Peoples & Things

Season 1, Episode 28

Gemma Milne on Hype

[MUSIC]

Lee Vinsel 00:00:02

Welcome to Peoples & Things,

a podcast about human life with technology.

I'm your host, Lee Vinsel, an Associate Professor of Science, Technology, and Society at Virginia Tech. You can reach me with comments and suggestions at leevinsel@gmail.com or on Twitter @STS_News. I would love to hear from you.

[MUSIC]

Hype. Hype, what happened? I expected so much more from you until a few months ago when air started going out of our current technology bubble, we were living in a golden age of hype. There were some truly, truly remarkable, I would argue beautiful hype going on, especially about things like AI and cloud computing and like crypto, but now there's been a shift. A lot of so-called tech companies have lost a bunch of stock value. Netflix is down nearly 70 percent from its heights, and e-commerce company Shopify is down over 70 percent and they are not alone. Investors are starting to request that companies be profitable and startup leaders are like, eck God, they want us to be profitable? What are they going to ask from us next? That we have a sustainable business model? Holy smokes. Yes, it's hard times

in hype land. Hard times indeed. And I never realized that it would be this extraordinarily, deeply satisfying to see, but let's not get ahead of ourselves. Let's not kid ourselves here. There's still plenty of technology hype around and it will continue to be with us. Thus sadly, we must continue to try to understand it better. One pleasurable entry in this understanding hype genre is a book by science journalist and STS PhD student Gemma Milne. It's called Smoke & Mirrors: How Hype Obscures the Future and How to See Past It. The book examines a series of areas in science and technology from artificial intelligence to fusion power to cures for cancer and the outlandish claims made about their potentials. We also talk about ways in which people can learn to see through hype and have more realistic perceptions. I had a lot of fun talking to Gemma. I hope you enjoy our conversation. Get excited.

[MUSIC]

Gemma, thanks so much for talking to me today.

GM 00:03:25

No worries, I'm excited to be here, Lee.

LV 00:03:28

Smoke & Mirrors is a neat book and it covers a subject near and dear to my heart. When you were out there promoting it and talking about it with strangers, what did you tell them it's about, and what were you up to with it?

GM 00:03:43

Sure. Well, it's about hype. It's about narratives and promises and idealism that you hear about predominantly in the science and technology space, which is the area that I'm most interested in. It's also a book that has nine chapters and each run in a

different area of science and tech. Some people say to me, "Oh, I thought it was going to be all about hype and theory of hype, but I found it was actually had these in-depth, almost like long read articles about different areas in science and tech." Some people love that part of it and some people love more of the theory hype stuff, but I

wanted to strike the balance between

the two and not do a sort of academic hype book but also give something that somebody could start to follow some of those areas of science and tech in the press, read the chapter and then feel empowered to be able to go out and actually have an opinion on stuff or read an article and be like, that's that thing that I read about. Because I think a lot of stuff when you're popular science when you're reading about it's very kind of basics. This is how a volcano works or this is how a battery works or whatever, but that doesn't help you understand an article that comes out in The Guardian or the FT or the Wall Street Journal about some recent investment or by a law that's recently come out. Something like that. So I wanted to write something that allowed people to feel a bit more empowered to play a part and what's going on now in science and tech, but also to reflect on the role of hype in society.

LV 00:05:19

Yeah, I think you strike the balance nicely. You have a pretty simple definition of hype. Like you don't feel like you didn't overly specify it which is good I think. How do you define it?

GM 00:05:32

Goodness. Well, I actually use an analogy which is why it's called Smoke & Mirrors. I think about it in terms of magic. I have this in the book. If you think about going to

a magic show, you walk in, you go into the, I don't know what the theater and you are by being there and knowingly unless you've accidentally walked into a room not realizing it's a magic show, you are consenting to be fooled. You're saying to the magician. It's cool for you to try and trick me. You might try and work out how they're tricking you and kind of work out the sleight of hand, or you might just enjoy the show, but either way, you're consenting. If you're being lied to, you could say that that's non-consensual fooling. You're being fooled and you don't realize it's happening. With hype, I think about it as a thing that can result in accidental fooling. It's a marketing tactic. It's a thing that's used to capture attention. It's not there for understanding. It's not there to convey information. Their really detailed way is a tool that is used to capture somebody's attention, stop them in their tracks, and sometimes that can result in accidental fooling, misunderstanding, misreading. Well, as we know with headlines, it can result in people getting the wrong end of the stick or actually getting not even just having a little bit wrong, getting the total incorrect, I guess understanding of a thing. That's how I think about hype. It's not about it being, I didn't want to berate it and say this is a terrible thing. We need to banish it because it's not possible, but more trying to understand the mechanics of it and how it works, the history of it, and what it looks like nowadays.

LV 00:07:14

Yeah. I'm trying to remember. Have you ever seen Harry Frankfurt's definition of bullshit before?

GM 00:07:21

I think I've read about this in Carl and Jevon's book and it's Calling Bullshit. I think they write about [OVERLAPPING]. We also interviewed them for Radical Science. We were talking about it.

LV 00:07:37

Yeah. It's not lying. It's not the truth. It's speech meant to persuade and move. Sometimes, it can line up with the truth and sometimes it's totally false, but it's really speech meant to move you more than to either.

GM 00:07:57

Exactly.

LV 00:07:58

Yeah.

