The Received Wisdom

Episode 37: Climate Change Realpolitik, Following the Sams, and Evaluating Research featuring Sarah de Rijcke

Teaser

Intro

Shobita 00:00:38 Hi Jack. How are you doing? Happy December.
Jack 00:00:40 Happy December, Shobita. Oddly, it's morning for us both. I've made you do this early so the listeners get to enjoy your morning podcast voice.
Shobita 00:00:51 That's right, yes exactly. Slightly low and authoritative. Yeah, it's almost the end of the semester here, which is very exciting. Not just for me, but also for my students, I'm sure. We are, of course, all of the attention now, all of the science and technology policy attention right now is to the climate change conference, the COP that's happening in the UAE this year, which is itself quite interesting and controversial.
Jack 00:01:21 A fun place to have a climate change COP, Yes?
Shobita 00:01:24 Well, yes. There's a lot of use of air conditioning at the moment in the UAE, I presume. Yes, it's quite interesting. There's already been a number of controversies about how, of course, the UAE as a major player in the oil and gas industry has been accused of making new oil and gas deals during the meeting. Which, perhaps –
Jack 00:01:48 Well you would, wouldn't you? I mean, if your economy was based on one thing and you've got everybody in town, right, why not?
Shobita 00:01:56 Yeah, it's easy. And, I mean, he also, I guess the folks who are running the COP also wanted to make sure that there was attention to the fact that – the role that the oil and gas industry can play in climate change as well. So that's great. I mean, on the one hand, yes, it's important to be realistic about what's happening.
Jack 00:02:20 Well, that's it, isn't it? You know, having those tensions staring you in the face, I think for a lot of us who look at policy issues, it's sort of – there's something explicit about that, right? It's much better than having a COP where nobody talks about oil and it's like, let's keep fossil fuels out of this discussion and pretend that we can all just agree that it's all gonna be perfect. Right? It's not.
Shobita 00:02:44 Yeah. I mean, fair enough. That is true. I don't know, I mean, I am not sure what's supposed to come from these meetings and whether what comes from these meetings is

worthwhile. And maybe I'm too harsh about that. But you know, you were saying before we pressed ‘record’ that the UK has essentially abandoned most of the commitments that have been made at previous meetings.

Jack 00:03:10 Well it would say – you know, the government line would be that they definitely haven't abandoned those commitments, but the politics of it are the government has publicly stopped caring about climate as a move to the right in order to shore up its increasingly aging, increasingly conservative base. And it was notable that the leader of the opposition, Keir Starmer, has spent longer at this COP than Rishi Sunak, the Prime Minister, and has done the photo calls with John Kerry and various others. So for those people who care about climate change, it's sort of obvious where they should be placing their bets at the next election.

Shobita 00:03:50 One of the things that's really interesting about all of this is that when you have a situation where you don't necessarily have really strict global governance around climate, these are the things you end up paying attention to. You end up paying attention to who's being photographed with whom. Who's taking a private jet where. Which people are, you know, saying which supposedly inappropriate thing.

Jack 00:04:21 Yeah. It's sort of people trying to feel the vibes, people trying to get the mood music <Shobita laughs>, because that's sort of what all of this is, right? It's climate vibes.

Shobita 00:04:30 It's so interesting because for many years now, University of Michigan has been sending a delegation of students to the COP. And for many years, because of the kinds of things I teach, I end up with at least one student every year going to this COP. And because each of them go once only, they, of course, they're understandably really excited, they get to go to this place that's usually somewhere else in the world. They get to observe all of these things for the first time. But what they miss is exactly what we're talking about, right? They end up being really credulous because they see all of these important people who are getting together and being seen talking to one another. But if you look at it in, kind of, historical perspective, you see that that's all that it can – it seems – I mean, I don't know, maybe I'm –

Jack 00:05:26 Yeah, yeah. And you have to put this meeting in the context of all the others. But I mean, I do think that there is still value in a set of meetings where the expectation is that the world's most important people do show up. You know, if you're a foreign policy maker, showing up is really, really important. The diplomacy of it is absolutely vital, you know, and in that way it's sort of better than just another scientific meeting where it's like, well, let's let the scientist hash it out. So there being an explicitly political meeting to compliment the IPCC process, I think it's important to keep that regular pattern and to be able to sort of gauge whether this one is marginally more optimistic, more pessimistic, whether there is something new or whether it's more of the same. And if it is more of the same, is that more of the good same or more of the bad same?

Shobita 00:06:20 But what you're saying is actually really interesting because it makes us, makes me think anyway that my standard was to compare – that maybe it's a problem of comparison. That is that I was thinking about it more as a negotiation, a meeting for negotiation. But maybe that's not how we should be thinking about it. Maybe we should be thinking about it like a scientific meeting, like an annual conference where a bunch of people get together, a heterogeneous group. It just happens to include policymakers, but really what it is, is about gauging the global political temperature, if you will. And so I think that's a way to not be as

