A Collection of Expert Q&A Sessions:
Alfred Mayaki interviews Prof. Daniel E. Armanios of Oxford University (24/04/2023)

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Foreword by Alfred Mayaki

A central element to the interview with Prof. Armanios will be user participatory design as a key factor to the objective of spatial justice within the scope of urban development in city centres. Prof. Armanios' recent work in academia surrounds the subject of new urban developments in the US and its correlation to startup venture capital, but as a newly inducted Professor of Programme Management at SBS in Oxford, I felt it was only right to hit him with a few interesting heavyweight punches in the form of questions.

We did attempt to maintain a steady approach and we urge everyone to look retrospectively into the Latitude Architects' 21 St. George's Road hotel development in London (which is located near London Bridge in Southwark - a stone's throw away from my local community). This will be a theme of the discussion. The planning meetings for the development will also be on Southwark Council's #YouTube this coming week (18th - 24th) if you would like to form an opinion on urban development processes. It's a real-world example we use to enlighten the exchanges we have in the Q&A.

As mentioned, the interview is on the contribution of accountability as a facet of participatory design leading up to spatial justice issues - but the background to this is very interesting. I reached out to Prof. Armanios last month, after a Councillor Soanes of the Peckham Ward was literally muted and ignored during the final motion that was passed in last week's planning meeting for the new St. George's Road hotel. Councillor Soanes happened to be the only Black female Councillor on the panel. I think we all owe it to ourselves to be educated more on the subject of inequalities. My interest is essentially due to my father who spent almost the entirety of his working career developing new hotels with funding from the likes of the The World Bank and IFC - International Finance Corporation to build urban infrastructure in our country precisely in the exact scenario that the London Bridge development is being proposed in (with hostile and contested stakeholder interests), albeit in a separate cultural context.

Prof. Armanios' responses will not only enlighten us as academic researchers but also as citizens in our own right. The interview will be made available after the upcoming planning committee meetings in Southwark, on or before the 24th of April 2023.

Here is the transcript of the full interview:

1. **Welcome Prof. Armanios, it would be amazing if you could begin the Q&A by introducing your role at Saïd Business School at the University of Oxford, your choice to pursue a career as an academic and of course the premise that underpins your research interests.**

Prof. Armanios' Response:

I am glad to be a part of this discussion with you, Alfred. I think the best way to understand my work is that it is civil engineering meets sociology. More specifically, I study how organizations coordinate to build, manage, and maintain infrastructure to enhance innovation, entrepreneurship, and sustainability. My original work focused on scientific infrastructure. These are innovation systems that comprise government agencies, universities, research parks, and academies of sciences that coordinate to help commercialize scientific breakthroughs. My work there explores the different roles that government agencies play in innovation systems in both the U.S. and China and how these roles improve entrepreneurship and access to financial resources *(readers can look here, here, and here for some of my indicative studies there*). I also explore how government agencies in both the U.S. and Japan certify the quality of ventures and their scientific pursuits within these respective innovation systems *(readers can look here, here, and here for some of my indicative studies there*).

I then began to realize that the same coordination challenges that I was seeing in scientific infrastructure were similar to those that I was observing in physical infrastructure. For these systems, my focus is on those public and private organizations that coordinate to manage water, bridge, broadband, electricity, and other civil infrastructure. My work there explores how physical infrastructure still matters in accessing entrepreneurial opportunities in the U.S., and how marginalized communities in the U.S. and India are associated with less access to such vital infrastructure (*readers can look here, here, and here for some of my indicative studies there*). Overall, my work attempts to precisely measure and identify benefits from infrastructure and who can more easily access these systems (or not).

I think the best way to explain how I came to arrive at the Saïd Business School is that it is an atypical school that embraces atypical academics like myself. My entire academic career has straddled between the engineering and the social sciences. My undergraduate degrees were in Mechanical Engineering and Political Science. My Master's degrees were in Management Research and Water Science, Policy, and Management. My Doctorate degree in Management Science and Engineering combined these two sciences together. My first and former academic position was in an engineering school with equally idiosyncratic motivations as Saïd (the Department of Engineering and Public Policy at Carnegie Mellon University). From this, my work and interests evolved and progressed towards advancing social science in the study of engineering systems, and I maintain proficiency across these sciences through a wide-ranging set of collaborations.