GM 00:07:58

Yeah, exactly, and I think that's when you realize that hype is there simply to get you to stop in your tracks. What it forces you to do is to then look a bit further. It allows you to get rid of the illusion. The thing about magic is it completely falls down when the illusion is broken and it's the same with hype when you know that it's an illusion. Whether it's an illusion that's to make you feel super excited and that's fair enough because the thing is exciting or not. The point is that when you can get past that barrier, you can then start to go, okay, what are they actually saying? What does this actually mean? What are the actual implications of this, or how do I feel about this beyond the emotion that they are trying to target by using particular words or images or so on and so forth. It sounds like a very simple and obvious thing to say, but the fact that hype propagates suggest to me that that obviousness is not something that we remember on a day-to-day basis.

LV 00:09:06

Yeah, it's so easy to get caught up in.

How do you start working on this book? You're a doctoral researcher now, did you identify as a science journalist before that?

GM 00:09:21

Yeah. Even thinking about doing a PhD was after the book was already out so that wasn't originally part of the plan. That was more of a COVID thing. I finally have time, let's go do PhD. Also wanting to build on the topics of the book. It came from a long career of playing different roles in the hype journey, shall we say. I worked in advertising, which is of course, where hype is created. The business of hype is advertising and for good and for bad, mainly for bad. It was a really interesting schooling in what it means to try and capture attention. Before I did that, I did a master's degree and I was very interested in science and tech, but I felt let's go and give this advertising thing a go because I also have a sort of art side I wanted to try out. When I was there, it made me think a lot about how science has communicated and I was basically trying to think of how science could learn from the world of advertising in order to get messages out in a more interesting way. I remember going to a science communication meet up and it was in London and they were all like, "Why are you here? You work in advertising." I'm like, I'm literally paid to communicate. That is my actual job. No offense to some of you, but you just do this on the side. This is a literal entire industry. I'm pretty sure there must be some crossover here. I find it quite funny that people weren't trying to take advertising 101 and use it for "good" quote unquote. So know your audience. What's the single message? All that sort of stuff. I got interested in science communication in that respect. Then as with a lot of people that go into science communication, they become a little bit cynical, probably very cynical about the very scientism element of a lot of science communication out there and then so on and so forth. Worked in advertising, I ended up in a job that I was doing like corporate innovation stuff so it's been a lot of startups. Obviously, I was hearing all their pitches and going to conferences. If you've ever been to tech conferences, which I'm sure you've been to

many, Lee, you know what it's like for these 10 seconds elevator pitch to sellers, your SaaS tool for tracking tractors or something. I don't know. So I was kind of like in that world and was reflecting on this. What is this hype thing? This has so much power. The same time I worked in an industry that creates it, so how do I feel about that? I end up getting made redundant. They shut the innovation team, very innovative, moved by the big company and I thought let's give this freelance journalism thing a go and then obviously when you're a journalist, you're receiving pitches all the time and your job is literally to try and see through hype, but not to just put your hands up and say, that's rubbish. I'm not even going to listen to you because you've used hype to capture my attention, but rather to try and dive that little bit deeper. The book came from a long time of thinking about my own role, responsibility, complicity in hype and both as a journalist writing about companies and science and tech, but also in the advertising space, but also reflecting on my frustration with people not understanding things properly. Particularly when it came to deep tech and science, which is my area of interest. It started off being this kind of angry book, but the more I thought about it, it was like, actually, I think there's a bit more to this than just being like, don't read the Daily Mail. Hype is very interesting as an invisible hand or whatever you want to call it.

LV 00:13:09

Your book examines nine areas as you said, they are food, cancer cures, batteries, fusion energy, commercializing space, quantum computing, brain-computer interfaces, AI, and astrobiology. Which one of those areas did you dive into first, when you were starting to work on the book?

It was quantum computing was my first one. I just happen to be interested in it. I was covering that in my writing at the time. I've been commissioned to write a few pieces about quantum computing. As it went to a quantum computing startup conference and I didn't understand half the things anyone was saying.

Could they understand it?

GM 00:13:50

No, see this is the thing, it was really interesting. It was like the person presenting understood it, but the person who was on after wouldn't understand what the person before was saying, it was very siloed. It was a great conference, it was very enlightening from a sociological perspective. I was already writing about that anyway and when the idea for the book came up and I was matched with an agent and so on and so forth. Well, you'll know this with nonfiction writing, you write a proposal and it's that delicate balance between you don't want to spend tons of time doing tons of research to do a proposal for it to then be rejected. Equally, you also have to write something good enough to get a book deal. Just because I already had written on quantum computing, it was "easier" one to start with. Also, I figured if I could get a mainstream publisher to buy a book that has a sample chapter on quantum computing, I'm pretty sure they could buy anything.

LV 00:14:46

Yeah.

GM 00:14:48

Also, quantum computing, as you know, it has a really interesting recent history with hype. I wanted to dive into that a little bit and everybody wants to know what it is, be equally, it doesn't want to go into huge depth trying understand quantum mechanics. I figured the timing was good, I suppose.

LV 00:15:12

I love that chapter. Quantum is always one of my favorite go-to examples of hype and I can't tell you how many bad undergraduate student papers I've had to read

on quantum over the years.

The simplest version you want to play with, what quantum is and why do you think it's been surrounded by hype for so long? Because I feel like at least 10, maybe more like 20 years at this point, it just remains a bubble.

GM 00:15:49

My theory on why it's got a lot of hype about it is both got this aura of being really difficult to explain and understand, which arguably it is. If you go into the real depths of it, it is difficult. In the same way that understanding how any computer works or how a car works or anything is very difficult when you go into the depths of the detail. Quantum mechanics, of course, particularly in a popular science context, has this aura of being this like super difficult thing and all that jazz. I think people get caught up with it being so difficult to explain, but it's also got this really compelling, simple promise, a hyped up promise around being super fast computing, which is very easy to understand and particularly a lot of the narratives around this idea that you can do multiple things at once at the same time, which is an incorrect understanding of quantum computing, but that's a lot of time what's written about it. When I first started writing about it, I'm guilty for also jumping onto that hype narrative because it is an easy way, quote unquote "of explaining" quantum computing this idea that, a computer does things in a linear fashion one after the other, but quantum computer can take multiple things and do it all at once. That's a very simple, compelling idea, particularly when you start saying AI needs more computing power in order to do things so if we pair it with quantum computing then we can have awesome AI.