distressed by it. And one of the pieces of evidence that suggests that's how we should be thinking about it is that this year they are talking about AI a lot. You know? Yes, of course.
Jack 00:07:15 And I imagine obviously they're talking about the climate impacts of AI, which is an absolute disaster given that training a large language model uses the same amount of fossil fuels as a medium-sized country.
Shobita 00:07:29 Yes. Well, they are talking about that, but that is of course not the first thing they're talking about. It sounds like the first days of the meeting had lots of panels from all of our friends at the big tech companies talking about how generative AI can help us better understand and respond to climate change. You know, obviously it can handle large data sets and therefore is likely to have some predictive capacity. It's also useful in terms of sending quicker responses in emergencies. So it was only secondary that at the same time that it can help climate change.
Jack 00:08:17 It's an interesting thing, isn't it? The sort of AI for climate change thing. It's one of those things where – you know, because everything is AI now, you – inevitably there were people saying, oh, well we should throw AI at this problem. And you go, okay, okay. What would that look like? What would that do? And then it becomes a discussion – well, you know, we could improve weather forecasts, we could improve warnings. And you go, okay, that feels like some potentially useful tweaks, but it's not tearing down a coal fired power station. Right? It's not decarbonizing the United Arab Emirates. Can I switch us on to, I mean we've done very well, I think just not talking about Silicon Valley, but I want to switch us back to that. Not so much our friends in Silicon Valley but their friends – friends of friends. In Sam news, in Sam updates, <Shobita laughs> how are the Sams?
Shobita 00:09:01 Sams are, one is doing well, the other not so well <laugh> uh, <laugh>. So of course we're talking about Sam Altman, the CEO of OpenAI, and Sam Bankman Fried the now disgraced founder of FTX. Sam Bankman Fried, the one who's doing not so well, since we last spoke, was convicted and is likely to spend the rest of his life in jail.
Jack 00:09:31 Which I think when Silicon Valley people tell you that it's about failing and failing fast, I don't think that's what they're talking about.
Shobita 00:09:40 Hmm, that's interesting.
Jack 00:09:42 Unless, you know, it's all just part of moving fast and breaking out of jail.
Shobita 00:09:47 That does raise the issue that it's not – I don't know, but we haven't heard a peep from most of the other Silicon Valley folks on Sam Bankman Fried.
Jack 00:09:54 It's really interesting to see 'cause I think, you know, the details of the Sam Bankman Fried case are sort of neither here nor there, but how it tells you something about culture I think is really interesting. You know, whether there – because all the incentives are for other Silicon Valley firms to say, oh, well he was obviously a bad apple, or to imply that through their silence. But yeah, there hasn't been much about what exactly has gone wrong here, because it's a difficult conversation, isn't it? Because hyping, faking it till you make it – I mean we've talked about Elizabeth Holmes and Theranos and things, and why what she was doing was so different from what Elon Musk does when he oversells and all the rest of it. It's hard to draw that line.
Shobita 00:10:37 Right. It's interesting because I – maybe it's early yet. But I do not feel like I've heard them say that they think he's a bad apple. I think that it's just that he flew a little close

to the sun. I mean, there is a general endorsement that these folks think that the way to – they all believe that they're saving the world, right? And that we need to endorse their behavior, whatever it is, because they're smart and they know what they're doing and they can bring us to paradise. And this guy was just collateral damage in the – maybe not collateral damage, but this guy just went a little bit close to the sun and he flamed out, but the general approach is the general approach. Right? And this gets to the techno optimist manifesto that I know you are raring to talk about, right? Because that's essentially what that is. Which is to say, because we're so smart, because we are evolving the world, we deserve a different set of rules.

Jack 00:11:35 So before we get to the Techno Optimist Manifesto, and we'll put it in the show notes so that others can see this sort of beautiful piece of madness. I did just want to mention – so Sam Altman, again, Sam Altman is one of those cases where the details of what happened are still being back and forthed by tech journalists, and I'm sure by the whole grapevine around Silicon Valley. But what does that tell us? The sort of, so this is the story. Sam Altman getting turfed out of his own company and then very quickly turfed back in because of the realization that there was so much short-term money, but also the sort of long-term idea of the future bound up within Open AI's sort of model. There'd been lots of arguments about what happened, what did the various board members think? Was there some sort of dangerous, magical technology that he had kept in a sort of Tony Stark like cupboard that was about to be unleashed on the world. But it's basically a story about how these companies haven't really worked out how to run themselves, and our future appears to be bound up in a type of governance, which is totally make it up as you go along and hope for the best. Right?

Shobita 00:12:54 But wasn't it also that basically he is pretty reckless? And he is, that there is a group in Open AI – my understanding is that there's a group in OpenAI – that in fact OpenAI began with this idea that somehow they were going to do this more responsibly. And Sam Altman kind of agreed with that, was on board with it, but then as they took it private, you know, it became too difficult to resist the lure of the money and the support that would come from going whole hog without any ethical considerations, any questions about responsibility. At least that's the story right now.

Jack 00:13:39 That is the story. And behind that story sits this idea, this sort of Oppenheimer like idea that you've got this magical world-changing, you know, explosive technology of impossible and, and maybe uncontrollable power. I think the actual story is one in which nobody's really bothered to work out what it means to do AI responsibly, so that you can have these bunches of people all thinking, yeah, we're doing the right thing. But it's like, you haven't worked out what the right thing is at all. You've all convinced yourselves – Sam Bankman Fried was doing the right thing in his view, which was to make as much money as possible so that he could give it away and be the most effective altruist in history. It shows you the sort of – maybe it's an ethical vacuum, maybe it's just an inability to talk about the politics of it. But they haven't worked out what's responsible.

Shobita 00:14:31 And I have to say, what's frustrating to me is that whether you're talking about Sam number one or Sam number two, or any number of people from Elon Musk to Marc Andreessen, it's that increasingly these people are household names and we are essentially beholden to whatever little boy antics are going on in Silicon Valley. And we have no real governance structure anywhere. And that's the thing at the end of the day is that, you know, we

