RAFFI VO: All season long, we've been telling stories about data privacy. And this has sometimes involved trying to make the invisible…visible.

For example, we've looked into the marketplace for your data that political campaigns use. Some things are invisible because they're being deliberately hidden from us. And, we confronted the harms that young people are suffering online, many of which adults don't see. Other things are invisible because we don't look hard enough.

And some things are invisible because, for many of us, it's difficult to see past our perspective here in the west…or, in the Global North. Or, what I mean is… it can be hard to escape the American perspective. And I say that as an American.

And that affects how we think about all kinds of things. And when it comes to technology, it's easy for us not to see past what's here. Without realizing it, we let the limitations of our own context place limitations on what we imagine for the future. New technologies, and new solutions, do not always come from the Global North. And if we believe otherwise, that says more about us, and our perspective, than anything about the state of global tech.

So…for a bit, let's change our perspective. And let's take a look…at India.

With a population of 1.4 billion people, India has more residents than any other country on Earth, eking past China in 2023.

The history of the Indian people is complex, and it extends many centuries before India gained its independence in 1947, after almost a century of British colonial rule. In the nearly 80 years since then, India has undergone major transformations. But it has always had a widespread, diverse population, where social, economic, and religious inequalities play a huge role in politics, and day-to-day life.

That includes the caste system.

MURALI SHANMUGAVELAN: I mean, caste, as we know, it is one of the, perhaps one of the oldest and ancient social hierarchies invented ever by the human history.

RAFFI VO: Murali Shanmugavelan is a researcher at Oxford who studies how things like caste, race, and gender intersect with digital technology.

MURALI SHANMUGAVELAN: Caste, actually, determines social hierarchy, divisions of labor, and restricts people's access to fundamental human rights. It predates religion. In some ways it's a cultural practice. It is a form of social stratification with greater inequalities assigned at birth.

RAFFI VO: If you're familiar with the Indian caste system, you've probably come across a triangular diagram showing the four main groups, or *varna*. Brahmins, at the top of the pyramid, are the highest, most privileged caste. And as you go down the pyramid, there are three other groups, in a hierarchy.

MURALI SHANMUGAVELAN: People often, you know, do this very popular triangle-based explanatory note to explain caste system, which is very particularly exclusive to Hindu religion and particularly embedded in certain kind of socio-religious practices, which is kind of true, but that's incomplete.

RAFFI VO: For one thing, that simple pyramid shows the four main castes, but this isn't nearly a complete list. There are as many as 3,000 distinct castes in India, and over 25,000 subcastes.

SAREETA AMRUTE: Manifestations of caste are across the South Asian subcontinent, across many religions.

RAFFI VO: Sareeta Amrute is an anthropology professor and the author of the book *Encoding Race, Encoding Class*, about Indian IT workers in different cultures.

SAREETA AMRUTE: Our received understandings about caste, especially outside of the subcontinent, outside of South Asia. forces us to assume that caste is something that has essentially disappeared and is no longer relevant. And in some ways we could argue that current tech conversations have emboldened and enabled certain kinds of castist behavior, online and offline.

RAFFI VO: As South Asians came to the US, the caste system came with them. And unfortunately, so too did caste discrimination.

In 2020, the state of California sued the company Cisco, accusing two upper-caste managers of discriminating against a lower-caste employee. According to the suit, the lower-caste employee was treated differently, and passed over for promotion.

But at the time, caste itself was not a protected category. And all three employees were South Asian, so "race,"especially in the way we understand it here in America, really didn't cover what was going on.

CLIP [A Conversation on Caste Equity] Thenmozhi Soundararajan: *What we've seen in the United States is that wherever South Asians go, they bring caste with them.*

RAFFI VO: Thenmozhi Soundararajan is a member of the underclass, the Dalit. And, through her organization Equality Labs, she is an outspoken activist against caste discrimination in tech.

CLIP [A Conversation on Caste Equity (7:57-8:06; 8:26-8:31; 8:35-8:45; 9:24-9:29; 9:32-9:38)] Thenmozhi Soundararajan**:** *So, every industry that has a large amount of South Asian participants, or might have South Asian owners, you start to see these, like, caste dynamics. So in tech, which is a field very much dominated by South Asian talent, is that we see all of the kind of hallmarks of hostile workplaces, but in the dynamic of caste. So we see the use of open slurs, we see harassment, the intimidation that happens when people try to aggressively locate your caste, and then open discrimination, demotions, even siloing and termination are heartbreaking.*

RAFFI VO: Caste might be unique to South Asia. But it might be an emblem of something universal. Or certainly something we, in the West, know all about.

When your population is a patchwork of many different groups, a society can either emphasize these differences, or find a way to unify its people.

The U.S. and India are two modern, industrial, liberal democracies, each with a history full of power struggles, and shameful oppression. If the goal is equality, there's still a lot of work to be done in both countries.

But…there are people working on it!

MANU CHOPRA: I want to give the agency to the people in these countries to do what they do best, right, which is understand their communities.

RAFFI VO: That's Manu Chopra. He's the CEO of a tech company called Karya, which is empowering rural and marginalized Indians, and lifting many of them out of poverty.

PRATIK RAJURKAR: Our context in the global South and especially in India, we've got cheap data. We've got really good 5g penetration, and we've got a lot of devices, but at home.

RAFFI VO: Pratik Rajurkar is a former teacher and educational consultant, and is now the co-founder of the startup Polymath AI, which is giving teachers in India more resources, and working to improve the quality of education across the country.

In the 1990s, Western companies began massively offshoring jobs to India, resulting in a boom in call centers, which became kind of a sign of the times for the increasingly globalizing economy. But now, decades later, infrastructure and rapid advancements in technology have made India the source for a huge portion of the labor force, creating what we know as "the data economy."