LV 00:17:24

The singularity is just summarized, and I know.

GM 00:17:26

It's like both extremely complicated so people don't feel empowered enough to question it. But at the same time, it's got these very simple, compelling ideas which are really exciting, particularly when you pair them with other hyped up technologies like AI. Alongside that,

you said about that conference, nobody understood what was going on. Within the sector, it's sometimes difficult to really assess things properly. When I was interviewing people for the chapter, I interviewed Scott Aaronson, who's one of the main people, quantum computing celebrities. For lack of a better word, super, obviously knowledgeable in the space, he's been in it for years and years and years. We had a great interview. He was really, really helpful. Even when I said to him, what startups should I be paying attention to and which ones shouldn't I? He was like, frankly, I find it difficult to assess this because they're all doing completely different things. It's all so specific and you can't possibly keep on top of everything. You've got this problem where people within the sector are all trying to sell stuff particularly from a startup space, but even the experts are finding it difficult to assess. It's quite easy to capture attention if you've managed to have a cool, interesting narrative, but it takes perhaps quite awhile for things to be debunked and we saw that with the D-Wave. That's the famous example in the quantum computing space, a company, which is still going nowadays and I would argue, is doing well because of the self-fulfilling prophecy of their hyped up narratives of 10 years ago. They oversold and didn't correct people when they got it wrong, shall we say. When they were saying about what it is that they were creating with their quantum computers.

It's a difficult one as well because the other thing that's worth paying attention to is the counting of qubits as well. Again, because there's a difficulty with understanding and tracking the field, this pseudo measurement of progress as a marriage, which is like how many qubits does the computer have and so you'll see

the press releases like we've made it to 50 qubits, or we've made it to 100 qubits so on and so forth. That is not enough. It doesn't tell you enough about how good the quantum computer is and that's what D-Wave did they were like. We've got over a 1,000 qubits years ago and folks like that. How's that possible? They managed to get a lot of investment as a result, they did press release train where they were counting the qubits and it was a thing to follow. It was almost gamified. Again, it's these oversimplified ideas that people don't feel confident enough to question. At the same time, it's hype area and people want to invest and D-Wave got a lot of investment as a result.

LV 00:20:31

They're still here as a result, right?

GM 00:20:33

Well, yeah. They now have technology which is useful for some applications.

I think as well, what's happened in this sector is that it's become very like the promise of what businesses can get from it. In recent times has been a real part the narratives. It's not just being this basic science nerdy area. It's now how can you do amazing AI. That's the thing. It's like, how can you solve these optimization problems? How can you do more difficult computation? Of course, not just huge companies like Google, or not a company, NASA are wanting to invest in those kind of technologies because it is genuinely useful to some degree of what they're trying to do. But you're then capturing smaller businesses who arguably don't necessarily have the in-house talent to properly critique it. But they understand, well, I should be doing stuff with AI, so I should probably look into this area as well. It's a difficult one, but I think D-Wave got the investment and they end up building something good as a result, and that is the self-fulfilling prophecy, not an ethical one though in my opinion.

LV 00:21:49

Is one winner of quantum computing just basic science? I mean, are scientists happy with this hype?

GM 00:21:58

Yeah, I mean this was part of the argument I made in the chapter. Saying, you've got delicate point that we're in, where yes, basic science has massively, I guess, you benefited from this hype because you've got a lot of people investing in labs. You've got people like Microsoft funding and creating entire swaths of labs across different universities. Sometimes buying labs and bring them in-house, which is a separate issue, but still the money's there and there's a lot of good research being funded by hype arguably. Where I guess I worry is, it's the same thing as usual. When's the bubble going to burst? When is the sort of the people who are investing in this going to want the return? Because as we all know, basic science, A) doesn't always give you what it is you're looking for from an application perspective, but it's also super, super slow. That's the one thing with quantum computing is that there's many things that are arguably not possible to do that we can't get rid of all noise for instance, like that's covered understanding. But you've got a lot of idealistic people funding it, hoping that we'll be able to create these all singing, all dancing computers that can do amazing things with AI or wherever else down the line. I think it's this people within the basic science community, within quantum computing. Were part of creation of hype over the years. They've been lobbying for more investment and more interest and more business interests going. This is the thing that can be applied for business because they know that that's what gets grant approvals accepted. There's this complicity in creating these hype bubbles. But then going, no they're going, hang on, that's not actually really what it is, ah, What do we do? That whole thing with the AI, hype cycles and AI winters. It's like, are we going to have a quantum computing winter at some point. That's my open

question that I ask in the book. I think that we will. So yes and no. They're benefiting from current investment but long term. Who knows?

LV 00:24:17

I really liked your chapter on food because that wouldn't be if I was going to list the hype science and technology issues, it would not be on my initial list, but it was really clear, all the examples you gave of multiple hyped technologies around it.

Why do you think food is? Why was it for you like a fun example to play with in the book to bring it in?

GM 00:24:44

Well, I was thinking about, frankly, it was just what am I interested in. I'm very interested in the AgriFood tech sector and AgriFood tech startups. I've been to quite a few conferences at the time which were actually really interesting and brilliant and fascinating in many ways. That has a lot of the AgriFood tech innovation there. I felt that it was also this really intriguing sector where I felt most of the areas that I covered. Basically, each chapter is basically these are all the things I've covered as a journalist. I love all of them. I felt that it was the one that was most full of really nice, well-meaning.