have to care about all of these machinations because we don't have anyone else taking responsibility.
Jack 00:15:12 Absolutely. Yeah. And I was thinking, you know, maybe we shouldn't be giving them so much airtime, but you're right that we do have to care about them because there's no other game in town.
Shobita 00:15:10 They're their governance regime for better or worse. Right?
Jack 00:15:13 It does make me think that that's a sort of, maybe I'll do this using my generative AI prompt engineering skills, some sort of Dr. Seuss mashup of Sam one and Sam two <Shobita laughs>. I do not like Green Eggs and Ham, Sam, I am, et cetera, et cetera. Um, can we talk about the AI Summit as well while we're on AI? This was, uh, happened well a few weeks ago now, but we trailed it in the last podcast. And I was really down on the prospect of what would be achieved at this AI summit precisely because it appeared to be very over-excitable. It appeared to be captured by these concerns that the worries to do with AI were, will it or won't it end the world without anybody asking serious or grownup policy questions. And my conclusion, having seen it at one stage removed, so a few of us were doing this sort of fringe summit around it, was that it was much less mad than it could have been.
Jack 00:16:14 Thanks largely actually to some very timely interventions from the U.S. where behind the scenes we had people who we know, including Alondra Nelson, but others within the Office of Science and Technology policy who'd been paying careful attention to the actual politics of artificial intelligence. So just as the AI Summit was about to start, the White House issued an executive order on AI that said, that basically didn't mention existential risk and the non mentioning of it was the great victory. And then we had a speech in London from the Vice President Kamala Harris on the morning where she was over for the AI Summit, where she basically reframed the debate very elegantly I thought, and totally stole all of the political oxygen from the more excitable UK policymakers. But ended up making I think the summit a more sensible and maybe less exciting and maybe less headline grabbing, but more sensible. I mean, did it cross the Atlantic at all or was it totally…
Shobita 00:17:33 I think that the attention was really on the executive order over those days. And there was a little bit of attention to the summit, but it didn't blare in the way that you might have expected, than you probably saw in the U.S. But the executive order did get a lot of attention and it's probably a good reminder and very useful for especially our international listeners or non-U.S. listeners, that when President Biden issues an executive order – when a president issues an executive order, it has the force of law in the executive branch. So it is not law and the next president – hopefully not the orange guy – he could just, the next president could just eliminate the executive order. So it's not as strong. However, executive orders are powerful in the sense that in that administration it can shape policy, can shape practice in the government. And there are various provisions in that executive order that are asking different agencies to do real work. So there is potential there to shape this discussion, but it doesn't, it can't be the only solution. There needs to be a lot more work done on AI in terms of governance. So it's not getting people off the hook, but it is a start and it is a next step after the AI Bill of Rights that Alondra really spearheaded.
Jack 00:18:53 Yeah, yeah. And at this stage, I mean, yes, there is legislative work happening, but so much of the work is framing work. You know, it's about saying these are the

things that we should concentrate on. And implicitly these are not the things that we should concentrate on. I mean, the other thing that it's worth saying just about the summit, and then I won't drone on about it, is a question of inclusion. It was gonna be a very narrow sort of tech plus chums sort of discussion. It ended up having, at least one of the two days, quite a lot of representatives from civil society, most of them, interestingly American. Because I get the sense that the link between civil society and research around AI is more established in America. Really notable that when you put civil society in a room with AI people, a preponderance of civil society is women, a preponderance of AI as men.

Jack 00:19:55 But the sort of inclusion of those voices did mean that different issues got raised. And there were plenary discussions where, you know, nobody really, really talked about the sort of nonsense sci-fi, existential risk stuff to do with AI. And they said, you know, these are real people and we have real evidence. And this is testimony from people already getting harmed from the real risks of AI. Plus also, we might be overlooking some areas of potential for the technology where Silicon Valley might have relatively little interest, but actually it should be the job of governments to direct the technology towards those areas of public value as well. So it's not just all about risk, it's also about missed opportunities.

Shobita 00:20:40 That sounds, frankly, I mean that's impressive because while it is true that in the U.S. when it comes to AI, there is growing connection between researchers and civil society, in the policy conversations that I have been involved in and that I've witnessed, I'm afraid we don't see that. We don't see enough civil society involvement and frankly we don't see enough diversity. It's shocking, really shocking to me how homogenous the conversations – the policy conversations, the sort of – it's almost like the more serious the policy conversation in the U.S. the less diversity you see.

Jack 00:21:16 Yeah. Well, it should be noted that Open AI's new board, for example, having previously had two women on the board, both of those women have been turfed out. The board is now all white men. Including Larry Summers. And if you don't know about Larry Summers, it's worth just googling some of his statements about science and gender.

Shobita 00:21:33 Oh yeah. I'm sure we've complained about him in the podcast before. I mean he's <laughs>

Jack 00:21:38 Yeah. It is this thing that, you know, when push comes to shove and people are making decisions in a hurry, and they're making them off the top of their head. They can suddenly slip back into not caring at all about these issues like diversity.

Shobita Oh yeah. I mean that is the best evidence of people's inner biases, right? Well on that note, perhaps you should introduce our new guest for this episode.

Jack Just before it, can I just do a little bit on the techno optimist manifesto?

Shobita 00:21:53 Sure. Sure, I know you can't resist. Go for it.

Jack 00:21:56 Just 'cause I think this is a sort of case in point. So this was a rant that was published by Marc Andreessen, again, a few weeks ago. And it's an extraordinary document. I think the wrong thing to do is to sort of critique it line by line because it clearly has no engagement at all with any sort of – there aren't really any ideas in there. And if to the extent that there's a sort of philosophy, it's a sort of anti-political philosophy. It's like we don't really need to care about ideas. You probably couldn't find a political philosopher that Marc Andreesen cares about. But it seemed to me an example, there was this lovely phrase in the title of a book

