WHY INFRASTRUCTURE POWER IS AS IMPORTANT AS PLATFORM GOVERNANCE

IN CONVERSATION WITH CORINNE CATH-SPETH



Dr. Corinne Cath-Speth is a cultural anthropologist. We interviewed Corinne for the Response-ability.tech podcast. Corinne's PhD, Changing Minds and Machines, was an ethnographic study of Internet governance, the culture(s) and politics of Internet infrastructure, standardization and civil society. What follows is an edited version of our interview.

THE INVISIBILITY OF INTERNET INFRASTRUCTURE

Much of the literature in the social sciences tends to focus on power in the context of the most visible aspects of the Internet, primarily consumer-facing services or applications like social media platforms. But for all of these services to function, there is a range of both individuals and organizations that build the underlying infrastructure to support it. This infrastructure is anything from physical hardware such as your computer but also the cables through which bits run to protocol design, so the kind of technologies that enable different companies and their networks to talk to each other and exchange information.

In my research, I talk about these powerful companies as Internet infrastructure actors. So who are these organizations and what is Internet infrastructure? For me, infrastructure is really about those aspects of the Internet that Plantin and his collaborators call reliable, transparent, widely shared, and invisible to users until it breaks down.

I like this particular definition because it doesn't limit Internet infrastructure to a set number of technologies. It takes an expansive approach, namely what Christian Sandvig called the emergent essential of the Internet and includes its pipes, its protocols, its politics, but also the people that make the Internet tick.

POWER AND INTERNET INFRASTRUCTURE DESIGN

On June 8th this year a technical error caused by Internet infrastructure company, Fastly, had a large impact on the entirety of our online ecosystem, for example, PayPal, the New York Times, CNN, and BBC's websites, were all unavailable for quite some time.

Fastly is not a household name for most people who use the Internet on a daily basis. It is one of a handful of companies that provide what is called Content Delivery Network, or CDN. It is in these CDN's that the question of infrastructure power comes in.

This raises really hard questions: Who are these infrastructure actors? How do they make decisions? And what does accountability for their infrastructural power look like?

Companies like Fastly but also Cloudflare, Akamai, and Amazon Web Services, as well as other cloud companies, play really big role as CDN's. There's only a handful of players. Which means that when one of those players has an issue, like we saw in June, a substantial part of its clients and their websites are going to be affected. Fastly is actually only the fifth biggest of these players. What this particular incident with Fastly shows is how power is

enacted through the functioning and maintenance of Internet infrastructure design.

These decisions by these companies, or mistakes in Fastly's case, essentially touch on who can control what aspect of the Internet. And in this sense they have power of over how we experience it. A single decision or mistake can echo across the Internet and this in turn raises really hard questions around, who are these infrastructure actors? How do they make decisions? And what does accountability for their infrastructural power look like? That's where my PhD research comes in.

INFRASTRUCTURE POWER IS AS IMPORTANT AS PLATFORM GOVERNANCE

For me, at least, part of the reason why this topic is so important is because infrastructure actors can explicitly or inadvertently directly influence what content and information is available to us online in ways similar to platforms. There are many recent examples that really underline that it's not where the companies make a mistake, but where they actively decide to deny services to certain clients.

We've seen that with Cloudflare that banned 8chan after the bulletin board was used to encourage a mass shooter in the US. [Suzanne van Geuns and Corinne wrote an article for the Brookings Institute.] We've seen GoDaddy, which is a web hosting company, terminate its contract with an anti-abortion website more recently.

Infrastructure actors can explicitly or inadvertently directly influence what content and information is available to us online in ways similar to platforms.

And what makes the Cloudflare example particularly interesting is that sometimes these infrastructure providers make active political decisions about what content should be available online and sometimes we collectively can get behind the politics of their decisions. But the ease with which they can actually preside over online content can nonetheless be somewhat worrying. Especially because these companies tend not to be subject to the same kind of scrutiny that social media platforms are.

These kind of infrastructure companies tend to think of themselves and speak about themselves as neutral providers of infrastructure. What that argument implies is that infrastructure companies can't be held accountable for what passes through their servers because their work is largely invisible. When these companies claim to be neutral conduits, they are essentially also abdicating responsibility for, in this particular case, the online hate that was present on a website that they supported.

But just because the Internet infrastructure is largely invisible to users doesn't mean that it's



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apolitical and it doesn't mean that these companies can claim neutrality. Rather we should try and think about these companies in a different way.

And what companies like Cloudflare tend to say is, we are not political actors because, by and large, we don't make decisions about what content is available. But by deciding to keep particular content online as opposed to rescinding their services and pulling it offline is a political decision.

TECHNICAL ACTORS' NARROW UNDERSTANDING OF POLITICS

The way in which technical actors understand politics is often incredibly narrow. So, when you and I, anthropologists of technology, speak about politics, it's a much broader spectrum of decisions that have particular social outcomes, that have particular impacts, that talk about power. Whereas for a lot of

the engineers that I have spoken to genuinely politics is a bad word because they tend to associate it with government intervention. And they, in certain cases, have a valid point that government intervention in their technical work does not always lead to what they perceive to be the best technical outcomes.