LV 00:25:34

Oh, yeah.

GM 00:25:35

Even more so than cancer.

A lot of people who come from farming backgrounds and are then learning about startups, innovation and technology. I don't want to say they're idealistic because that's obviously to grand a statement. But I think that there's real energy in that sector around genuinely trying to make things better from a climate perspective, from a sustainability in terms of feeding people perspective, from a health perspective, from a treating farmers in non-western countries, better perspective like all that sort of stuff. There's a whole lot of really great stuff in there, but at the same time, there's also a lot of like as there is in many of these idealistic places, like band-aid over gaping wound ideas. Things like vertical farming, for instance is one of my biggest bug bears. Because it was often sold with this very save the world perspective. We're killing the soil and killing the planet, so let's grow lettuce in a shipping container and charge loads of money for it. It doesn't really compute, but it's sold in this way, and so for me, it felt like a really intriguing place where there was loads of hype, but it was almost allowed

because people were going, we know you're trying.

This is we can save the world thing was very inherent to those spaces that I was in, and there was an element of truth in it too with the things they're working on, because they are working on trying to feed people, which of course is, you know...

LV 00:27:17

Important.

GM 00:27:20

Yeah, it's important. It's a good word for it. I was trying to say something more intelligent. It's just important. But I do think that there is a lot of hype around those technologies and real interests. For instance, like lab grown meat is an area that gets tons of coverage in the science and tech and mainstream press. Much like AI,

much like space. It's got that same sort of bombastic, this is going to be the next big thing, and it's also going to save the world. That was why I was interested, but I also felt it was something that I was shocked when I went to my first farming tech conference. How little I'd actually thought about where my foods came from.

LV 00:28:06

Yeah.

GM 00:28:07

I mean, that was obviously, I think in recent years, there's been a lot more focus on particularly from this climate and sustainability perspective. Veganism is obviously a huge thing. There's a lot of documentaries and focus on, not eating fish for instance, or Seaspiracy was that recent one on Netflix. There's a lot of conversation about it. But I felt I was why aren't we thinking about our food so much, why is it not covered in the way that other things are particularly from a science and tech perspective. You know, things like chemical fertilizers and stuff. Why is that not getting the same coverage as other areas of science that arguably are not really as important for people's day-to-day lives. It was a sort of challenge to try and write about food being such a huge topic. But at the same time, I want to try and capture this tech will save the world, tech will feed us narrative that's really prevalent in these startup-y tech science food spaces.

LV 00:29:09

One of the themes I really liked in that chapter is something that applies to other areas of life, too. But I mean, part of what you're looking at, what these multiple startups and different technology ideas is, we've made foods so cheap, and that shapes the way we consume food in a lot of ways. There's this fantasy that we're just going to be able to like through technological change, keep that boat going in

that way. In reality, as you say in the book, we actually just need to pay more for food. But that's a harder message to sell than like, oh, there's some other technology going to come along to save us from what we built, right?

GM 00:29:55

Yeah. I mean, the tech will save us narrative is the getting you off the hook narrative. It's a nicer one to want to engage in, and it's one that doesn't make you feel guilty. Which a lot of the coverage around food does make people feel guilty, particularly meat-eaters when you're reading about you shouldn't be eating meat. It's like, well I really like mince and Bolognese. I mean, I can't have that. I don't like corn's a bit weird. Don't want eat that. It's a guilt thing. It's the same with, oh, don't buy from Tesco [British grocery], go to a local farmers market and you're like, I've got my kids to take to school and I've got to get to my job. I only have time to go to one supermarket. I don't have time to go to the butcher and then the fishmonger. Well, you should not eat fish or meat anymore. I don't have time to go to the farmers market to just get vegetables and then go to the supermarket just for my essentials, all that sort of stuff. There's a lot of difficult truths, I suppose.

It's the only way forward frankly, as we're hearing a lot now, and more so than we did in years gone by. It's very tantalizing when you then have some Silicon Valley person swoop in and go, yeah, everything's messed up when it comes to the food sector. But don't worry, we've got a solution here that's going to allow us to keep doing what we're doing but do it in a sustainable, healthy, cost-effective, ethical, although it's not a lot of time, it's not, way. So it's a difficult one because it's really pulling on people's emotions. It's not just like, I'm interested in science and tech, I'm interested in people to read this article. It's like, no, people are searching for answers as to how to live their day-to-day lives, what to buy when they're standing in the supermarket aisle. Should I buy Oatly [Swedish dairy alternative] even though it's funded by this horrific private equity group. But it's better than milk and

they don't have Alpro [Belgian plant-based food/drinks company] today. So is it better to go with normal milk or is it better to go with Oatly funding this horrible company? People are asking those questions. So it's tantalizing when you hear these tech will save us narratives.

LV 00:32:14

The cancer chapter, I think is another one that really puts a finger on a spot where, I mean, it really touches us existentially because this is such an issue that hits home for many of us as individuals, if not as cancer survivors then as people who have loved ones who died from it. I think you cover so many examples of hyped supposed cures that later turned out the hot air in that chapter. I also thought you did a really nice job looking at how pharmaceutical companies dupe the stats to make it seem like their treatments are just way more effective than they are. But one of the things I liked about in that chapter is you brought up the costs of hype in different ways. So I thought we might use whatever technologies or cases you want to, but what are the costs of hype for us as citizens and as consumers and stuff?