from a guy called Adrian Daub, who is I think a literature professor at Stanford who wrote this book with the title What Tech Calls Thinking. Which is all about the sort of the quotes ideas that inform Silicon Valley or the sorts of things that Silicon Valley business folk talk about.
Jack 00:22:49 And this manifesto is full of what tech calls thinking. And in the absence of any philosophy, I mean the bit that you should control f your way to is Marc Andreessen's list of imagined enemies where he says – like any good manifesto, but I'm afraid, lacking the poetry of any previous manifesto – he lists out the enemies. The enemies are bureaucracy, obviously their regulation. Oddly one of his enemies is monopolies. Which, given that he is very much in the business of creating monopolies, is quite an odd one. One of them is the precautionary principle. Although anybody that's ever heard of the precautionary principle would not agree with his characterization of it. But he lists all of these things to give the impression that somehow he and his friends in Silicon Valley are embattled and you know, they need to be defended against all of their powerful enemies who seek to undo them. And you sort of think, what's going on in Silicon Valley where these people – because one version, you know, if I was in Silicon Valley, I'd be going, guys, we've accidentally become the richest, most powerful people ever. And maybe we should just keep quiet about that and hope that people don't ask difficult questions and we can carry on raking it in. Whereas this appears to invite the criticism that they have done this all by accident in the absence of any real plan or, or any idea. So it's an extraordinary –
Shobita 00:24:23 And not to worry that they are benign dictators. Right? I mean, at the end of the day, that's what it is.
Jack 00:24:30 Oh, absolutely. You would, you would think, you know, I mean give give the people bread and circuses, but don't say too much about what your philosophy is. Anyway, we'll put the techno optimistic manifesto in the show notes, and some of you will be infused by the fact that for example, Marc Andreessen states, without any irony at all, that there is no material problem that cannot be solved with more technology. So give Marc Andreesen all the technology he wants and everything will be fine. So let's introduce Sarah, shall we?
Shobita 00:24:58 Yeah, go for it!
Jack 00:25:00 So Sarah de Rijcke, our guest this month on the podcast, she is professor at Leiden University, and this conversation – so Sarah is particularly interesting because she is one of these researchers, probably the leading researcher who looks at how science gets measured and how the measurement of science affects the science that gets done. Which is a hugely important thing. You know, this is not just a bureaucratic thing of, how do we work out where money should go and how do we tell when science is good or not. I think all of us at universities know that the numbers that increasingly define our contribution are really powerful numbers. And so hopefully you'll enjoy this conversation with Sarah de Rijcke about how the things that we measure affect the things that we do.

Interview

Jack 00:25:57 So Sarah, welcome to The Received Wisdom. It's great to have you here.
Sarah Thank you. It's great to be here.
Jack There are many things that we could talk to you about because you have, like the very best of our guests, spent your career at the sort of interface between Science and

Technology Studies and policy in various ways. But is it fair to say that you're, the sort of the thing that defines your recent obsessions, both sort of academically and in policy terms is the idea of research assessment, which I guess needs a little bit of, of sort of backing up. The idea of measuring and talking about what looks like good science and how odd that is. And to people that maybe aren't in universities or anything else, we should just step back and just talk a bit about what research assessment is, where it comes from and why we should care about it. If that isn't too big a starting point.

Sarah 00:26:57 It's a huge question, but we do need to take a historical step back though. If we talk about the introduction of a formal research assessment, as we know it now. With certain countries' links to funding and very, very heavily standardized, very time consuming processes to assess the quality of research and researchers. When I started to do research on this, it was also – that was 10, 12 years ago – for me that was also a new topic. I was interested in things like the construction of objectivity and trust in numbers and all these things, and then ended up in Leiden with, at that time, a Center for Scientometrics.

Jack 00:27:38 And just tell us what Scientometrics was.

Sarah 00:27:40 Yeah, Scientometrics is many things. So one of the things it does is it studies science system dynamics through quantitative means using, for instance, citation analysis and citations can also be used quite instrumentally with bibliometrics. And that is also where the link with evaluation comes in. So using citation analysis and patterns between publications, citing each other to assess quality. Like having citations and citation analysis as a proxy for quality and impact of certain publications and outputs. And that kind of field goes way back. The link between citation analysis and formal research assessment – that goes back to the 1980s. That's also when research assessment in itself became more prominent as a feature of the science and higher education system.

Jack 00:28:37 In my country, we have a thing called the Research Excellence Framework, which you know really well where, you know, every few years we have to justify our research. And part of that is to do with measurement and this thing that to people outside academia seems really odd, which is, you know, counting citations – the number of times a piece of work has been mentioned by another piece of work, which, you know, seems a bit odd unless that's the world that you are living in. Why is that sort of stuff a problem? Why should we worry about it?

Sarah 00:29:09 So one of the issues is that if you look at the ways in which indicators, performance metrics are used in research evaluation, most of the times it's the really simplistic stupid ones that are being used. So if you would talk with a scientometrician, a bibliometrician, they get very upset about those types of simplistic measures that don't do justice to more complex, maybe more apt ways to measure scientific performance. So that's a distinction that I think we should make. So, the most visible citation metrics are also the most problematic ones: the General Impact Factor and the H Index. Why is that a problem? Well, that's a problem because they're too simplistic, but a focus on output as one of the most important products of academic work is a very limited way of looking at the value of academic activity. So that's one problem that we have in the system, that the production of articles has become such a dominant way of looking at the quality of researchers and universities. And then the ways in which that is measured – that's a second order issue here. That is done in very simplistic ways. It could be