And yet, the specter of caste cuts against this progressive streak. Adding to that, religious tensions, fueled in part by Prime Minister Modi and his Hindu nationalist party, the BJP, make this massive, complicated society…well, a bit familiar to us Americans.

And look, I know…I started the show by talking about escaping my U.S.-centric perspective, and that's still true. But I can't help but think that there are some useful comparisons to be made. And we'll get into that later.

But for now, let's explore the question: If the South Asian workers who are currently staffing big tech firms in the US have indeed brought caste with them, what consequences has this had, for the workers, but also…on the tech itself?

I'm Raffi Krikorian. And from Emerson Collective, this…is Technically Optimistic.

<mark>THEME MUSIC</mark>

MURALI SHANMUGAVELAN: There are certain particular features that run through caste system across South Asia, not just exclusively in the Hindu religion.

RAFFI VO: For Murali Shanmugavelan, there are many layers to India's caste system.

So for example, endogamy, which is actually marrying within the clan or caste groups.

MURALI SHANMUGAVELAN: Caste also, actually, it does do some economic activity, productivity for certain people. Depending on one's rank, it can hold opportunities.Therefore, it's something very similar to patriarchy, or white privilege. So that's what we have to bear in mind.

RAFFI VO: Some of India's great 20th century reformers disagreed on caste. Gandhi was far more tolerant of the system, whereas B.R. Ambedkar, the Dalit activist who was also the lead author of India's Constitution, felt that the caste system was a fundamental impediment to India's future as a unified society.

MURALI SHANMUGAVELAN: Caste essentially, to use the word of Ambedkar, what it does is it distracts fellowship. That's the thing. There is no humanity in it. There is no goodness about caste. Caste is never a community. Caste is anti-communal. By definition, by its practice.

RAFFI VO: Legally, India abolished the caste system in 1950. But it persists in subtle, and pervasive ways.

MURALI SHANMUGAVELAN: It's present in the ether. It's always there. You just need a proper trigger in a particular environment for it to manifest in a certain way and how it manifests, it all depends on the trigger, social and cultural trigger. However, what's happening at the moment, if I may say, in especially in the tech and data world, the immigrant's identity is often actually mixed up with culture, you know, what they call a multicultural identity. And very often caste is actually packaged as a form of multicultural identity.

SAREETA AMRUTE: Most of, but not all, of the software engineers, from the Indian subcontinent, from South Asia, who come to the U.S. are from dominant caste backgrounds.

RAFFI VO: Again, here's Sareeta Amrute, professor of anthropology.

SAREETA AMRUTE: They have been trained at extremely prestigious science and technology institutes that are also predominantly filled by people from upper caste, dominant caste backgrounds.

For certain privileged populations in India, the United States represents not only a land of economic opportunity, but a land in which they can escape, as it were, from affirmative action measures in India that have tried to actually undo the historical legacies of caste discrimination.

RAFFI VO: The reservation system in India was developed under British rule. This established hiring quotas in the school systems, government, and other aspects of society, for individuals from certain oppressed caste groups, as well as for members of India's indigenous tribes. The exact percentages vary across India's 28 states.

It is an affirmative action system, so it aims to correct the injustices of caste discrimination, not by abolishing the caste system, but by providing targeted assistance to non-dominant groups.

SAREETA AMRUTE: The record of affirmative action, what's called reservations for seats at those universities is, fairly poor. And on top of that, students from non dominant caste backgrounds who attend these schools often face extreme amounts of bullying that sometimes even results in suicide.

So that's already a pressure cooker environment in which, um, dominant caste status is taken as the norm. The belief there among the majority of the students is that they are there because of merit. There is a difficulty or an inability to understand how privilege, historical privilege, fits into their ability to take these positions, and then those are the schools from which the software engineering staff of the big tech firms are drawn.

RAFFI VO: So there are those privileged elite in the dominant castes, and then, there are those at the bottom. And while the Dalit, the so-called "untouchables," might be considered lowest in the caste hierarchy, in reality they're not even considered a caste.

MURALI SHANMUGAVELAN: Very often people use the word Dalit as a caste group Dalit is a self identified political cluster. In fact, it is such a threatening term. Many times Indian Supreme Court has issued guidelines not to use the word Dalit in official circular because it is not a caste name. It is a political assertion. It's actually a sort of a solidarity term that's actually used to create some fraternity or what Ambedkar called Maitri, fellowship, eternal fellowship. That's what it is about. I mean, it is true that Dalit is a cluster of oppressed caste groups and that oppressed caste group may vary from one geography to the other, so therefore it's a kind of a political plank for people to come together and claim for solidarity.

RAFFI VO: In the past few years, as more stories of caste discrimination from tech workers have made the news, the allegations are usually that upper caste individuals in positions of power act in a biased or dehumanizing way toward individuals from an oppressed caste.

And it can be really risky for victims to try and bring this up in the workplace.

SAREETA AMRUTE: Most of the tech workers are on temporary visas, right? The H1-B visa. And that visa is directly tied to employment. So if there is a non dominant caste engineer, worker, who's experiencing, bullying, discrimination, being passed over for promotions, and so on. It's extremely hard for them to speak out because, in fact, they're at risk of not only losing their job, but losing their right of residence in the United States along with it.

RAFFI VO: The H1-B visa is specifically for foreign workers who've been hired by American companies to do certain kinds of specialized work, including as a software engineer. In 2021, the US approved around 400,000 of these visas. And nearly 75% of them went to workers — from India.

People of Indian origin make up about 1% of the American population, but are about 6% of the workforce in Silicon Valley.

So why do the Indian people make up such a relatively large part of the tech workforce?... And does caste identity have anything to do with this?

MURALI SHANMUGAVELAN: People, when they go join the pack, let's say in California or in London or Dublin, when they join the pack, they see the pack and they want to actually mimic the pack. The pack is already dominant caste pack. And also there is a, we have a self stigmatization is happening.

