

**Ajinkya Kanitkar**

for sub:version II Editorial Team  
In conversation with  
**Dr. Balaji Parthasarathy**

# CHASING THE RIGHT QUESTIONS

## RESEARCHING TECHNOLOGY INDUCED SUBCULTURES

Balaji Parthasarathy is a Professor at the International Institute of Information Technology Bangalore (IIITB) and co-founder of IIITB's Center for Information Technology and Public Policy. His research interests lie at the intersection of economic geography and economic sociology, focusing on the interplay between technological change, innovation, economic globalization, and social transformation.

As a part of the second issue of sub:version, Ajinkya Kanitkar, Assistant Professor at RVCA and editorial team member, sub:version II interviewed Balaji Parthasarathy on September 10, 2024. The Editorial Team of sub:version thanks Balaji for accepting the invitation and for an equally captivating dialogue on 'chasing the right questions' that every professional working at an intersection of built environment and technology needs to ask.

**Ajinkya Kanitkar:** Let's start with your experience and journey in the profession as an urban practitioner, and from there, we can take it forward.

**Balaji Parthasarathy:** To be honest, I'm not an urban practitioner in the strictest sense. My formal degrees—my master's and PhD—are in city and regional planning. I initially started as an architect. I graduated from IIT Kharagpur after receiving what I consider was excellent training, but I became intrigued by larger urban issues and went on to pursue a master's in urban design at the University of Southern California. It

changed my perspective on cities. I began to see them in terms of social conversations, political contestation, and how the built environment matters beyond just physical design; there's a political economy to urban form that was largely missing in my architecture training. This is not to say that architecture isn't important—it absolutely is—but the questions surrounding urban issues can't be fully addressed within the analytical framework of architecture alone.

I became interested in these questions and decided to pursue a PhD in urban design at the University of California, Berkeley. I took a few courses and started exploring the role of technology in shaping urban form and social relationships. It became evident that we can't think of urban areas in isolation; they have significant connections to their rural hinterlands. For example, you can't consider Bangalore without looking at Hosur, which is just across the border in Tamil Nadu. I began to see how technology influences these processes. Early approaches to technology were overly simplistic. People claimed that with technology, work-from-home arrangements would make cities obsolete, but those predictions seem quite laughable now. In the 1960s and 70s, futurists like Alvin Toffler suggested that cities would become relics of the past. However, this has not been the case. There are tensions between what technology enables and the social reasons why cities continue to exist, even as they are shaped by global forces.

During my time at Berkeley, I was right next to Silicon Valley. The planning program at Berkeley focused not just on physical planning but also on the broader sets of forces shaping that physical form. Decisions made at a macro level, such as those on Wall Street, can affect local realities in profound ways. Being able to examine these social-spatial relationships at multiple scales is crucial, rather than concentrating solely on one aspect for ease of analysis.

**Ajinkya Kanitkar:** Could you elaborate a little bit on the facets of the scales and the proxies for socio-spatial relationship that intrigued you to delve deeper into your research area?

**Balaji Parthasarathy:** What I mean is that you may want to look at a particular aspect of the city, perhaps a neighborhood, or say rag pickers. The question is, what is the nature of the labor market that pushes them to undertake rag picking? What is the nature of the market for waste? Who generates this waste? How is it wasted? What is our social attitude towards waste? e.g. one of the greatest urban design thinkers, Kevin Lynch, wrote a great book on waste. Why is it that certain cities are so clean? Why is it that human beings are subject to the social indignities of handling waste that you and I discard? This happens, and it doesn't necessarily have to do with whether a country is rich or poor. You go to a country like Sri Lanka; it's much cleaner than our cities—embarrassingly cleaner, actually. So it doesn't have to be just a question of wealth. The answers are not always straightforward.

The issue is not if research will necessarily have all the answers, but it's crucial to generate the right kind of questions. I think many of the questions that physical planners are asking are not deep enough—that's the point. They are trained to come up with solutions when they have the right questions; there's no doubt about their capability. But it's about asking, "Are we chasing the wrong question? Is it a mirage that we're pursuing?" How do you frame these questions? That's been my journey. For me, these questions take on particular salience not just in India but in less affluent contexts. Many of these questions have been studied and analyzed more deeply in wealthier contexts, such as Europe, North America, and to some extent, Japan. But in situations like ours, I think we have to do a lot more

work to understand the nature of our problems. There are two or three issues here.

**Ajinkya Kanitkar:** Is that the premise of your essay on India's Silicon Valley? We can see how Bangalore as a city has evolved and thus contributed to the overall development at a larger scale as well over the years, thanks to anchoring important software and technology companies. This kind of economic growth attracts a certain demographic, and the needs and demands of the society evolves with it often undergoing changes. How did you venture into the area of technology and its impacts on the underprivileged or on specific classes of society?