For them essentially politics is a bad word. This leads to a lot of confusion when you have an engineer speaking to someone, a social scientist like myself or a human rights activist, who wants to have a conversation about the particular political impact of the design that they're building.

To ensure there is greater recognition of the fact that politics is inherent to the kind of infrastructure decisions that these companies make, the starting point needs to be a conversation, not just about technology and design and the potential impact it has on shaping this society, but also about what we mean by politics, and can we come to an agreement on that, such that we can subsequently try to figure out what kind of a mediating role does the technology that you're building play in this.

There is this notion of what I call "engineered innocence" in the IETF, which encourages its technologists to primarily intervene in human rights matters when those aligned with their culturally-situated commitments.

THE ENGINEERING CULTURES OF INFRASTRUCTURE ORGANIZATIONS

I was interested in understanding how the engineering cultures of infrastructure organizations influence *what* but also *whose* values end up steering technical discussions. It comes as no surprise to anyone studying anthropology that this is what I'm interested in. And within that larger debate, I was especially interested in the ability of civil society, in particular the professionals working for human rights and civil liberties organizations, to get their voices and concerns included in the development of the Internet's technical infrastructure.

These infrastructure companies are notoriously hard to get access to and so my fieldwork took place in an organization called the Internet Engineering Taskforce, or IETF. The IETF is an open standards body that brings together some of the biggest names in tech. So Google, Apple, Facebook, Huawei. They all go there to collectively develop open standards that allow the Internet to work.

In the Internet Engineering Taskforce these civil society representatives, who are interested in bringing a public interest perspective to Internet infrastructure, worked alongside the engineers of these various companies and other participants. They ran their own research group and they also participated in the technical working groups of the Internet Engineering Taskforce. My PhD research specifically asks what role IETF culture plays in its structural politics. And to answer that question, I essentially conducted an ethnographic case study of civil society working in the IETF.

The conservative protocol politics and a pretty narrow network of imaginaries that are dominant in the IETF shape the overall development of the Internet. There is this notion of what I call "engineered innocence" in the IETF that encourages its technologists to primarily intervene in human rights matters when those aligned with their culturally-situated commitments.

For instance, they are more inclined to worry about government surveillance than corporate surveillance, they are more worried about privacy than they are about anti-discrimination, even though these are both human rights that are relevant in the context of the Internet. In my empirical chapters I focus on three interrelated aspects of the IETF: its organizational culture, its exclusionary working practices and how these affect the reception of human rights values, and how the IEFT's imaginaries shape engineers' narrow understanding of responsibility for the technology that they choose to create, to sort of quote their own words back at them.

The IETF's functioning might look like it's procedurally open because it has successful meetings, because it has open mailing lists, but its particular working practices, which are rooted in confrontation and abrasiveness, actually make it culturally closed-off.

The engineers, the technologists, tend to see the claims and the goals of the human rights advocates as imposing requirements on their work that actually contravene their culturally-specific view of non-

prescriptiveness.

So they tend to think like, if we start thinking about and starting imposing all of these human rights outcomes, that is actually bad for the Internet and so we shouldn't be doing it. So the concerns of the human rights advocates are dismissed, not necessarily because they're irrelevant or technically impossible, but because they don't match the kind of Internet that many of the engineers tend to think of as being a good Internet.

CULTURAL NOTION OF NEUTRALITY

This cultural notion of neutrality also provides a hurdle to civil society individuals who are interested in participating. And at the same time I show that neutrality to certain extent is a front. I've spoken to many engineers who said to me, yes, publicly we talk about our work as apolitical, we talk about our work as neutral, not because we necessarily believe that to be the case, but because if we don't, we are afraid that we might invite government scrutiny or we might invite outside intervention, or we might invite regulation and we don't want that because we think things work just fine the way they do.



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The experience of the human rights advocates in this particular infrastructure organization shows that civil society will also have to deal with these kind of cultural barriers. And sometimes civil society actually risks compromising on its own goals, aims, and missions when they encounter different cultural views on technology. Because what ends up happening is that the idea of cultural frames around human rights and what good infrastructure is can overwhelm and crowd out civil society. And this is possible in part because of, and not in spite of the fact, that they have a seat at the table of the Internet Engineering Taskforce.

WHY RESEARCH INTERNET INFRASTRUCTURE?

It's so important to get at the personal drivers of our research and being upfront and explicit about how those are a key part of our research practice and the kind of decisions that we end up making.

Sometimes civil society actually risks compromising on its own goals, aims, and missions when they encounter different cultural views on technology.

As is often the case with ethnographic work, my interest in human rights advocacy in Internet infrastructure, in particular, came from a deep personal curiosity as well as my own experience.