done in more sophisticated ways, but then you still have that issue of that singular focus on a very specific type of activity that academics do. And that is publishing articles, and to a lesser extent also books and other forms of output, but they aren't as visible.
Jack 00:30:44 And if we are looking for the real sort of bad guy in the metric space, is it things like the H index, the single number that purports to – if you go to Google Scholar and look somebody up, is it that single number that says, this is, in effect, how good Google Scholar thinks this person is because it's run the numbers based on their publications? Should that be the focus of our concern?
Sarah 00:31:08 Yeah, that, that's one of the issues. When we became more web-based, those types of interfaces like Google Scholar – but also the, when you look at a journal website, the first thing you see is the General Impact Factor, which is another kind of simplistic metric that was designed for one purpose and is now used very instrumentally for a completely different purpose, so that people become their H Index in a sense. In some systems, it's also literally the case. There was this running gag <laugh> going on about a researcher visiting a lab in one of the Asian countries, I won't mention which one it was, but, and then being introduced to the lab staff and they introduced themselves with their names in their H Index to signal importance. It's half of a joke, but it's half not a joke because that is, in many fields, the ways in which authority and expertise are being claimed.
Shobita 00:32:00 So what exactly is involved in putting the H Index number together and what's wrong with it?
Sarah 00:32:07 Well, there are many things <laugh> wrong with it. What it does, it's actually a number that looks at the number of articles a researcher has produced and how much those articles have been cited. So it's a calculation based on those two figures. So an H Index of 12 would signal something of how many articles someone has produced that have been cited 12 times or more. So if you have a high H Index, you have a high production and you probably work in fields in which it's possible to produce a lot, which is one of the problems as well with the number because some fields have a much slower rate of production. Another issue with the H Index is that it just gets bigger with age. So it's discriminatory against early career people.
Jack 00:32:59 So I don't hear anybody ever standing up for the H Index. It might be a sort of political correctness issue at a British university, but everybody says metrics are bad and you know, we need to evaluate people as people, we need qualitative evaluation as well as these numbers. And yet these things persist and they're still at the top of Google Scholar pages. They're still, as you say, the first thing that you see when you go and visit a journal's website. So why, if they don't have any friends, why are they still so popular?
Sarah 00:33:38 I absolutely think you're totally wrong about that. <laugh> You're in a nice bubble <laugh>.
Jack 00:33:45 I obviously am speaking to the wrong people. Yeah. Good. Well that's, that's good to know.
Sarah 00:33:50 It's actually one of the issues that I experienced with the research assessment reform movement that I'm also trying to contribute to – responsible metrics reform – is actually that we now see that when there's a potential tipping point in this reform – like we have right now in the Dutch system in which the entire system has kind of mobilized, including the universities, the academic medical centers, the funders and societies toward more

responsible forms of assessment – we see a huge backlash and we see actually a lot of people saying there is not a lot of wrong with these simplistic measures like the H Index or the GIF because it really matches the way I think about my excellent colleagues. Those that I consider to be excellent also have a high H Index. So I don't really see a point in that.
Jack 00:34:43 Right, that's interesting. So you sort of feel it in the breach, that when reform comes along, the sort of reactionary defense of these things becomes a bit clear.
Shobita 00:34:52 Of course there's a power dimension here, right? The people who currently have the most power are benefiting from the current system of metrics. They have no interest in changing the system because they have power. I mean that's what we know from STS is that the number is a distillation of a complex set of power relations and if you wanna change it then you're gonna have to disrupt that in some way.
Sarah 00:35:20 Yes. And it partly has to do with the fact that people don't see a clear alternative and that there are reasons why an alternative might be less attractive, for instance, more time consuming. But there's also something else going on. I think at least in the Dutch debate, there's also an underlying issue with where the funding comes from and where the funding goes to. So it has gone to established disciplines in the natural sciences and life sciences. It's a complex picture because you also see shift in the funding landscape toward more mission oriented research. Research that can have a broader relevance to society, less funding to more basic fundamental research. There are connections I think in the debate between the types of metrics or indicators that are being proposed or that have become very dominant and the funding flows and that kind of policy landscape. So there's a lot of stake, but this is one way in which people argue against a shift.
Jack 00:36:22 I want to know, Sarah, more about the sort of how of that reform. What has worked in order to change this system that, as Shobita points out, is there are a lot of vested interests in the status quo. Just before we do that though, in terms of the why of the reform, you mentioned that for example, at the moment some people benefit, which means that if you are a young scientist or a scientist researcher in a discipline that gets systematically lower metric scores, then it's harder for you to make your case in a world in which these numbers have exaggerated weight. Are there sort of other reasons why either science itself should care? Does it make for less innovative science? Or reasons why the public and stakeholders should care? Does it make for the wrong sorts of science or dangerous science? What are the sorts of arguments that are most persuasive there?
Sarah 00:37:17 No, I was just thinking while you were talking. I think one of the things that we've tried to do in the past 10 years with our work is look at the epistemic dimensions of this. But there's also a clear bureaucratic policy dimension to this that the trust in numbers type of work already in 1995 pointed towards the ways in which numbers travel at a distance. So for bureaucratic purposes and for public accountability purposes, the increasing use of metrics in research assessment over the past decades also makes sense. Also in a neoliberal type of politics. But I was also very interested in looking at the ways in which scientific communities also play a role in facilitating the existence of metric regimes. That's a different type of politics. It's related. That's the kind of work that we've tried to do. And the things that I'm now saying about the Dutch reform movement – that's not based on solid research that's based on being a participant in the debates.