**Balaji Parthasarathy:** Exactly. But I do have to make the connection that starts with my doctoral dissertation. In Bangalore, you see a manifestation of IT in many forms. If you go to cities like Chennai, Hyderabad, or Pune, you see similar trends. The thing is, for an industry that exports roughly \$250 billion, employing about 5 million people is just a drop in the ocean in a country with a large population. These workers are in jobs that connect them with the world economy. They get paid by world standards, although not as much as someone in the U.S. or Europe, because that would lead to the loss of their competitive advantage. But they still earn more than their neighbors with similar skills who work for other sectors.

As a consequence, there is this growing concentration of wealth being funneled into the hands of a relatively small section of the population. What happens then is that there is a demand for certain kinds of housing. Given the limited infrastructure services, bidding up of land rent leading to exorbitant housing prices and rentals, placing demands on basic infrastructure. You also start to see a retreat of the affluent into gated communities, where they express a desire for security. It's not as severe as in countries like South Africa, with high levels of crime, but there's still a significant desire to create boundaries.

In older public sector townships, in Bangalore, you can drive through places like BEL or HAL without anyone stopping you to check your ID. However, in these new gated communities, you see a rise in particular kinds of consumption spaces that mimic global norms. For instance, you go to a shopping

QUESTION? *Are we chasing the wrong*

mall, like UB City. These are considered public spaces, but if you dress a certain way, you might be questioned or turned away.

So, this sorting within the city occurs due to these connections to global markets. Now, regarding the supply side, another aspect of information technology is particularly relevant. Information technology is often referred to in economic literature as a general-purpose technology, meaning its value comes not just from its production but also from its consumption across various domains of economic activity. Think of MRIs in healthcare, or Zoom calls in academia, or ATMs in banking. The economy benefits from information technology not only by producing it but also by consuming it effectively. A useful analogy is that if you only produce it but rely on imports for consumption, it's akin to sending cotton to textile mills abroad and buying back finished garments.

While we've been producing software for years, around 80% of what is produced is sold abroad. Our domestic consumption remains low compared to international standards. The transformative potential of technology is yet to be fully unleashed in our context.

I started getting interested in questions such as how to create solutions for underprivileged populations. We have great technology and brilliant minds in companies like Microsoft and Google, but they often lack the answers. Once you pose the right questions to them, they can figure things out quickly. This is a large portion of what technological development means—understanding the needs of sections of the population that have largely been ignored.

My current work focuses on a perverse application of technology. For example, many of us have used platforms such as Uber. These platforms connect service providers with customers, but we've been documenting the conditions under which delivery workers operate.

While technology allows customers to

order services at the touch of a button, the terms and conditions under which these workers operate are harsh. The NITI Aayog reported that we already have about seven million workers in the gig economy, while we still only have about 5 million in the software industry.

*Value lies not only in production, but in broad-based consumption.*

These gig workers face significant issues, such as lack of minimum wage and insurance, and many work extremely long hours. This calls into question industry leaders who advocate working long hours; many gig workers already do.

When an IT company lays off employees, remember they belong to an elite segment of the workforce and don't necessarily face precarity. But for gig workers, the situation is dire. If they are complained against once or twice in a day, they can be blocked from working on a platform.

This raises significant questions about employment in the country. Translating this into an urban question, we see an increasing presence of delivery workers migrating from various parts of the country to major cities. This leads to specific demands on housing and infrastructure. For instance, many gig workers don't have access to basic facilities, such as bathrooms, while they work long hours delivering services. How do we accommodate these fundamental human needs of this new segment of the workforce? We cannot wish them away because we want their services. These are the kinds of problems I find interesting, not only because they are wicked but because they are essential.

**Ajinkya Kanitkar:** Especially when lucrative offers like 'get it delivered in 25 mins (for example)' systematically attract the consumers on these platforms and we do consume it that way sometimes, probably without giving a second thought to how the delivery partners are affected by it.

**Balaji Parthasarathy:** So, we are complicit in this accomplishment. We have to think about how to incorporate these workers into our urban environments. What does it mean for urban form in these situations where these workers must survive? Their survival depends on us. These are the kinds of questions that I'm really concerned about. Although I am a lapsed architect and urban designer, I think about these questions because of my training. I also consider them at the level of urban form, although I don't necessarily articulate it at that level; However, all these questions have significant implications for how our urban areas are structured.

To give you a sense of this on a global scale, in India today, none of these platforms are making a profit—not one. Why are they surviving? Because global venture capital companies are pouring money into them. Without this influx of capital from abroad, many of these companies would shut down. As it stands, they continue to operate, for the most part, as loss-making entities. In an economy where there is significant underemployment and unemployment, these companies cater to sections of society in large cities that have the disposable income to use those services but also turn a blind eye to how workers are treated.