Unbeknownst to me, both the engineering and social sciences were pondering the same need for more interactive dialog. Engineering schools were increasingly trying to incorporate the social sciences (i.e., economics, anthropology, management sciences, psychology, sociology, etc.). Business schools were increasingly trying to incorporate the engineering sciences (i.e., industrial engineering, operations research, civil engineering, etc). The University of Oxford's Saïd Business School was one of the earliest to begin this journey in the infrastructure space through its vanguard MSc in Major Programme Management, now approaching its 15th year. What really appealed to me is the programme's desire to enhance synergies between those across the social and engineering sciences who study and manage the large-scale and complex initiatives that are broadly classified as major programmes.

My role is to maintain our leadership position in this space through curriculum and research that informs practitioners how they can manage not just present-day but also future challenges in these programmes. Most (if not all) our global grand challenges will ultimately be executed through major programmes, ranging from those historically in the infrastructure sector to emerging sectors such as space commerce or social welfare. This is an exciting moment of re-envisioning and change in the major programme community, and I hope you and your readership join us in these pursuits.

2. **Thank you for the introduction, Prof. Armanios! Would you be able to explain to our audience what the concepts of trust and accountability are in participatory design and why these concepts are important in practice?**

Prof. Armanios' Response:

Let me begin by sharing how I define trust and accountability for the purposes of this conversation as both these terms can mean different things to different stakeholders. By trust, I mean the degree to which I can take you at your word and can see that you are genuinely considering my interests as you pursue yours. By accountability, I mean the degree to which you are transparently conveying commitments for what you can (and cannot) deliver, monitoring progress along these commitments, and enforcing positive and negative consequences when you meet or do not meet those commitments.

In the context of user participatory design, trust and accountability necessitates consensus across a diverse set of stakeholders, the need to treat each stakeholder's competencies and knowledge base on equal footing, and recognition that circumstances can change and so there is need for iterative processes & feedback, as well as regular reviews. I think the best graphical representation I have seen of this is that from Baruch Fischhoff. He depicts this as a process where there is a set of common milestones with the flexibility to revisit past phases when consensus is found to not be fit for purpose (interested readers can refer here to Figure 3 in that study). I also highly recommend his recent Clarendon Lectures in this regard *(the three lectures can be found here, here, and here*).

I see this applied in user participatory design approaches via two key practices: community benefits agreements and development review processes. To situate the audience as to why I focus on these two key practices, let me explain the contexts that most preoccupy my interests and attention. I found myself often exploring or involved in infrastructure projects that involve developers, and their partners, seeking to propose and deliver projects within a local community of interest. To do this effectively, you first need to establish trust. I see community benefits agreements (CBA) as an important way for doing so, especially amongst stakeholders who have had little prior interactions or a history of tense relations. Essentially, the overall intention is to get the local community to reach a consensus both amongst themselves (local communities

are diverse after all!) and with prospective developers & partners as to what they want any development in their community to achieve. The most effective ones do not just abstractly convey the goals and aims but also tie them to metrics that all agree are achievable, or a clear procedure by which to arrive at such metrics for each project or project component. For example, an abstract goal could be to increase employment opportunities for the local workforce. A more specific instantiation of that goal could be to increase opportunities by X%, in ABC sectors, and/or over XYZ years. In this manner, all stakeholders can have transparent and honest dialog as to the needs and around what is possible to achieve. With clear objectives and measures, progress towards these CBAs can be more clearly assessed. When unmet, stakeholders and communities can collectively decide whether metrics must change or whether consequences should be meted out to the violating parties.