GM 00:33:13

Sure. Well, specific to that chapter, I argue that the cost of hype with respect to cancer therapeutics is we're actually not getting good therapeutics and that's because we are essentially by keeping, propping up the same methods, the same regulatory ways of doing things and cheering on and being excited by arguably very small steps. There isn't the incentive for those who are developing various different therapies to frankly, just try harder and do things differently and try not to create incremental therapies that give one person who can afford it an extra two months.

LV 00:34:09

Yeah.

GM 00:34:10

But instead go, actually, we need to try a different way of discovering whatever new methods of doing things are, we're taking different approaches and so on and so forth. There's many different, I guess, costs of hype but that is the you're actually halting progress of sorts by holding up the status quo and not questioning it.

For me, that's really the worst thing about hype. It's this idea that by getting excited and cheering on what we think of as innovative or some science and tech changing world. Ironically, because of that, we're not getting the science and tech that really would change the world, not to sound hype-y myself. I guess what I mean by that with cancer therapeutics, is, hype stops us from having difficult conversations similar to what I'm arguing in the food chapter, but with cancer therapeutics. By saying, oh, this company has just released this new therapy that gives people an extra three months and you can only get a certain insurance are actually in the UK can't get it at all because it's not been approved by NICE because it's actually not that effective. But if you can raise the funds, you can get it. We're not having difficult conversations about, well, actually, is it worth investing in an extra three months worth of life?

LV 00:35:43

I know.

GM 00:35:44

If it also means that you're not living very well. That's a very difficult conversation to have, particularly because one person is going to have direct experience either personally or with a close family member. Other people are going to have experience with themselves, with close family members having different heart condition and going, well, that wasn't funded why should cancer get all the attention? Then of course you've got people just fear of death. In a lot of Western

societies, death is so taboo. We don't talk about it. We don't plan for it and it's like, I don't want to write a will, just in case, don't want to tempt fate, oh that sort of thing. So by not cheering on advances in cancer, even if the advance actually isn't that great and is super hype-y, what you're also doing a sorts of people read that as, oh, you don't want to cure cancer. Why are you not interested in patients? Of course, that's not the point. You're going, I want better, I want more, I want people who have the funds and the means and so on and so forth to step up. But it's a difficult thing to do when of course, you're talking about people's lives. So for me, that's where the real cost of hype, specifically with health care in general, most so with cancer, with it being the thing that gets the most coverage.

LV 00:37:03

Yeah, that makes a lot of sense to me. It's even worse over here in the States where the numbers are just completely gross when it comes to how much we spend on end-of-life care here because the insurance companies will pay for it. But it's all these like really expensive cocktails that as you say, they gave us sometimes mere couple more weeks and we're spending hundreds and thousands of dollars on that a couple more weeks.

GM 00:37:34

It could be a couple more weeks in a lot of pain. For some people, that's what they want and fairly but for others, that isn't worth the cost, and what I found I guess quite the example that people tend to really go, I hadn't really realized that when it comes to cancer was about the way that drugs are approved. So it's either approved or it's not, there's no traffic light system with this is a really effective drug. This is semi effective, this is not so effective it's just yes or no and particularly in the UK, it's interesting because of course we have public health here. But because we have public health, we have a body, NICE. I already mentioned it that decides whether or not something is going to be funded publicly or is not, so you have

drugs that in the US, you have literal adverts on your televisions, which I still boggles my mind when I-.

It's not great.

LV 00:38:36

It's just nuts and saying, take this drug for lung cancer and then you go to the UK and the government literally goes, we're not funding that because it's not effective and then you get the Tories running on a campaign promise of going, oh, our NHS is not funding enough of these drugs, so we're going to create a new funds, they'll fund, all the stuff you can get in the States, and then they create this fund that is so ineffective, so costly, it get shut down after like three years, but they ran on that and they won. That was part of the real campaign where the Tories first came in or switched from Labour. So it's like again, this sort of promise and this thing that's meant to be really good, like we're saving lives, we're doing stuff to beat cancer. It's like you get a pass if you just talk about cancer, I mean, you just you see it in biology research. All you have to do is mention cancer in your grant application. You're going to do a lot better in terms of getting that approved, because of that, that's the thing that people want to do and again, rightly so understandably, so blah, blah, blah, blah. But yeah, we're just really not having these difficult conversations like you said, about end-of-life care in the US and the funding for it. This is a difficult thing to talk about, and again, the tech and science tTitans can swoop in and take advantage of that. Not necessarily deliberately, they're not these evil conspiratorial people were reading my book and going, "Aha, let's make the most of it."

But at the same time, that is the reality of what's happening.

You covered two energy technologies in the book, batteries and fusion. One common denominator I see between them in what you write is that beyond being overly optimistic about the individual technologies themselves, people often fail to

understand how difficult it might be to bring them into existing energy systems. What's the relationship between hype and simplification in your view?

GM 00:40:44

I think that hype propagates because people are looking for simplicity. I think that it's dealing with complex ideas. Not everyone has time in their day-to-day life to try and understand the entire supply and production chain of battery technology. That's not something people do day-to-day for many reasons. But also I think as we know, and we see this in politics, we see this in day-to-day life. It's very difficult to hold conflicting information in your head at the same time. With complex systems, that is literally what you have to do. You have to be able to go. If we do this, that's really positive. But also if we do it, it's pretty negative. I have to work out how I feel about it.

LV 00:41:37

Right.