So on one level, we have to understand that is this a sort of a dominant caste influence. And another level you have to understand that there's a lot of everyday livelihood issues and then cultural issues and so on and so forth.

I mean, when I was in California, I was quite surprised by the fact that how each tech companies actively creates a veg only eating space. That was very surprising to me. I went to a couple of tech companies and they were very clearly marked by spaces for vegetarian only. You know, people actually congregate in one corner. And, and also when they have parties, it's mostly vegetarian because to accommodate everybody's interests.

So I'm actually going back to the idea of that how culture actually feeds into tech data space. And that normalizes caste system.

RAFFI VO: So, not only can caste bubble up in very subtle, insidious ways in the American workplace, it can also be challenging for American HR departments to try and deal with these complaints, with no cultural context.

So, advocates argued that, in order for caste discrimination to be properly confronted, we might need to amend anti-discrimination laws to explicitly include caste as a protected category, different from race or religion. And in September of 2023, the California state legislature did just that.

> **CLIP [SB 403 Press Conference (0:00-0:10)] Sen. Aisha Wahab:** *My name's Aisha Wahab, I'm a state senator in the state of California, and it's an honor to see SB 403, our caste discrimination bill, make it out of the state legislature with bipartisan support. . .*

RAFFI VO: And they proposed amending housing, labor, and education laws to make clear that caste discrimination should be illegal. The bill's author was state senator Aisha Wahab.

> **CLIP [SB 403 Press Conference (2:40-2:48; 2:52-2:56)] Wahab:** *I'm proud to stand in solidarity with every person who said they, as a Californian, experienced caste discrimination. We shined a light on a long-hidden form of discrimination thousands of years old.*

RAFFI VO: But…even though it passed the legislature with bipartisan support, it was vetoed, by governor Gavin Newsom. In a statement, he wrote that California already prohibits discrimination based on a number of protected categories, which include religion, national origin, and ancestry. "Because discrimination based on caste is already prohibited under these existing categories," the governor wrote, quote, "this bill is unnecessary."

Still, Sareeta sees the California bill as a major achievement.

SAREETA AMRUTE: SB 403 was truly an amazing effort. So at first I'd like to point out that The bill passed the legislature with an overwhelming majority. So, in some ways, it did represent the will of Californians.

The other huge positive that I think we have to take away from this is in the Cisco case, the person who was experiencing harassment at work was unable to use HR, because caste at that time was not included under, as ancestry.

Now we've gone full circle, where according to Governor Newsom's reasoning, the bill is unnecessary because caste, in fact, *is* included under ancestry. So that's actually very, very important, because what it means is,, in HR Departments of tech firms and housing and employment law writ large, there is now the opportunity to recognize caste as a category of discrimination through ancestry.

RAFFI VO: The bill also faced opposition from fellow South Asians. Some accused supporters of this anti-discrimination bill of encouraging discrimination, either against Indians, or against Hindus.

SAREETA AMRUTE: Now in terms of the opposition, for some, not all, dominant caste individuals who come to the United States, part of what they find appealing about coming to the United States is, in fact, an escape from affirmative action policies in South Asia. And so I think we should understand their opposition in those terms. They actually do oppose affirmative action in many of its guises, especially when it comes to caste, and they would oppose it in South Asia as well as in the United States.

MURALI SHANMUGAVELAN: So here in the UK, we've also been fighting for a very long time and we have an even better documented history of the, you know, the caste in the UK, thanks to the empire and the colonial history and so on and so forth.

Still, we continue to fail. But my take is that the reason that why certain forces do not want this bill to be passed. The reason itself is a very clear indication that the practice exists. So in California, for example, what I see that many people said it's going to affect us, that's in certain people, some dominant caste forces, they said it's going to affect us, it's going to penalize us. How? How? That's, that's the obvious question. The question that we should be, how? If you're going to be practicing something inhuman, you're admitting to that, then it will affect you. Right? Every time when there is a failure, I see that there is a blatant acknowledgement of the existence of caste system by dominant caste. They are so shit scared, they don't want that to be actually recognized as a protected category. Pardon my French.

CLIP [Seattle city council session, Feb. 21, 2023 (1:34:02-1:34:13)] Clerk: *Agenda item 2, council bill 120511, an ordinance related to human rights, including protections against discrimination based on an individual's caste, making technical amendments…*

RAFFI VO: Months before Governor Newsom vetoed SB 403 in California, a caste discrimination bill had actually already become law in America. On February 21st, 2023, Seattle became the first city in the U.S. to explicitly ban caste discrimination.

CLIP [Seattle city council session, Feb. 21, 2023 (1:34:18-1:34:24 ; 2:18:06-2:18:13)]

Chair: *I move to pass council bill 120511. Is there a second?* Two voices: *Second. . . .*

Clerk: *Six in favor, one opposed.*

Chair: *The bill passes and the chair will sign it. Will the clerk please affix my signature to the legislation on my behalf?*

RAFFI VO: This city council audio is courtesy of the Seattle Channel, by the way. Here's the bill's sponsor, councilwoman Kshama Sawant.

CLIP [Seattle city council session, Feb. 21, 2023 (1:36:53-1:37:10)] Kshama Sawant: *This discrimination is very real in Seattle. For the past several weeks, we have heard gut-wrenching stories of oppressed caste people facing serious discrimination and oppression, as well as those who were correctly wary of the consequences of revealing their caste, and remaining closeted.*

RAFFI VO RT: So, in terms of what the future looks like, what can be done about caste discrimination, like in places where there isn't a law, where caste isn't legally protected?

SAREETA AMRUTE: So to give a very clear example, we can think through content moderation. There is very, very little awareness of the kinds of issues around content moderation that are used vis a vis caste. So there are a lot of caste slurs, there are a lot of forms of description — this also applies to religion, to Muslims in particular — that simply go past content moderation tools because either numerically they're not high enough. Or, because, uh, these aren't keywords, terms, systems, modes of speaking, modes of conversation that are even on the radar of a tech firm.