In our field observations, we've found that entry into large apartment complexes is often challenging. When we interview workers, they mention that getting into these big complexes is hard. You have to call from outside to let them know you've arrived. Once you get in, if it's a tall building, you might find yourself in the residents' lift, which can be problematic; often making them use a separate service lift. Some workers have even faced physical abuse.

A worker who can't read Kannada or English will face issues in such instances. Even in situations where power goes out, for instance, if you're delivering groceries, you may have to climb five or six floors to deliver them because of the delivery time constraint. We see these social norms influencing how workers negotiate the built environment on a daily basis. There are other pressing issues as well. e.g., this year, we've had an unusually warm summer, making it terribly hard for delivery workers. Despite this, they are still expected to deliver. This is compounded by the fact that driving habits are often reckless, and the situation can become even worse during heavy monsoon rains.

It's useful to recognize that the virtual diffusion of technology does not imply that a similar social diffusion takes place. Someone delivering for Zomato may have access to the same models of smartphones, but the way they use that technology varies greatly. The underlying information asymmetries and social inequities are different, and we have to acknowledge that. There's a lot of talk about the article you referred to, but the notion of India as a Silicon Valley completely ignores the specific social conditions underlying technological production. Silicon Valley is not just about producing technology; it's also about the people involved, and ignoring the social relationships creates an empty slogan that is misleading.

In fact, Bangalore and Silicon Valley are not the same. The comparison is problematic, and at a social level, it just doesn't hold up. If we're not asking the right questions and indulge in slogans about promoting technology, we won't go far. We must ask questions about who gets left out and why. How can we include those who are excluded, often in very disadvantageous ways? For instance, many women and people with disabilities are overlooked; not just in India; but in many parts of the world.

It's not about pointing fingers; it's about taking a more analytical perspective. How can we do things better? Can we ask sharper, more

focused questions to help specific segments of the population rather than perpetuating clichés? Research is essential for helping people ask different questions and figure out solutions that work in their specific contexts, rather than applying a one-size-fits-all approach. This is also key to technology. When we exclude certain groups, we assume technology can only take one form. If it doesn't fit someone's needs, they won't accept it.

**Ajinkya Kanitkar:** Often academic research that leads to publication, as knowledge-sharing platforms, often demands certain key phrases that are currently trending. Given your field of research—which simultaneously examines technology, as well as the geographic and socioeconomic components of urban scenarios—what key aspects do you think researchers, including architects, should keep in mind?

**Balaji Parthasarathy:** I wouldn't want to be prescriptive. What's important is to find a fascinating or interesting topic. There's a wonderful phrase that says you have to "scratch an itch," meaning you need to identify something that truly engages you. For instance, five years ago, if you had asked me about this gig economy, I wouldn't have imagined being involved in this research. At that time, I would wonder about what these workers were doing. Gradually, I started reading more in the newspapers, which led me to realize this is a broader question about technology and inclusion. So, I delved deeper into it.

I think it is relevant whatever your professional occupation is. The goal is not to always find answers but to raise good questions—questions that prompt us to understand things in ways we hadn't considered before, to challenge accepted wisdom. You'll find that, while there are things you do well in your field, there are also areas where you might need assistance. This is where interdisciplinary collaboration becomes essential. The world isn't neatly siloed, and problems often require insights from multiple disciplines.

I know many architects who deal with a significant amount of technology in building information management and systems. They are navigating many issues—not just discussing rhythm and proportion learned in their first year. Whichever field you're in, you need to define the boundaries of that field, position yourself at those boundaries, and reach out to adjacent fields. Many interesting problems lie in these gray areas, and it's vital to explore them. My training still helps me think critically about certain issues even if I don't practice architecture anymore. Now, I identify more as a geographer, and that influences the questions I ask, consciously or unconsciously, helping me understand spatial issues.

**Ajinkya Kanitkar:** I also want to ask you about ICT. You mentioned that the value of technology only matters if someone can consume or use it. So, is there a concept of digital democracy, especially regarding policymaking? In your research, do you see a voice for all stakeholders, or at least for the larger population?

**Balaji Parthasarathy:** No, I don't think that's the case at all. There are entrenched entities with significant voices, particularly in digital platforms. We've been involved in some advocacy work, providing input to the Karnataka government on a bill for gig workers, but we also see pushback from the other side. Platforms have their own rights and voices, and while I'm not dismissing that, it's crucial to recognize their technological power and resources. The individuals running these powerful platforms often come from prestigious institutions, making them articulate and well-connected. Given that technology is largely controlled by such entities, it's misguided to assume there's equity in its deployment. However, there are possibilities for two pathways here. First, governments play a critical role in regulating these entities. We've worked with various state governments, like Rajasthan and Karnataka, to shape how this technology is deployed. It's not a binary situation; taking away the technology would mean a loss of livelihood for many. The challenge

is to mediate in a way that ensures opportunities are not denied, but that workers are not treated as slave labor either. This is where academic activism can play a role. We need to back our arguments with evidence and research, rather than resorting to protests without substantial backing.