Given the need to monitor and enforce CBAs, trust cannot function without accountability. A standard process and set of procedures are needed to ensure all projects and project milestones are systematically and consistently evaluated in relation a CBA. Such processes and procedures are often called development review processes (DRP). These involve several parts. First, DRPs involve representatives from all the major local community organizations. Second, project proposers must send a deliverable in advance and in a standard format that is readable to representatives and communities, so they can clearly analyse how well the proposal aligns with the CBA. Third, they often involve an open, deliberative and participative process, such as a town hall, where the community can hear updates and presentations around project proposals and can convey their own opinions at an adequately early stage to inform revisions and decisions to such proposals. I wrote about these needs in a recent op-ed in Fortune, whereby I highlight the community benefits agreement and development review process that inform projects in the City of Pittsburgh's Hill District, which is the largest Black community in the city. For full disclosure, I am on the board of the organization that is a central player in these initiatives – the Hill District Community Development Corporation. Thus, I do not bring these up as exemplars but as tangible examples for which communities and developers can explore to gauge whether these are right for them and/or how to tailor such an approach to their own unique social situation and needs.

3. **How would you describe the pressing connection between participatory design in infrastructure and the accountability of urban planning processes within local community settings?**

Prof. Armanios' Response:

I think this is pressing in several ways, and hence why I think CBAs and DRPs are even more crucial to carefully craft and implement in such instances. First, infrastructure takes a long time to build – sometimes a decade or more (see HS2 as an example). This means that often the world in which you planned the project is very different from the world that will eventually receive the project once completed. In prior work, we note that infrastructure is increasingly likely to be an "institutional relic" where even after it is built, it often lasts well beyond the initial assumptions and intent that drove its construction. Thus, having robust, but most importantly iterative, DRPs are crucial to ensure communities and developers can adapt to changing circumstances that will inevitably arise given the long duration of these projects.

Second, there is a tension that is increasingly acute in infrastructure, especially for developers managing these projects. On the one hand, project managers are assessed on time, quality, and cost of the project (what is colloquially known as the "iron triangle" of project management). However, governments and communities are increasingly demanding the benefits and impacts of these projects are evaluated and met. These are not fully in the control of such developers. This is why CBAs and DRPs are so important to establish clear measures and metrics to help developers recognize when things are going well and when things are beginning to go off the rails. These are even better if there is robust discussion on intermediate metrics that can be measured as the project is being constructed rather than after completion, so there is greater opportunity for corrective action. For instance, let's say a key benefit of a project is reduced time to work or reduced traffic. One can use simulations and other technologies to get a sense of this even prior to completion. For more complicated and indirect measures such as employment opportunities, perhaps training opportunities as the project is being delivered or even gauging whether the project will increase local community intention to look for novel work can serve as useful intermediate measures.

Finally, these CBAs and DRPs need active and steadfast enforcement from city government officials. This is very difficult and requires resilient and courageous leadership as this will sometimes necessitate

terminating projects not in compliance and doing so early enough to prevent lock-in and escalations of commitment. This is enormously difficult as many community organizations, developers, and other stakeholders will exert enormous pressure on officials given often singular focus on a project's potential economic benefits. Thus, having a clear and transparent approach by which to show the trade-offs between economic, social, and environmental benefits that inform such decisions and/or uncover pathways for corrective action amidst such competing objectives is vital. This is where advances in multi-objective or multi-criteria decision making can be quite useful (for the interested reader, here, here, and here provides some useful starting points for exploration).

4. **Would you agree that well-designed user participatory creates amicable outcomes between professional actors and working-class communities when exploring the development of cultural assets in working-class areas?**

Prof. Armanios' Response:

Yes, and while difficult to achieve, cultural assets have a unique advantage in comparison to other infrastructure. Generally speaking, infrastructure is like a referee in a sporting match. When no calls are blown, no one pays attention to him/her/them. However, once a call is blown, everyone pays attention and often complains, but by then, it is too late – the call was made. Infrastructure is so taken-for-granted that we often only pay attention to it once it fails, and by then, corrective action is too late. Cultural assets often have historical or even personal significance. They may be the first of its kind, an especially remarkable feat of engineering, or even have more personal sentiment attached to them (i.e., I remember attending a performance by my favourite musician at that theatre when I was a kid). This increases salience, which motivates and helps communities be on the lookout for any issues earlier. In fact in a prior study, we found that infrastructure availability and access was inversely correlated with more marginalized communities. However, if the infrastructure was registered as an Nationally Registered Historic Place (a route for formalizing cultural significance in the U.S), those inequities drastically reduced. Thus, starting with cultural assets to build robust CBAs and DRPs could be an interesting first step to help communities start building awareness towards the infrastructure around them and its importance in their daily lives.