MURALI SHANMUGAVELAN: If you look at the, um, uh, if you look at the, the, the resources invested in content moderation, especially to mitigate casteism or caste related bigotry, it's hardly any. And I've been having conversation with various tech companies and it's very Nice

and dandy to insert the word caste as a protected category in their policy statements, but do nothing about it.

The content moderation is extension of legacy ignorance when it comes to deal with caste related atrocities in the West. And that's, that's gets extended into tech space as well. We're trying to actually crowdsource, annotate, label and filter caste slurs in a different language. I mean, tech companies can afford to do it, but they are not willing to do it. So, but there are, there should be collective movement. And that is not yet happening.

SAREETA AMRUTE: And to me, it's really about this inflection point. So when I think about an anti-caste future, I'm both thinking about how we can do a better job with labeling, annotation, *and* what kinds of projects get green-lit, that's a bit thing, too. But I'm also thinking about the everyday experience of human dignity, um, and how those two things at this point are completely interwoven and inflected with one another. So what I want to see is, for instance, a woman who says something online from her own oppressed caste perspective, I want to make sure that someone isn't going to show up at her door a week later with a threat, with a physical threat. And this is real. It continues to happen. That's both a failure of content moderation. It's also a failure of how we think about something like cybersecurity, where we sort of assume that a state or a corporation are, are capable of protecting all individuals. But we know that's never true because states are in the business of deciding who is a worthy subject and who isn't. And corporations are in the business of creating more and more data that then can be turned into products, which we buy. So there's a kind of disincentive to protect privacy at that level. We need a lot more public thought and effort around making sure that people's information in general, uh, is protected online. And I think a good litmus test of that is if the most vulnerable among us.

I worry that that's the answer that we're going to get more and more. Rather than reaching towards forms of emancipation and solidarity that are in any way universal, we're going to be asked to restrict ourselves to the areas where we feel comfortable.

RAFFI VO: Caste, in Sareeta and Murali's opinion, is subjugation. The reservation system, that affirmative action situation that's been set up in India since 1950, is clearly an attempt at some reparative justice.

But some Indians criticize the reservation system, noting that in attempting to right the wrongs of caste discrimination, quotas actually reinforce the existence of caste categories.

And other scholars and researchers point out that focusing too much on caste can obscure other meaningful inequalities. For example, in India, being a member of an oppressed caste is an indicator of poverty.

But poverty could be addressed as an urgent problem on its own.

MANU CHOPRA: Like, in many ways, the way life breaks your heart is what you act on, you know what I mean? Like when you see the sort of stuff that breaks your heart, you get so motivated to tackle it, right? It feels existential. So to me, poverty feels existential.

RAFFI VO: Manu Chopra is the CEO of Karya, a company that's trying to address both a particular need in the data economy, and the economy of India.

MANU CHOPRA: I grew up in relative poverty, so we grew up in a place called Shakur Basti, which is an informal town settlement, somewhere between a slum and a shanty town. And it was tough, but It was also a childhood of a lot of love and I had amazing, you know, I have amazing parents who cushioned me from some of it.

And when I say that, I also recognize that there is, you know, deep privilege in where I grew up and, and, and who I am, which is I'm an upper caste man, who grew up in Delhi, right, in the national capital in India. And we are a partition family.

RAFFI VO: As a component of India's independence in 1947, the British territory was split, or partitioned, into two dominions: the Hindu-dominant India, and a new Muslim-dominated territory, Pakistan.

MANU CHOPRA: So my grandfather, came to India from Pakistan, and it took my family, you know, three generations, um, to get to me, where, and I've had this life of freedom and abundance and comfort given to me by my parents. And I always felt this sense, uh, growing up of like, like, I wish we had gotten this sooner. And I remember reading this fact that it takes an average low income Indian seven generations of labor to make 1,500 dollars in savings.

Raffi: Seven generations.

MANU CHOPRA: So an average poor person in India has to work for seven generations, or over 200 years, to reach 1,500 dollars in savings.

RAFFI VO: One of Manu's goals with Karya was to find a way to shorten this timeline.

MANU CHOPRA: .Karya's mission is to build pathways out of poverty for rural Indians by connecting them to AI based digital work. Because, again, India is a fascinating country.

So, Thanks to the last 10 years of large scale digitization, you suddenly have hundreds of millions of people who are getting access to devices for the first time. And that means, you know, smartphone prices are like less than 40 cheapest data rates in the world, combined with large scale public infrastructure, which gives every Indian a bank account and a unique ID to transact with, and that means that there are hundreds of millions of people who are coming

online for the first time and thus they need to — and deserve to — speak to the internet and all of these technologies in their languages.

RAFFI VO: But for many Indians, the internet just didn't speak their language.

MANU CHOPRA: We have over 19,000 dialects, right? There is so much linguistic diversity.

RAFFI VO: Hindi is the most common language in India, but it's the first language for less than half of the Indian population. And that population is so large that the next twelve most-common first languages, including Marathi, Punjabi, Tamil and others, have tens of millions of speakers…each.

MANU CHOPRA: The other thing in India is language and culture are so uniquely intersected the way it's not in the West. Like for someone who speaks Tamil, for someone who speaks Marathi, someone who speaks even Hindi, or any of India's languages, that's their culture. Like our workers often tell us they have the same respect for the language as they do for their parents.

So think about all the things that have come together. Smartphones, bank account, internet connection. And the language you're born to speak that you learned by birth is suddenly having a rising economic value, right? And despite all of this, they're among the poorest people in the world. India has 230 million extremely poor people. One in three people who are in global poverty live in India.