GM 00:41:37

To be honest, I wrote this book before the pandemic. It came out in April last year, not really the start of pandemic, the start of how it was covered, at least when it started getting coverage in the UK and the US too, but I wrote it with this bug bear, that people, it's very general thing that mainstream media, the way the things get published and do well in terms of people taking notice of it tends to be simplified things. When I try and pitch really complicated articles and say, I want the hero of this article to be the system, not some character, an editor doesn't tend to be interested. It's really annoying. But actually, I think one of the good things about the pandemic is that this idea of trying to understand complex systems and contextualized complex systems is now a standard part of our media. You had to be

able to write about why we didn't have toilet paper and expose the entire supply chain network of toilet paper, but also how toilet paper impacts like health systems and like why teachers can't go to schools. It's the same reason as we can't have toilet paper. That challenge not everybody rose to it in terms of journalism, but a lot of people just had to in order to explain what was going on with the pandemic. In some sense, I think the problem of hype playing into people's need for simplicity. I hope, maybe I'm being idealistic here, I hope is slightly reduced as a result of what we've all had to try to come to terms with over the past almost two years now. But hype is a shortcut. It lets you take something really complicated and sort of summarize it into a headline or an emotion, thinking about like automation, robots are going to steal our jobs. That's a very simple idea that people get, that people have an emotional reaction to. But actually is a super complicated, complex area.

LV 00:43:51

Right.

GM 00:43:52

Summarizing this one idea and it's the same with fusion. It's always going to be 50 years away. That's butt of the joke thing. Is a simple idea which has truth in it, but does not, by any means, give you any door into this super complex system. The same with batteries this idea of like trying to find the holy grail of batteries that is light, is cheap, last long, charges quickly. Is actually not the reality of how the battery world works. Also, the idea of looking at the technology itself like, "Oh, we found this new chemical," you're not looking at, well, what would happen with factories? Would factories have to be completely redesigned because you've got this new chemical? Or what's it going to do to the price of your whole device? The price of the battery changes, that's the whole thing with electric cars, the most expensive part in electric car is the battery. If you can't nail batteries, you're never going to nail electric cars because they're not going to be cheap enough for the

market. I think letting people in and showing frankly the majesty of complexity because I find systems fasc-- I love systems. And I think if you can try and showcase that that's a much more interesting way of understanding the world, not a more difficult way. Then hype, again, becomes something that's not desired because it doesn't give you that full picture. But again, we all like things to be simple sometimes, so it plays into that.

LV 00:45:21

Another thing I was thinking about while reading your book is that digital technology is a locus of hype today. You can see it in your chapters because at least three of them, there's quantum, there's brain-computer interfaces, and AI. We could add other chapters too because they have a lot of digital stuff in them. It seems to me like plausible that hype tends to surround young industries where there's lots of change more than older industries, you don't see a lot of hype around the coal burning power plant industry or the plumbing industry, you know what I mean?

GM 00:46:10

Yeah.

LV 00:46:10

I just.

GM 00:46:11

Yeah. No.

LV 00:46:12

I wondered, digital technology is depending on how you count it. It's still young in some ways, like especially the app-based one is only 15 years old or something like that. But it's getting older people are apparently like choosing to repair their iPhones more often these days because they don't think the new features are worth it frankly. I'm holding up my iPhone. This is an aging thing. It is reaching mature form. I just wondered if what you think about that and whether you think like maybe some hype around digital technology will tamper off as these things age.

GM 00:46:58

It's an interesting point, I hadn't thought about it in terms of age. I do think a lot about the difference between digital and non-digital, shall we say technology because I specified a lot of my coverage interest, as some people call it deep tech, which is basically anything that's not digital.

LV 00:47:22

Interesting.

GM 00:47:23

I'm specifically interested in stuff that's not necessarily just hardware, but it's stuff is, there's a lot of IP involved.

LV 00:47:36

Yeah, it's in industry.

GM 00:47:37

It's part of complex systems. Whereas digital is not that, although there'll be things like apps for farmers, which will be part of the AgriFood tech industry to some degree. I do think a lot about the difference between them. I actually think what's

happening in deep tech at the moment is there's a lot more interest in it. Because it's almost like folk have gone, oh God, it's really hard. I'm kind of getting bored. If you think about the startup space where the entrepreneur is getting excited. There's a lot more investment and people joining programs and stuff in deep tech. I think a lot of that is because they're kind of like of I don't want say they're too easy but it's this sort of thing of like there's tons of people doing it. It's super congested. It's arguably a bit harder to get investment now, because I think people can see through the hype much easier with software than they can with something like fusion energy.

LV 00:48:40

Right.

GM 00:48:41

I think we're at an interesting point in non-digital because the convergence of a lot more interest but not a lot of understanding.

Frankly, I don't want to say we're running out of ideas with digital.

LV 00:49:00

Well, something like that, though It feels the low-hanging fruit have been picked and Uber and Lyft, Grubhub and these companies, there's no road to profitability, it looks like, and even if they are, they're not going to be high-growth industries eventually.

GM 00:49:18

Exactly. The thing about deep tech, that I also find interesting is the way how value works. If you think about digital technology, essentially the value of the technology

all the time is the number of users, so it's how good your marketing is. Whereas with deep tech, the value is normally inherent in the IP.

I love opinions about IP. I don't necessarily think we should be protecting certain things and I don't think the way that IP works is necessarily good for the world. The reality of deep tech is that the reason things get funded and not all investors in deep tech are happy to wait longer for return is because the value doesn't dissipate in the same way that it can in digital. If you need marketing in deep tech, you just need the right connections. You need a meeting. Hype in digital, you need it because you need to be able to essentially capture attention in a bigger way because it's about marketing. The value of these companies is how many people use it. It's just not the same in other industries, you don't need people to really care about plumbing in order to get investment. Because if you've got a really good technology in the plumbing industry and you speak to an investor who understands the plumbing industry, and you sell to a really big supplier who is linked up with 60 percent of the plumbing industry in the US, you don't really need hype.

LV 00:50:58

And you just made a gazillion dollars.