Now what does this mean for spatial justice? If we connect these two sets of studies together (i.e., infrastructure is associated with less marginalized communities and infrastructure increases access to entrepreneurial opportunities), then the concern is marginalized communities may have greater barriers to accessing advancement opportunities due to the very infrastructure around them. The implication then is to ensure more equitable access to resources, we need to spend more time understanding and classifying different configurations of infrastructure. We are working on studies that are trying to begin that process. For instance, if you have roads that are wider reaching and connect you more with other communities (i.e., your community is more central to a city's transportation network), perhaps you find it easier to more quickly access a more diverse sets of resources. However, if you live in an area with densely packed streets, perhaps you have a more accurate sense of local problems and can act more quickly on opportunities to address them. We are also trying to see if we can use skews in infrastructure to detect and correct bias more quickly and in the moment. In essence, can we treat infrastructure as a social "sensor" for bias and inequity, so we can more quickly engage in more impactful and corrective action? We have been testing that using broadband location and whether that could help us diagnose vulnerability amidst the COVID-19 pandemic. In essence, this set of work tries to take infrastructure less for granted, and in so doing, think more upstream about economic opportunity and the specific configurations of street, bridge, broadband, and other civil infrastructure that facilitates or obstructs access therein.

5. **What key factors would you say separate the challenges associated with spatial justice from other themes that surround infrastructure?**

Prof. Armanios' Response:

I think the key distinguishing factor is precisely this notion of ***physical*** space, separate from social space. What I see spatial justice uniquely advancing is the degree to which my physical closeness or distance to resources affect my access to opportunities. Project finance and investment is conceived and measured at the level of a project and that involves organizations that are socially proximate (i.e., they work together on the same project) but not necessarily physically proximate. These organizations could be physically next to each other or miles, even oceans, apart. In short, project-based metrics focus more on the project network

and the social linkages therein. Implicitly then, the issues of access from a project-based perspective are more focused on social exclusion and less so on physical exclusion. I think those focused on spatial justice are therefore trying to make the case that physical distance matters just as much as social distance.

This presents some very difficult challenges for which we do not yet have adequate consensus. For instance, let's say we find a bridge construction will inequitably harm one particular group. What is the metric or set of metrics by which we assess harm? How far away to we have to go from the infrastructure location to make such an evaluation – a few metres, a few kilometres? In a recent comment in response to a call from the U.S. Department of Transportation, we tried to make the case that this is such a pressing issue that their Office of Civil Rights needs to establish a standard-setting body of developers, community activists, researchers, policymakers, and other stakeholders to issue better regulatory guidance around such issues.

Additionally, exploring the interactions between spatial justice and project-based metrics would be tremendously impactful. For instance, are my project networks, or social networks more generally, influenced by my physical transportation networks and, if so, how? This will require new thinking and new methods to explore where the social and physical complement or substitute for each other.

6. **Are there any words of advice you would like to share to our readers who may be interested in capacity building or who may be interested in engaging more practically with the University of Oxford on this topic?**

Prof. Armanios' Response:

I would say try to find diverse partners with the long-term mindset and patience needed to do this important work. This is not easy given our pressing infrastructure and economic demands, but the likelihood of a more sustainable solution increases when stakeholders give themselves the space (and grace) to do so. You also want those who will challenge your assumptions because the earlier you can detect problems, the greater runway you have for corrective action. Finally, try to develop approaches and tools by which to empower city officials in their enforcement role as this requires courageous leadership in the face of ever-increasing pressure to deliver benefits, especially economic returns.

Our school is always looking to continue to cultivate and build unique capability and capacity in this space through novel partnerships. If interested in this or in anything you have seen here, please do not hesitate to contact me at daniel.armanios@sbs.ox.ac.uk.

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