We often knock doors in villages to get workers, right? 60 percent of our workers are women. 95 percent come from historically marginalized communities. And most importantly, because we can be really diverse with who we pick in rural India to work with, we can genuinely represent India's phenomenal diversity. There's so much cultural diversity. There's so much religious diversity that we really wanted to capture a lot of that so these AI systems work for everyone. And unfortunately, today the systems might work for me, but they'll not work for somebody else.

RAFFI VO: The basic task of a Karya worker is relatively simple. A sentence arrives on a worker's screen, in their native language, and the worker reads it out loud, generating valuable data that can be used to train large language models and text-to-speech algorithms. And that data is sold on the market for a lot of money.

MANU CHOPRA: Karya, the word itself is Sanskrit for work that gives you dignity. There's this belief that your life has Karya, which is work that gives to you, and Akarya, which is work that takes from you. And the question that we asked when we started Karya was, can rural communities do this work without training, without skilling? Otheir phones, in a manner that's good enough that a for profit company would be willing to pay for it and willing to pay your typical high data wages for it.

RAFFI VO: At the outset of this project, Manu had some doubts about whether or not this would even work.

MANU CHOPRA: I always like telling the story of our first person we ever worked with. Her name is Reshma. We went to the village. This is four hours out of Mumbai, in a tribal community.

And she looked at the smartphone and said," Is the sun god inside this?" Because this is a village with no electricity, and it's a fairly remote village, and I had the intelligence not to say anything. So, but my face was riddled with doubt, and I kid you not, 30 minutes later without any training, just her figuring out the smartphone by herself, never seen a phone before. She came and she's like, why did you think this is hard for me? All I have to do is touch this button on the side. The phone opens up. I know Karya is the K thing, so I click on it and I just have to read out sentences in my mother tongue, that was the task. And in the first week she worked with us, she made 10, 000 rupees, which is over 120 dollars, which is more money than her family had made all of last year.

And that to me was the first, like, signal that this could work. We spent four years doing research studies, and we kept on increasing the complexity of the task. As we increase the complexity of the task, we increase the wages, right? And that meant the wages were so high that the incentive on the ground was to figure it out.

RAFFI VO: And a crucial design feature of Karya's app is that it's not "gamified." Workers aren't racing through as many tasks as they can to get more money, because that's not allowed.

MANU CHOPRA: You don't get paid more if you finish it quicker. You all make the same money, right? You can only work a few hours a day. We cap your usage.

Raffi: There's no incentive to hoard because it's capped.

MANU CHOPRA: Not at all. There's no leaderboard. There is, there's nothing like—it's all equal.

RAFFI VO: Manu sees Karya as a real force for equity in this heavily stratified society. He's providing economic opportunities for rural families, that don't depend on knowing English, or specialized technical skills.

But I also spoke with Pratik Rajurkar, a former teacher and educational consultant, who is trying to achieve something similar, empowering rural families, socially and economically. But he's aiming…even earlier.

PRATIK RAJURKAR: I used to teach in a low income community here in India, in a city called Pune. I taught around, um, 80 middle school students, um, and about 30 high school kids. And post that I worked in the education space with the government here in India, with the state government of a state called Maharashtra for about three years. I was working with Public education systems and how we can improve overall quality. Because public education is by and far the, the largest provider of education in India. And for the past year, year and a half, I've been thinking of and building experiences using generative AI to shift landscapes in education.

RAFFI VO: That tool is called Polymath AI, and Pratik is the co-founder.

Pratik Rajurkar: It's been used. By more than 40,000 teachers across a hundred countries today.

RAFFI VO: Pratik is an alum of the Teach for India program, which, like Teach for America in the US, gives recent college graduates support and resources as they head into the classroom, usually in high-need schools.

But, despite all this support, Pratik says that there was one particular skill that he felt he didn't have. And it's a big one for the day-to-day practice of teaching kids. That's…making lesson plans.

PRATIK RAJURKAR: Imagine somebody who's just finished college, four years of wild party scenes, just entering a classroom with 40 kids. That shift was one of the biggest context switches I've ever had in my life. I was not ready. I was a 22 year old, put inside a classroom given very strong support, propping me up to be a great teacher. I was not able to justify my own self. So as a teacher, I was expected to plan lessons every single day. But at that point I was not good at this. I couldn't plan good lessons. And this is me who's been supported by a lot of people, a lot of managers, content experts by Teach for India, not feeling confident enough in my first six months to go inside a classroom with a very tight lesson plan.

And this was the exact problem that I thought that, hey, with generative AI, Can I help a teacher plan a good lesson? And that's exactly what we tried to figure out as a solution. Can I create an experience where the teacher does not have to type a single prompt? They just have to select a bunch of things on their screen and just let me know what they're going to teach. And that is the product we shipped. It took us almost three to four hours to build. Not a lot of dev time. Without spending even a single cent, that tool has reached more than 110 countries today and is being used by 20-30,000 educators every single day.

Raffi: Holy — wait, something that took you three to four hours to build has sort of had this explosion?

PRATIK RAJURKAR: Yes. And we're not even marketing it, doubling down on it, nothing. Just because it solves a very critical pain point. I don't know how to teach this topic. Can somebody please tell me how it needs to be done? Here's a tool. You don't need prompt engineering. You do not need to talk to some AI bot. This is just a prompt layer on top of GPT 3.5. We're not even using GPT 4.

Raffi: Okay.

PRATIK RAJURKAR: We've got a page and a half long prompt that we've written and what a good lesson should look like so that a large language model can process what a good lesson looks like, what an Indian classroom looks like. You give us this input. I'm going to structure that in the prompt at the backend and give you like a really good lesson plan from this.

RAFFI VO: The fact that this AI tool has been such a hit with teachers across India might lead you to imagine a classroom environment that's pretty tech-forward. But…no.

PRATIK RAJURKAR: I'll first paint the picture of what my classroom looked like.