Sarah 00:38:19 I think what has been backed by a lot of research is the ways in which performance measurement in academic assessments has had an effect on research when it comes to goal displacement and task reduction. So these types of things have been established. So goal replacement is maybe an obvious – the measure becomes the target. So if you set certain criteria, people start to behave accordingly. So if you evaluate someone on the basis of their number of articles published in a certain period, people will start to behave accordingly and will start to want to produce more. And that might lead to more incremental results, salami slicing, a lot of bad co-authoring practices, a lot of that kind of strategic behavior. And task reduction, I think that's the one I care a lot about too because that's the point about the focus on publishing as an activity that matters most when it comes to looking at academic work.
Sarah 00:39:21 And a colleague that maybe both of you know, Ismael Rafols, he had at some point developed a nice slide in which he used the streetlight effect to make this point about what you actually highlight when you use certain metrics and all the stuff you can't research that is outside of that little space that is being lit. The research space is much larger and the space of problems that's even larger. So we don't want that to be decreased. We want it to be bigger. And I think that is also an argument that most scientists care about and also a larger public should, I think, be made aware of because that's an issue for all of us. That's one thing I think the tie with maybe less epistemic concerns – that's related to the knowledge and the knowledge production itself – but also the ways in which this debate is tied to the debate about well-being of people in the system. And that is something that if you look at the past, well 10 years in which this reform movement emerged, it was first mainly about the metrics and about the really huge fraud cases that started to emerge where people started to become concerned about research waste type of literature in biomedical sciences and behavioral sciences. But now there's also a lot of concern linked to this debate around wellbeing and mental health. And I think that's also a very, very important point to take into account.
Shobita 00:40:52 I know that there's been a lot of work about how women, people of color tend to get cited less and so perhaps also are less likely to be invited to participate in collaborations because of the social systems and biases. And so these indexes end up, like all algorithms, reflecting the social biases as well.
Sarah 00:41:16 So I think a little bit of nuance is needed. I fully agree with the argument, but then I also saw over the past years that it also depends a little bit on when and and in what ways metrics or kind of citation analysis or other numbering practices are being introduced. So when it comes to well women for instance, there's also some evidence that points to the emancipatory effects that metrics have had on careers of female scholars. But overall, I think you could say that there's a bias against, and that same type of argument is also important to make when you look at national research systems, I think. So it's not, citation analyses are not bad across the board. There are systems in which it is relevant to introduce that kind of system, to fight nepotism for instance.
Shobita 00:42:12 I know there are also these initiatives, really grassroots movement kinds of things like Cite Black Women or to Diversify Syllabi, which of course will ultimately have knock on effects because people will know about scholarship. And so I'm wondering what you think about those as strategies. Do those kinds of strategies work, or are they necessary but not sufficient?

Sarah 00:42:36 I'm not sure. That's also because this is not my field of expertise. I sympathize a lot with it. I also think it's important. My hunch would be the second, it's important but not sufficient, because one of the things that I also think needs to happen is something that I think that book – I think it's called Data Feminism, but I'm not sure if that's the title. What that did so well is to deconstruct the types of values that are put into methods in research. But also the same applies to the information about research and the governance of research. So a lot of these types of values are about methodological considerations and not necessarily about more social justice or epistemic justice type of considerations. And that kind of point, I think, doesn't come across at scale enough. And I would love for that to be discussed more. And it's a very difficult thing to do in this space because it's so consumed by these types of methodological considerations about a certain interpretation of objectivity and transparency and not necessarily about are we doing these for the right reasons? Who's included? Who's excluded? And it's a space occupied by a big commercial interest as well. So that's why I was a bit hesitant about, is it enough to do this? Because it's so dominated by vested interest, political interest, commercial interests, and a certain interpretation of what it is to do proper methods in assessment too.
Shobita 00:44:22 I suppose when you talk about vested interests or commercial interests, you're thinking about journals.
Sarah 00:44:28 Not only journals. So the publishers that are in this space, they do more than publishing journals. They also have moved into the space of research intelligence. So there's a lot of data analytics on researcher activities beyond the space of journals.
Shobita 00:44:50 So it's an industry, basically.
Sarah 00:44:52 Yeah, it's an industry. Yeah. And it's one that I think a lot of people aren't aware of how far they are already in crunching data about researcher activities.
Jack 00:45:04 Can I ask you about the how of reform bit? I'm really interested in, given all of the context, the sort of political and technical thickets around this system as it is – you know, the political interests involved in needing to measure and audit the sort of scientific interests in needing to give credit and maintain resources. How do you go about changing a system like that? Because as somebody sort of outside this system, I've seen things like the Declaration on Research Assessment that I guess now is about 10 years old, a big sort of plan to say, this is what we think is bad and this is how we think it needs to change. And I've seen my own university promise that, for example, in promotions, it's gonna use a broader range of criteria. I've seen journals say to the world, we are gonna do things differently because we think that we'll get more interesting research and it will be fairer on the people that want to write the publications. And yet in some ways things are maybe worse than ever, as the amount of information, the number of scientists, the number of countries just keeps on going up and up and up. So how have you found success in trying to reform a system that's that sort of densely built?
Sarah 00:46:33 One of the things that I've thought about a lot when moving to the Center for Science and Technology studies in Leiden was the fact that being in that institutional context didn't allow me to take an outsider perspective anymore. And I had to decide whether or not I wanted to do this from within. And if not, I should quit my job there because that is an institution, it does scientometrics, it produces metrics, it works with industry, it works with policy makers. Also, we have a company part that also produces indicators for assessment. So I'm implicated

in that sense, and in that space it gives you a seat at the table. And I think that has made a little bit of a difference in how people have taken me as an individual doing this. And there are many more people in this space trying to affect reform.

Sarah 00:47:29 But I think that has made a difference because I am really an odd one out. I'm a qualitative ethnographic STS researcher and female <laugh>. So it's not necessarily the case that that would've worked. But I think it's mainly the institutional context and sitting at the table with parties like Elsevier and Clarivate and university boards already kind of in that space, I was given a little bit of room to think about these issues from within. And that's also how we were able to, I think, create traction with the Leiden Manifesto for Research Metrics in 2015, that, alongside the DORA decoration and a couple of other initiatives and the metric tide in the U.K., signaled kind of inappropriate and appropriate uses of metrics. And that was a very visible type of output. And I think that has ironically done a lot to my personal visibility.

