each person can go down their own little rabbit hole the way that things are structured. I shouldn't pick so much on Facebook, this is true too of cable news, where you have a channel for you, and a channel for you, and so forth. We get shunted off in our own directions.

Hempel: We spent not nearly enough time examining this big idea of authority and we leave with one solid prediction for next year and that is from Gary. And that is that by the time you all get here next year we will have a new president. Time will only tell if that is true. Thank you, guys.