Kids don't have access to any devices. This is 2015. Even today, close to a decade later, the situation is almost the same. In some classes in India, you'll find, like, a smart TV, but at least in my classroom, there was no tech back in the day. It was just a chalk and a chalkboard. Nothing else. This is exactly the classroom about a hundred million, two hundred million students in India are currently learning in. This is the reality.

I worked with these kids in a low income private school, which is like an affordable school model. Parents pay a token fee, infrastructure in the school is not as good as say the public education system. There are very tiny classrooms. Literally I am teaching in a one bedroom sort of a space, forty kids. Not a lot of space to move around. A lot of times, I'd end up with my clothes getting cuts on them because of them getting stuck in the benches. It's about 20 benches, uh, stacked really close to each other, and about four kids sitting on one bench. So, it's a lot of kids in a tight confined space.

When I paint this picture: this is a public education school. These are, this is your, say, 50th percentile school. In a lot of top tier schools, you obviously have much better facilities, but the exception is not the norm. We've got cheap data. We've got really good 5G penetration and we've got a lot of devices, but at home.

RAFFI VO: No devices in the classroom means that certain experiences we think of as cutting edge here in the US are just not an option for kids in India. Like so-called chat-first experiences, where a student interacts with software, powered by an LLM, and learns by asking and answering questions. That kind of thing is not happening in India. But, according to Pratik, that actually might be a good thing.

PRATIK RAJURKAR: So I'm not a very big fan of chat-first experiences, which is what, say, a ChatGPT is, it is definitely one of the best tools we've got, but there's a big problem. Chat needs me today to know English.

Raffi: Ahh.

PRATIK RAJURKAR: At least at this point. And 89 percent of Indians, although we are like one of the biggest English-speaking countries in the world, still, 89 percent of us can't speak English. So we need localized LLMs, localized models that at least understand the context and the language of the community better.

RAFFI VO: And this, of course, is the kind of thing that Manu Chopra is working on with Karya. But I also found it really interesting the way that Pratik described the community that he taught in. It's not just caste, but linguistic, cultural, and economic divisions all seemed to play a role in shaping what kind of school parents want to send their kids to.

PRATIK RAJURKAR: So, these kids who came from this community in Pune called Varje. Most of them were immigrant kids who come from other parts of India who've moved here or whose parents have moved here in search of a better livelihood. So I taught in an English medium private school, which, which comes at a higher cost than say, a Marathi medium, which is the regional language in the state I live in.

So, there's been historically a notion in India that private school education or English medium school education, where the language of instruction is English, is much better than, say, a regional school education. That's debatable, but that's the context with which a lot of parents operate. So, even though there's a public school right in the vicinity, in the same neighborhood, they'd end up paying for their child's education so that they get a good private school education, and the medium of instruction is English. That's what their expectation is. So, which is why they send kids to these schools.

RAFFI VO RT: Okay. So, I acknowledge that I'm a Westerner, I'm an American, and I don't fully understand the interplay between all these factors but…how does the caste system come into play here?

PRATIK RAJURKAR: I'm trying to figure this out. Um, in my limited interactions in my classroom, the caste system did not come across as a barrier. Uh, but if you look at the macro indicators, a lot of people who decide to move, typically or historically come from oppressed parts of the society, so to say. So these families lived in the most rural parts of the state, did not have as good access to education, because of caste or demographic or geographical reasons. Multiple parameters there.

So I wouldn't look at it just from a caste lens, to be very honest. If a family decides to take advantage of their social mobility and climb up the economic order and economic hierarchy, irrespective of the caste, they would go to some other school, whichever they can afford to at whatever price point that school education, because, like in India, you've got education at every price point.

RAFFI: Got it.

PRATIK RAJURKAR: You can go to a school with zero dollars per month. You can go to a school at 10 dollars a month, your student is getting a private teacher to teach and everything is happening. And then, there are schools which, say, take like a thousand dollars a month. But a lot of these choices are determined by your social class, your economic class.

MANU CHOPRA: The wages we give, I think they're fair.

RAFFI VO: That's Manu Chopra, again. The CEO of Karya.

MANU CHOPRA: We're not overpaying people, right? I mean, see, it's a very simple, basic principle. If someone is doing 90 percent of the work, they should get paid 90 percent of the, of what the client is paying you, right? I strongly believe that like a data worker on the ground is doing 90 percent of the work. Once I get the data, I do have to validate it and that is it.

RAFFI VO: With wealthy, high-paying clients like Microsoft bidding for the data that Karya is collecting, paying people well makes sense. But the real reason that Karya's wages are so high is because Manu doesn't see this work as just employment. And he doesn't see his workers as just employees. In fact, Karya has made data collection into a social program.

MANU CHOPRA: A lot of people tell me that we overpay our workers and, and stuff like that. And my response to that is always, I don't think of Karya as a job. We think of it as wealth redistribution.

Just because I give our workers, so in our case, we give the workers 50 times the industry standard in India and 20 times the Indian minimum wage, I don't get to wash my hands and say I've done my duty. No. Just giving them money is step one, right? You have to really treat them as we're building this pathway out of poverty, right?

So the benchmark in India is $1,500, which is considered the entry to middle class in India, right? It takes an average person, like we discussed at the beginning, seven generations of labor to get to that. A Karya worker today can get there in less than one year if they only work an hour every weekday. Right? That's it. So we're able to use technology to accelerate social mobility down from seven generations to less than a year, right? Which is very exciting. But what

after that? I've made my $1500. I'm at the cusp of middle class. Do we just get to leave our workers? Of course not, right? So we do four years of support for our workers after they make the $1,500, where we support them on skilling, we support them on future career growth opportunities. And we want to make sure that once we have brought someone to middle class, they stay there and improve over the next four years.

RAFFI VO: And beyond that, he also sees the need to correct a pretty destructive norm in the data economy.

MANU CHOPRA: The reason we're in the AI sector is very simple and clear to me, which is this is the quickest way for us to give a lot of money to a lot of amazing people without skilling them.