Jack 00:48:27 You know, talking to people like Elsevier. So Elsevier, an enormous publisher that owns and runs a huge number of journals and various other things, but it isn't just a publisher anymore, is it? I mean it's a sort of data hoover. It's become a real internet company for whom I'm guessing the data is now the power rather than the ability to extract vast profits from the free labor of the authors and peer reviewers that it depends upon. Round the table with publishers like that, do they say, yes, we need to do things better, we will be more responsible, and then do they just soft pedal those actions, good guys in this debate or something else?

Sarah 00:49:14 Yes and no <laugh>, so Elsevier is an interesting case because they are a really multifaceted organization. So that's why I say yes and no, it's not a black and white kind of answer. Because there are parts of the Elsevier company are extremely innovative and open to open research, open to open metadata initiatives, with some pressure. And others are, I think, more black boxed. So it goes a certain way but not the entire way. They're very smart, they're very good at also reeling in academics to sit on their advisory boards in new initiatives. They have very sophisticated methods and innovative potential that can do good in this space, but it doesn't necessarily always do so. And I think one of the issues that I've been struggling with and that I've become aware of by being in this institutional context is indeed how fast moving they are and that our debates are really behind when we talk about the effects of the General Impact Factor and thinking within the cases and all the things that I've researched. They've moved ahead.

Sarah 00:50:22 They are dealing with research intelligence. They're not looking at that anymore. So what I looked very critically at with task force in the Netherlands was also, how can we do research intelligence responsibly and how can universities – how can their knowledge be considered as a public good, and how can we avoid commercial black boxed tools and infrastructures to be put in place that effectively will define science policy? And we outsource that increasingly to companies including Elsevier, and to create awareness around that requires a level of knowledge and sophistication about that knowledge that I find very difficult to have myself because I wasn't trained to think like that. But that is one of the things that I think is important to one, understand, and to try to intervene in those types of domains, for instance, by producing manifestos or principles. But that's not enough. That's one thing we did in this space too with that task force. We produced principles for open research information and that was literally because the Dutch universities were getting into this deal with Elsevier, around getting

open access to the journal publications, whilst also giving Elsevier that data about research and research information, that Elsevier can now pioneer all kinds of interesting tools on.
Jack 00:52:00 Oh, so that's really interesting 'cause Elsevier basically know that the old model of science publishing is broken. But they also know that the sort of aggregated data from all of these things is becoming more and more valuable.
Sarah 00:52:14 The gold. Yeah, exactly. And that's where they are very clever and we also have clever people at universities, but what we do less well <laugh>, is to mobilize ourselves and to stop talking and to really unite and do things at scale for many reasons. But I think then in the Netherlands we might have an opportunity because we are small and there's already national initiatives around responsible assessment, responsible metrics. So some other countries are looking at us, for how, how we can maybe produce more open knowledge bases and to maybe move towards more open infrastructure. But obviously we can't do that alone.
Shobita 00:52:57 Last year I directed this report on generative AI in large language models. And of course now everybody is talking about this and we've talked about it on the podcast before, but one of the things that we were thinking about was, right now these generative AI are based on data that's already open. It's based on the open internet. But we were wondering whether companies like Elsevier that own lots of journals and therefore have a lot of intellectual property at a moment where there's this recognition that there's a broken publishing model might try to – you know, now there are these efforts to try to create essentially specific generative AI based on the original models. And so we thought maybe that might be a way that these companies try to maintain their intellectual property, maintain their position in the space, and this is a place where you could imagine governments or universities getting together to try to counter it. But I haven't heard of anything like that. And I'm wondering if you've thought about the impacts of generative AI in this space or what perhaps you think the implications might be.
Sarah 00:54:12 It's not something I've done research on myself, but there's emerging work I think that asks good questions. Your own report being one of them about what generative AI does to authorship, peer review, what kinds of commercial interests might come into play here. A lot of it is unknown, but the debates have a lot of similarity, I think, with the debates around the uses of bibliometrics and the black boxing of that kind of tool and the ways in which that affects peer review and authorship and <laugh> and all these things. That is what strikes me, this kind of similarity and maybe continuation of certain topics and issues. And certainly the things that we outlined in the open research information – the principles – some of them really also apply here around provenance and around the public good and about well, who has access and, and all these things.
Sarah 00:55:13 But what I also find very interesting is how this also, from an STS perspective, it also brings up the point about what do we consider to be quality? Or how is that going to be redefined or not through tools and technologies like this? And it's definitely going to do something because we see experiments, we see funders starting to experiment with this, and it's very early stage right now, but that is going to have an effect. And the ways in which the tech industry and tech scientists respond to this is also very fascinating that they are the ones that are now kind of anxious about <laugh> what AI might do. I'd like people like you or others also to start to unpack that because it's not the philosophers, it's not the STS – but it's like, why are they saying that? I think a colleague from the Netherlands, from Wageningen University,