GM 00:51:00

Way more money than in digital. It's huge. I suppose hype works in different ways in these spaces. Obviously, my book is much more focused on so-called deep tech, if you want to call it that. Because I think it's an interesting moment that I think the strategies that have been used in digital, specifically in the startup space, are coming to deep tech. You're starting to get things these like, we're the change makers, we're saving the world, we're the entrepreneurs, we're the frontier of today and all that thing. In deep tech and places like AI, that's obviously going for a long

time, but brain-computer interfaces, you've got Musk there, for God's sake. Look at space. The space industry is not going to Mars or the Moon. It's like making satellites and it has been for a long time. It's got this exciting sex, drugs, and rock and roll. The entrepreneurs of today are these. Zuckerberg, he's not so cool but Musk. I think it's that kind of vibe that has been in times gone by much more linked to digital technology is very much

in places like biotech.

Even you see in conferences, you see it in the way that deep tech conferences now have super high production value, they have speed pitches. They're really fun to go to, frankly. They're hot. They're sponsored by interesting companies, not sponsored by pipette companies. They're sponsored by like gin companies. You get really great drinks at the after party as opposed to getting to speak to some boards about getting your pipettes supplied for your lab. The culture in deep tech is more similar to that of Silicon Valley-esque thing. Saying all that I think people are getting a bit bored of the Silicon Valley thing too.

I think you show how out of date you are if you use the language of Silicon Valley now. If you're saying, let's do a hackathon and there's free pizza. You're a bit late. That's a bit 2015, which sounds harsh, but yeah, exactly. Let's do an elevator pitch and you're like oh, no, you're new to this. It's the same in deep tech. We're starting to, what's going to be not cool in a year's time that's cool right now. I don't know. This is part of the reason I end up going to do in this PhD in STS, because I didn't realize there was this area of study that looked at the culture of science and tech, and that's always what I suppose I'd be interested in without realizing it. I was shunt this, I couldn't be a sociologist. I used the maths [math] degree. I'm like, I would only do science and tech. Then suddenly, I was like, actually this is-.

LV 00:54:18

You're already doing it.

GM 00:54:21

I think that's what I already do. Maybe I should be a bit more open to the arts and humanities. Anyway, I'm loving, properly looking into it and thinking about it. I think you share the opinion that there's still a lot to be done in terms of understanding more recent digital tech culture. There was a lot of focus on other things in STS, but it's a very rich area and there's a lot to be said, I think about these people in these places and what they're doing.

LV 00:54:55

Totally. Why don't we transition to that? I want to tell people, I want them to buy the book.

GM 00:55:00

Thanks.

LV 00:55:01

I'll say that you have a nine step plan for beating hype in the end, which is somewhat related to the chapters, but I thought they were interesting points and I'll just say people should check those out. What are you up to? First of all, you've also become a parent recently? A mom recently.

GM 00:55:18

Yes.

LV 00:55:19

You're kind of taking a little break, but what are you thinking about doing in your doctoral work? Do you know what you want to look at it yet?

Yeah. I suppose I have the case study before I had the research angle, if that makes sense. I've been really interested in futurist, specifically corporate futurist. People who go into businesses, sometimes they're hired internally, but a lot of the time they're external consultants, so they're individuals, freelancers. Sorry to pause. We have this amazing trap to stop the squirrel from getting the bird seeds. And he's so bloody intelligent, he's on top of this. He's goals. Oh, man. He kind of deserves them. Let me just rewind a little bit. Sorry, I got so distracted by the squirrel.

No. It's good.

GM 00:56:13

Yes, I'd been really interested in corporate futurists. People who go into companies and essentially sell information or approaches in terms of thinking about the future. That can be everything from saying, in five years time, you're going to get this or this is what the world is going to be like to going out and selling methodologies almost like consultants. Using things like the future's code and things like that to help our scenario planning, all these strategies and futurism tools. I'm very interested in them because I think that there's something contradictory in what they do because as any good STS or will know from their STS 101,

where society and science is co-constructed and the science impacts society and society impacts science. If you are a futurist, arguably, you are not just giving information about the future. You are playing a part in creating that future by giving that information about the future. There's this creative element to the job and a lot of the language of futures is about desired futures, which of course rings all the bells of the tech ethicists. Like, what do you mean by desired and who gets to

choose and who's funding this and desired by whom and all that sort of thing. There's an element of, well, why did you get to be a futurist? Then there's equally like why is there even value in hiring these people. What does it mean for a company to play a role in deciding the future for society as well. I was originally really interested in the ethics of the individuals, of the futurists going into these companies and how they justify working in a corporate. Particularly it's a lot futurists are quite Marxist. Have these very social-first ideas, but then go and work with a company and you're like, how does that make sense? I started thinking about that, but I then I've shifted a little bit closer now to sort of the political economy of futurists. How do you become a futurist? How do you get paid as a futurist? Why do some futurists get paid more than others? What do you have to say in order to get in the door? What's the sort of community? Because futurism is so interesting. You've got the academic futurists, you've got the tech evangelist futurists. You've got the sort of, shall we say, activist futurist. You've got ones that are linked to various different social causes. You have Afrofuturism and indigenous futurists, queer futurists. It's what do they all think of each other and how do they all interact is interesting. It's so easy to just go ah end capitalism. Most futurism goes deep into capitalism and there's a lot of work and that I've been interested in around and the idea of the future being inherent to capitalism like you have to have this future facing. The future has to be something that's inherent in your way that you go buy things for capitalism to be upheld. Things like credit and competition are both inherently linked to this idea of a conception of the future. Again, then you're thinking, well, futurists are hired then to uphold capitalism, which is a little bit grand, and I'm not sure if I can do a PhD, just claims that it seems a bit-.