The world has, like, last report I read, about 5 million data workers. The average data worker takes home 30 cents an hour. The data is worth a lot more than that. A data set is often sold at 100 to 200x that cost. We have to get tech companies to understand that this is happening. I think what we are trying to tell at Karya is there is a bad thing happening, and we have a solution.

RAFFI VO: This bad thing happening? It's not just happening in India. The prospect of paying low wages has attracted Western companies to South Asia for centuries. And to this day, data workers in the Global South have to fight for human rights, even as the global industry they work in is looked to as a progressive leader.

Coming up, we're gonna speak with someone who's used to thinking about these problems on a global scale, and we'll talk about how the future of the data economy has got to promote human agency, rather than suppress it.

That's next…after a short break.

<mark>MIDROLL</mark>

RAFFI VO: Welcome back to Technically Optimistic. I'm Raffi Krikorian. We are broadening our perspective this episode, and leaving the insular viewpoint of the West, and the United States. And we've been focusing on India.

But now…let's zoom out even further.

AMANDEEP SINGH GILL: Technology has to uphold human rights. It has to empower human beings.

RAFFI VO: This is Amandeep Singh Gill. He served in the Indian Foreign Service, and in other high-ranking diplomatic positions, for over thirty years before joining the United Nations.

AMANDEEP SINGH GILL: Tech, it's people, processes, and if tech doesn't empower people, it doesn't work.

RAFFI VO: In 2022, Amandeep was appointed by the UN Secretary-General, António Guterres, to serve as his special Envoy for Technology. And he's the first person to ever have this role.

AMANDEEP SINGH GILL: So, the Secretary General set this office up in 2021, essentially as a senior advisor on technology issues, as a point person within the UN system for different stakeholders, because you know, not everyone has the resources to kind of chase different UN entities and engage with the tech pieces there. So you need a whole of government perspective.

RAFFI: Mm-hmm.

AMANDEEP SINGH GILL: And the UN tech envoy kind of brings in that whole of UN perspective across the sustainable development area, the opportunity side, but also the human rights side, where there are implications for individual rights, fundamental freedoms, democracy, and the peace and security equation, where AI and other technologies have implications for international security, for the geopolitical competition that in fact led to the creation of the UN.

So in some ways the UN is playing catch up with countries. There are two dozen countries who have these point persons on tech issues. But in many other ways, because most of the world still doesn't have this kind of a whole of government perspective on technology, so in many other ways, we are kind of setting an example. We are trying to encourage government capacity building in the developing world, the Global South, the global majority.

RAFFI VO: One example of this was the role that the UN played in coordinating people from academia, industry, and government to work together, and come up with data-driven ways to help India.

AMANDEEP SINGH GILL: We were able to get together people from the private sector, from within the government, from academia, to think about all the implications for a developing country like India. So the, one of the most obvious ones was agriculture and food security.

RAFFI: Hmm.

AMANDEEP SINGH GILL: How could AI improve the productivity of Indian agriculture? The use of ground-based sensors, drones, other kinds of sources of data and how AI could bring those together. So, the industry sector in a developing country is usually beset by inefficiencies, energy usage is excessive. So how could you bring down energy usage? How could you improve, for instance, maintenance of railway stock? You know, you have breakdowns and trains can't run for a while. So could you use AI for predictive maintenance?

RAFFI: Mm-hmm.

AMANDEEP SINGH GILL: Health was another area of application in terms of, you know, immunization, in terms of last mile access to quality healthcare. You don't have specialist in rural areas, could AI help bridge the gap? Aligning this AI opportunity with the digital public infrastructure opportunity was the low-hanging fruit of citizens-oriented services.

RAFFI: Is this a roadmap for other countries? Like, should other countries be following this model, this pattern that India is setting up?

AMANDEEP SINGH GILL: I would say there are some areas where certainly the India example is quite relevant. Financial inclusion, for instance, several hundred million people coming into the financial mainstream on the back of digital public infrastructure. But in many other areas, different countries would have to look at, what are my strengths? And I think starting only with AI is not going to work.

RAFFI: Got it.

AMANDEEP SINGH GILL: The fundamentals of connectivity, digital public infrastructure, where you build up demand for digital services, and then as data begins to flow, you know, having the data governance arrangements: some kind of a normative framework, which allows public, private players, citizens and businesses to share data, to have data flow without the fear of personal data being compromised or misused, then you can start to bring on AI applications.

RAFFI VO RT: Okay, so then I'm curious, what does your office, or like, what does the UN in general do to promote data privacy in the Global South?

AMANDEEP SINGH GILL: I think one very important aspect of this is having law-based frameworks in place for data protection, for ensuring that the choices that citizens have in respect to their data are not just superficial or they are meaningful, they are substantive. So you need frameworks in place. The US has a certain approach in some areas like HIPAA, for instance, in the health area. It's really laid down very strictly. In other areas, it's more laissez-faire. India has just passed the DPDP bill. So I think that is a major chunk of our advocacy.

RAFFI VO: The Digital Personal Data Protection Act, or DPDP, became law in India in August of 2023. It's a national data privacy framework, which is something we're still lacking here in the US as you've heard me say a million times this season.

And it does a number of important things to protect the Indian people, like requiring consent before data can be collected, mandating privacy notices, and even establishing a national data protection board.

But, this is only the first step.

AMANDEEP SINGH GILL: The second aspect is the data empowerment side. Protection alone is not enough. You can buy protection, so, sometimes you know I hear that privacy is for the rich, and so on. And there you run into some businesses that want to cut corners. You know, I'm not saying the entire industry does it, but there are many who cut corners, who want to kind of maintain an information asymmetry with citizens on data.

RAFFI: Mm-hmm.

AMANDEEP SINGH GILL: And then there are governments who would like to, you know, misuse data. They don't want to give citizens meaningful control over their own data. One is this aspect of control or surveillance. The other could be just officials wanting to avoid embarrassment, you know, how incompetent they are or inefficient they are. So we need to lift up this thing. And there are ways today, techno-legal approaches, that you can put into place so that, you know, you have meaningful empowerment over data.