Vincent Blok, he pointed this out as well. And he said something like, I think the ways in which that happens might also be a very strategic move to redefine human agency in informatics terms and to say, okay, AI is almost surpassing human human capacity to do this, bypassing all kinds of political and other kind of real world messy politics and cultural dynamics.
Jack 00:56:40 I mean, it's so interesting that, I mean, research assessment is one of these areas maybe where the algorithms have been in place for a very long time. These metrics are in effect, just algorithmic sequences that enable you to count based on a certain measure of quality with all of the actual qualitative diversity stripped away. So they're really ripe for further automation. And you could argue that bits of science publishing and the way that science publications are already produced are pretty algorithmic as well. So you could imagine that creation of vast numbers of papers that are not just written by Chat GPT, but also reviewed by Chat GPT and published, playing this quantitative game by itself in the same way as – I'm reminded of Donald McKenzie's work on high frequency trading where you have computers just buying and selling stocks to each other.
Sarah 00:57:36 Right, yes.
Jack 00:57:37 And you know, half of all trades, at least, now happen like that. And until you have somebody coming in and saying, uh, why are we doing this <laugh>, then it will carry on. Yeah, I mean one thing I wanted to ask you about was the way that the sort of incentives to automate do come through things like research assessment. You know, one of the things at stake in the British case is certainly the desire among some policymakers to hand over research assessment to the data companies and to say, well, can you actually tell us who's best? Can you tell us who deserves the money? Can you tell us where our money should be best spent and then we'll just do it that way?
Sarah 00:58:16 That's already the case for decades. It is the way in which universities are often run, and it is the type of question that a bibliometrics institute receives. And what happens if we merge these three universities? There's a historical parallel with the introduction of metrics, bibliometrics, in research assessment in the end of the seventies, early eighties. That also latched on to existing ways of evaluating each other and scholarly work. That is a practice that of course existed for centuries. And part of the reason why it's so successful is also internal scientific, and not only because of neoliberalism and other external elements. And here I think, yeah, there's probably a bit of the same type of argument to be made; it latches onto existing infrastructures and metrics and the ways in which powerful actors want to make decisions.
Shobita 00:59:12 One question that I had that I don't think we've really talked about yet is, you know, when you are in these conversations with university administrators or with policymakers, people who are engaged in science policy, are there arguments that you find particularly compelling or stories that you find particularly compelling or data? I'm just curious. These are often people who are at a few levels removed and so they may have lost touch or may not have ever had been in touch with the everyday practices of research. And so I'm just wondering if there's something that you think that has been quite compelling in making these arguments and pushing the ball forward?
Sarah 00:59:56 Something that comes to mind is the way in which – I'm thinking about the emergence of meta science and meta scientists, because they have been very successful in making <laugh> arguments that have confronted policymakers with some of these dynamics.

And I think more successful than I and other STS people have been, perhaps. So I was thinking about that, but I don't know if we should get into that. One thing I think that has been a successful argument is the argument about research waste. The idea that a lot of resources are being put into research and innovation, research and development, and there's also a lot of waste, bad research, questionable research practices, all those types of terminologies that make me a bit nervous as an STS scholar. But I see that that's a very successful way of making the argument. So that's one, and the increasing investment in the system – we really need to make sure that we understand what is a successful way of doing research and how to assess that because of the increasing investments.

Sarah 01:01:07 And then COVID and all that kind of argument is a very visible leverage. And we have had, I think, successes on a smaller scale with the more type of STS argument, for instance, around reproducibility. We unpacked the notion of reproducibility with colleagues and other colleagues in, in other countries to go against this idea that there's one version of science and one version of method and one way in which quality is being controlled. And reproducibility being an example of good quality findings and outcomes – we pushed back on that and that was then also inserted into policy and into funding schemes in the Dutch context. And it's very hard because you get into arguments with fellow social scientists when you start to unpack and deconstruct a notion like that, that has played out very well in disciplines that were in the research waste discussion, and trying to fight fraud in their disciplines in the behavioral sciences and in the life sciences by using this argument of reproducibility as one way to clean this space up. So we were actually seen as a bit threatening by making this argument about, well, it's not necessarily the best quality control mechanisms for all fields and social sciences, blah, blah, blah. But that I think is one way in which change can be affected and argument around money and efficiency always works and the more complex argument <laugh> sometimes works.

Shobita 01:02:43 I mean, what you just said also gets at something else that I was interested in, which is that there's something also very strange about the rise of indicators in the sense that it, there are all these embedded assumptions about a singular way of doing science and research. And in practice there's not only enormous variation, but there's of course been a lot of work that shows that it's actually the, in the interstices between fields where there's a lot of interesting and innovative work that's done. And yet I feel like often when you see this around the world, policymakers in general seem to be trying to push people more and more, either through these kinds of indicators, evaluation, research evaluation, or other methods to sort of push them into this very narrow scientized, high citation method of science, right? Which is kind of obviously bad – obvious to me, I guess as a researcher but – and as an STS scholar – but, but I don't know how we make that case better to people who are making the decisions. Because of course there's also the economic dimension, which is that, at the same time those kinds of science that are getting more funding and that are valued and that seem like they're the model way of doing research, are also tend to be those that are more economically lucrative as well.

Sarah 01:04:03 That's a very, very good point and a very difficult one to tackle. But that's also – I realized while you were speaking, one of the reasons why maybe the debate around reform gained a little bit more traction is actually because of the rise of relevance of inter- and transdisciplinary work also in policy – I think, at least I think in Europe, but I think not only in

Europe – and also the fact that we've, as a system, not been able to develop indicators for societal relevance or social impact. The term we used to use – ‘valorization’ – has a very economic connotation, but that is kind of established now that we can't do that. So it has to be done through other means. It has to be more qualitative. The same goes a little bit for inter- and transdisciplinarity. That's too complex to do metrically. So there's an opening for more qualitative type of approaches because of that as well.

Jack 01:05:04 That's interesting, isn't it? That the research that society policy makers even value most might be the research that doesn't fit the boxes that we've constructed, and therefore that will be the thing that aids reform. Sarah, we should wrap up, but thank you very much. I was expecting to find this a rather sort of depressing conversation about how power yet again finds ways to cement itself, but actually there is something rather inspiring in the way that you describe how your sort of critical lens on these things can actually open up political opportunities and does seem to be an area where things are moving in the right direction with the help of people like you. So thank you for joining us.

Sarah 01:05:46 Thank you for having me. It's been wonderful.

Outro

Shobita The Received Wisdom podcast is edited by Edward Waisanen and produced with help from the Shapiro Design Lab at the University of Michigan. We would love it if you would subscribe and rate us on your favorite podcasting platforms. You can also find all the recordings, transcripts and links to the books, articles and other stuff we discuss in this episode at our website, thereceivedwisdom.org. That's thereceivedwisdom, one word, dot org. Talk to you soon!