This also ties back to your earlier point about the kind of research that's needed. It must be evidence-based and actively engage with the complexities of our society. Too often, research conducted in one corner of the country is generalized across the nation, ignoring its heterogeneity. So, I'd say one solution is government regulation. The other is for researchers to empower individuals with technology, helping them transform it into a tool for agency, allowing them to take control of their situations. That gives them a voice.

**Ajinkya Kanitkar:** It really has been an engaging conversation so far. Although ICT has been attributed as a key driver for the development in India lately, and urbanization is predicted to be 70% in near future, I would like to know your idea of 'utopia' for urban centers of the nation if the aforementioned lacunae in the use of technology are overcome.

**Balaji Parthasarathy:** Frankly, I don't even want to talk about technology here. Also, it doesn't matter how rural we are; the urban-rural distinction is administrative. It's not an analytically reasonable concept anymore. The things that matter to us are ones where technology may or may not play a role. For instance, we want to see

a population with a much better life expectancy, that doesn't suffer from certain diseases. We don't want to see 40% of our kids not going to school. We want a reasonably educated population. We often see children playing at construction sites when they should be in school. We need to consider the environment, the air we breathe and the water we drink. These are critical issues. Technology can play a role in all of these, but it is a means to an end, and it requires social or organizational components.

What we've done in terms of ICT integration so far is to lower transaction costs for many of these processes. But whether the transactions themselves are fundamentally fair or unfair is another question. It's like saying you're selling me something and it's outrageously overpriced; but if I'm desperate to buy medicines, I still pay that amount through a payment app. It significantly lowers the transaction cost of transferring money, but the inequity of the transaction remains the same. Let me give you an example from architecture: people talk about Vastu and other traditional concepts which are deeply rooted in an environmental understanding. But applying it blindly, without thinking critically about how it applies in today's urban environments, is sloppy and lazy. You can't apply rules from a bygone era without considering current conditions. It's important not to fall back on formulas without questioning their relevance. But there is a market for the manifestation of traditional forms with little heed to their conceptual basis.

It's about recognizing that when you have technology, you should also consider how it can empower users. Understanding the demand is critical; we need to incorporate that into how technology is deployed. Our expectations of these technologies are shifting, which contributes to the complexity of these problems and to study something that is not static is challenging. The right inquiry can help overcome these challenges with the help of technology.

**Balaji Parthasarathy** joined IIITB in July 2000 as an Assistant Professor, and became a Professor in February 2013. He served as the Institute's first Dean (Faculty) from January 2014 until February 2017. In 2012, he also co-founded IIITB's Center for Information Technology and Public Policy. His intellectual interests are rooted in economic geography and economic sociology, and explore the relationships between technological change and innovation, economic globalization, and social transformation. Within this broad focus, his work follows two threads. One thread examines the impacts of public policies and firm strategies on the social and spatial organization of production in the ICT (information and communications technology) industry. Another thread deals with ICTs for Development or ICTD. Here, his interests lie in understanding how ICTs are deployed in various domains of activity to transform social relationships, especially in underprivileged contexts.

**Ajinkya Kanitkar** is an architect, urban planner and academic engaged in research on climate change and community, infrastructure and creative-cultural economy.

**Ajinkya Kanitkar:** You made two wonderful points: first, there are professionals who understand the market, not necessarily the subject; and second, the challenges at grass-root levels. The saying goes, "there's a sucker born every minute." You can find a market for anything, even dubious therapies during the pandemic. How does research, not just in academia but practice contribute to overcome these challenges?

**Balaji Parthasarathy:** Yes, and at the grassroots level, the disparities in education and finance limit the abilities of the end users. If you consider the government and the policy perspective, urban practitioners or architects face setbacks from what they want versus what the actual development of the built environment can achieve. There are always going to be challenges. This is where research matters. We need to see how we can accommodate various perspectives. For instance, we did a study on innovation in low-income communities in Bihar, where residents didn't trust doctors and instead relied on quacks. A program funded by the Gates Foundation incorporated these quacks into the healthcare system. They were trained to perform basic tests like height and weight measurements. Once they reached a certain threshold, they were given a camera to connect with doctors at district or state headquarters. These quacks served as a trusted social interface for the community. This approach led to significant improvements in basic healthcare indicators.