And then I think there is a third aspect I like to mention, which is emergent, and that's the aspect of data commons. There are some areas where market forces are not going to be enough for us to have the gold standard flagship data sets we need to build innovation. We need to encourage the bringing together of data, even if it's in a federated sense, to build those data commons that allow academia and the private sector to innovate. For instance, I'll just give you one example.

RAFFI: Please.

AMANDEEP SINGH GILL: If we are to develop climate change resilient agriculture down the lane, because this is going to impact food growers everywhere, then, you know, farmers in Tunisia, in India, in Southeast Asia, in Colombia, if they can we can somehow pool the data on what are they sowing, when are they sowing, what kind of you know outcomes they are getting, maybe we can build models that allow us to kind of optimize agriculture practices, build new varieties that are climate change resilient, and so on. I mean market is not going to solve for this. You'll need a deliberate effort.

RAFFI: Yeah.

AMANDEEP SINGH GILL: I mean, I'm an optimist and we are talking on your podcast, which is Technically Optimistic. But I think if we don't get this right, then we won't have the trust and we will have challenges we are not equipped to handle.

RAFFI: Okay, then let's flip to the optimistic frame for a second. How do we enable more people to be both empowered with their data, but also be participating in how these technologies are being developed? So we can make sure we're actually solving it to enable human beings to reach their potential, as opposed to simply building these one-sided systems that we're kind of seeing over and over again.

AMANDEEP SINGH GILL: That's a very powerful question. At one level, the answer is about education, about having more people participate in the innovation, digital innovation, which would mean building a cadre of, not just AI specialists, but also these cross-domain specialists who have, either out of their own interest or because there's an institutional effort, they work with data. So, at one level it's about this.

And I think at another level it's about diversity. I mean, this is an important factor in Silicon Valley's success. The sheer diversity of human resource that you find in the Bay Area. People from all over the world. And then I think a third aspect for us to build empowering technology in the long run is connecting those efforts that human resource to the right purpose.

So if our business models are such that we are just trying to, okay, the most money is going to come from synthetic relationships, for instance. That's going to lead us down a certain path with societal externalities, and mental health issues, and other kind of issues. It may make a lot of money for some people, but you know that's, if we hitch ourselves to that purpose, then you know, we are lost.

RAFFI: In your mind, do these things happen in parallel with correcting some of the harms that are already happening due to technology, or do we have to correct the harms first before we can do this? Surveillance mechanisms come to mind immediately, right? Like, we, not only do we have technologies that are surveilling people, but we also have governments that are using digital technologies to surveil people. Do we need to repair those first before we can talk about building more empowering technologies, or can we do them at the same time?

AMANDEEP SINGH GILL: Definitely we have to do them at the same time and with urgency. So, some of the harms that worry me the most include bias and discrimination, communities, citizens, whether it's because of race, religion, or political orientation, or gender getting excluded, getting bypassed, getting left out. So it's often the most vulnerable in the analog world who get harmed in the digital world. So it's the intersectionality of these vulnerabilities. So that worries me a lot.

RAFFI VO: Whether it's caste, poverty, or opportunities in education, we've seen how in India, and for South Asian workers in America, it takes an active effort to ensure that we stop analog harms from being translated into the digital world, as Amandeep put it. And central to how he thinks about the future, is the goal of designing technology with a higher purpose in mind.

AMANDEEP SINGH GILL: But if we can use a larger purpose for technology, then we can have empowering technology. And I'm optimistic about this. I'm not saying this in the sense of, you know, regret that this is not happening. I think we just need more efforts. The digital public infrastructure outcomes that we see with financial inclusion in some parts of the world, they make me optimistic that if we design well, if we govern well, if the public sector is proactive, you

know, we've had decades of underinvestment in the public sector, in public technology, in some of our educational institutions, etc. I think if we can reverse that, then we can make sure that the technology solutions we build are empowering, they are transformative for individuals and societies in a human rights respecting, in a human agency respecting way.

RAFFI VO: All season, we've been talking about the powerlessness that we, the people, can feel these days. Tech companies have dug themselves so deep into our society, it can be difficult to get in touch with our own agency, as human beings and as citizens, to shape the future in a way that respects both progress and human rights.

Think about India and the US. We're two big countries, with diverse, multicultural populations, and both of us have been subject to some democratic backsliding recently. Just this month, Prime Minister Modi and his BJP party were put back in power for a third term. And I think there's an election coming up soon in the US, right?

In both countries, we've got people who have responded to global complexities by insisting that things are actually pretty easy, and who convert confusion and anger into a desire to eliminate certain elements of society — ones they think are responsible for why things got so hard.

On one level, I get it. It's very tempting in trying times to look for silver bullets, whether that's, for example, scapegoating immigrants, or Muslims. But, we also see this in the belief that technology will somehow, by itself, solve huge, societal problems for us. In either case, it's wrongheaded. The problems we face are hard, but, in democratic societies like the US and India, they remain our problems — problems for the people to solve.

And I'm glad we zoomed out to think about India and the Global South, because we got to hear from people who are promoting human agency in technology, and who are raising awareness and spurring action in places where human agency is being stamped out.

It's a good argument for how important it is to seek out your blind spots, to try and make the invisible visible, and, occasionally, take a break from your own perspective.

Next time, on Technically Optimistic…

We're trying to get a glimpse of what the future holds. What do we want to do with all this data we're collecting?

That's next time…on Technically Optimistic.

[CREDITS]

Technically Optimistic is produced by Emerson Collective, with original music by Mattie Safer. Production assistance from Christine Muhlke. Our senior producer is Erikk Geannikis.

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I'm Raffi Krikorian. Thanks for listening. See you next time.