LV 01:00:10

There's something to that.

GM 01:00:10

It's also too complicated.

LV 01:00:11

Right?

GM 01:00:12

Yeah.

There is some work like Jens Beckert, is how I'd say his name, is the one that writes a lot about it in economic sociology, which I find really interesting. But I haven't quite decided what I'm trying to add to that conversation and I think the thing about doing a PhD when you're a mature student and you're not doing it straight off a master's where they offer undergrad is less interested in getting a PhD as a trading program, but I actually want to, sounds diminishing, I don't mean that people don't do PhDs for good reasons, but I think when you're a bit older, it's more about what's the output of the thing that you're really trying to say. Particularly when I've also already had a career, it's what am I trying to add here. I think a lot of it is about

how's the idea of the future inherently linked with things like technology and capitalism. For instance, futurists that talk a lot about technology are the ones that tend to be more high-profile. If you are a smart city futurist, you're going to do pretty well, versus somebody who's talking about the commons, but arguably that is a very futuristic idea. It's also a very historical idea. But the point I'm making is, if you're talking more about social futures as opposed to tech futures, you're hired in different ways and you have different kinds of values. I suppose that's part of my question, why is technology so inherent to the idea of the future? Why is the future inseparable to some from a value and capitalism perspective to technology? Maybe I'll try and answer that. I don't know.

LV 01:02:01

Well, I think cancer and food, this is one of these issues that hits us on a very existential level because I think especially businesses, but in all parts of our lives, we're all very concerned about the future which is always uncertain and frightening for that reason. We would all like to be able to get our hands around it. In the futures world, they have all this we don't make predictions, we do scenarios, but they're still trying to help people come up with strategies for coping with the future. But the other thing is, I feel like the other side of it is management. There is a couple of good books on management, faddism, and consultants, because the futures stuff is so hot right now. But with a lot of new fads that take over the management world, it's very hard to judge what efficacy looks like, beyond the subjective or on individual and groups subjective feeling that, that was a helpful week-long thing to have gone to as go to a retreat, somewhere really nice and get great food, and dream up science fictional scenarios or something like that. That was useful. Well, beyond that feeling of usefulness, it's really hard to know how to judge whether this is a thing that really does help or something.

GM 01:03:30

It's really interesting if you look at the literature. The publications in futurism spaces, there is a lot of focus on essentially how to get the client to do the thing that you've suggested, i.e, how do you make it more effective? How do you justify the cost? And so on and so forth. There's this real focus on efficacy. It's something that I got a bit caught up with when I first started. It was like, I'm not really interested in whether or not futurism works, because I don't go at that. What do we mean by it working? There's so many questions around that. I'm not really interested in that. As such, I'm more interested in the very existence of it and the fact that it's valued, which comes back to that point around, it's around buying certainty. That's what these companies are doing. They're buying a level of confidence in their actions. Whether that's investing in this new technology or

changing the business structure of this department or whatever, or hiring this person. It's this idea of being able to justify what you're doing. I think that's particularly interesting in a corporate context, particularly large corporate contexts because they are publicly traded and they have to justify themselves so often. But also, it's very measurable because profit, so whereas with government and justification for decisions and measurement of decisions, it's sometimes a lot more difficult than just sheer, does it make money or not? There's a very, I think, interesting thing there around, almost the fact that futurists exist or is kind of like linked to a feeling of trying to get rid of uncertainty and to try not have to frankly take responsibility for your decisions in the same way that consultants. That's what consultants-.

LV 01:05:43

Yeah, totally.

GM 01:05:44

That's why they make so much. Look at the huge big consultancy companies. They make a lot of money on asymmetry of information, and corporate CEOs wanting to is justified by doing. I think futurists play into that in some sense. I don't think they necessarily are deliberately doing that. I don't think that's what they would say you're doing, and it's probably in some sense offshoot of what they're doing, it's not primary, but at the same time, I do think that it has a lot of linkage with this.

We see a lot in kind of datafication of decision-making both in government and in corporate. This idea of you can't do anything unless it's backed by data or data driven and it has to be objective, has to be scientific, which we're also trying to deconstruct that in the humanities by saying, there's no such thing as objectivity or actually, decisions are made from various different things. You can't just have data. Data is biased. All these sorts things are all coming together in the same time

you've got this idea of how do we get certainty? How do we know what we're doing? How do we algorithmic in our decision making? And so on and so forth. There's a PhD in there somewhere, hopefully.

LV 01:07:11

I'm really looking forward to seeing what you do with it. I think it's going to be exciting and great. Thank you.

GM 01:07:17

Fingers crossed.

LV 01:07:18

Thank you so much for taking the time to talk to me today. It's been a lot of fun.

GM 01:07:22

No worries. Thank you for inviting me and everybody who's listening, you have to go and listen to the Lee and Andy's interview

that we did on Radical Science.

If you want to hear me in the interview seat and Lee being asked all the questions.

LV 01:07:34

Right on.

[MUSIC]

I hope you enjoyed this episode of our podcast. Peoples & Things like most things in this world depends on the work of many people. I want to thank my brother Jake Vinsel for writing the music for the show. I want to thank my buddy Juliana Castro for designing the logos for the podcast. You can check out her work at julianacastro.co. Peoples & Things is a production of Virginia Tech Publishing and the University Libraries at Virginia Tech. Production activities are supported by the Athenaeum, a space in the library that acts as a hub for digital humanities, teaching, learning, and creation. Joe Forte is the Athenaeum coordinator and digital humanities specialist at VT Libraries, and he serves as producer and sound engineer for the podcast. For information about other podcasts from Virginia Tech Publishing, visit publishing.vt.edu. I also want to thank you for listening. Thanks.