While I was studying my bachelor and my master's degree [between 2008 and 2012] in anthropology at the University of Utrecht, the Netherlands, I was really interested in how human rights activists and human rights defenders use social media to push back against state pressure and injustice, broadly speaking.

At that time many still saw the Internet as a beacon of freedom and a key technology in toppling the regimes that fell during the Arab Spring. I was very sceptical of the Internet's potential and its ability to live up to all these big promises in terms of its ability to fundamentally upset power relations in society.

Part of the reason for my scepticism is because I'd spent several years living in Brazil, and I've worked with a number of organizations that supported activists from the favela, the unregulated settlements. It became clear that the Internet, as a communications network, did provide new avenues for dissent but rarely in a way that actually fundamentally upended the power imbalances that called for that kind of dissent to be necessary in the first place.

After my initial research focused on the use

of Internet by activists, I became part of a group of individuals interested in seeing how Internet infrastructure could be designed such that it was more sensitive to concerns other than technical and corporate drivers. I spent some time working for the civil society organization, ARTICLE 19, and there I was part of a team that focused on bringing a human-rights agenda to the technical development of the Internet. I essentially built out my PhD research starting from the questions that work raised for me.

CULTURAL ANTHROPOLOGY IS RELEVANT TO INTERNET INFRASTRUCTURE POLITICS

In 2016 I presented findings from my Master thesis at the meeting of the Réseaux IP Européens or RIPE Forum, which is a group of essentially network operators, Internet network operators. Many of them also participate in the Internet Engineering Taskforce. I argued that they as technologists have a particular responsibility to consider the impact of their technical decisions on society. It might seem like an incredibly obvious thing to ask of technologists, but in this particular technical community such a political approach to technical work is actually incredibly contentious.

His comment has stayed with me throughout the past six years because it really demonstrates the importance of anthropology to the study of Internet infrastructure.

I was told afterwards by Professor Jan Aart Scholte, a global governance scholar, that the technologist sitting next to him during my presentation said, "Ah, yes, young female anthropologist pushes all the wrong buttons".

That quote has stayed with me throughout the past six years because it really demonstrates the importance of anthropology to the study of Internet infrastructure. First this particular comment showed that the community involved in the technical governance of the Internet has very clear, if not always visible, and pretty conservative norms about who belongs.

Secondly, it shows that there are inherent politics included in the design of the Internet that are really difficult to see in any other way other than by participating. And it also suggests that by revealing the social implications of Internet protocols, or Internet infrastructure and their inherent politics, I was pushing on the buttons of this community.

It's only by doing that that you can really make clear what the existing norms are, and interrogate those, and question taken-for-granted knowledge. It is anthropology that uniquely gives us the method to do that. And in that sense, I believe that anthropology really can provide new, novel perspectives on current Internet infrastructure dilemmas, including those related to the connections between cultures and code.

SOCIAL MEDIA COMPANIES ARE ALSO INFRASTRUCTURE COMPANIES

If you are interested in platform governance, if you are interested in companies like Facebook or Google, you are also inherently interested in these questions of infrastructure, even if you might not see it that way.

Meta is also involved in laying Internet cables, physical hardware. Amazon is one of the biggest cloud providers at the moment. That is their core business, not selling us stuff, but making sure that other people have places where they can do their data science or where they can store their content.

The companies that we tend to think of as social media companies are also infrastructure companies. That raises a lot of really important questions around how comfortable we are with the fact that a handful of companies are starting to influence huge parts of the entire Internet, from its physical hardware to the apps that we use on a daily basis.

There's all of this concern about disinformation and misinformation on these platforms. But what are you doing with these Internet cables? And what is your interest in developing this? And how concerned should we be about those? Taking an infrastructural perspective, I think, also widens the lens on the kind of concerns we should have about the power that these companies have across the board.

WHY MORE CRITICAL RESEARCH IS NEEDED

I really want to encourage people to take on these questions because the last thing that we want

is to suddenly look around, and all we see are these five big cloud companies, or these five big CDN's, having a say over many parts of our lives. And us not understanding how it happened and how to undo any potential problems that might lead to. To get to a point where that is possible, we need more critical voices showing what happens in the background and asking the hard questions.

WE NEED A COUNTER-POWER

What we also need is a balanced and well-resourced counter-power to the influence of corporate actors that are steering the future of the Internet through their work on Internet infrastructure. I think some of that counter-power will take the shape of critical research, but some of it will be through interventions of civil society and public interest technologists.

Some of that will hopefully be through what I'll be doing next, namely supporting the groups that are making those critical interventions. I hope this whole field can be where the balance is struck in a way that Internet infrastructure is geared towards a shared notion of public interest and not just fuelled by the corporate demands of the day.

FURTHER READING

Corinne has kindly supplied a list of relevant sources, both non-academic and academic, that they mentioned in the podcast, for people who are interested in internet infrastructure politics and civil society.

Follow **Corinne Cath-Speth** on Twitter @c__cs and visit their website.

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