China Made

Infrastructural Thinking in a Chinese Register

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The brief essays in this collection emerged out of a 2018 workshop hosted by the China Made project—a collaboration between the University of Colorado’s Center for Asian Studies and the Hong Kong Institute for Humanities and Social Sciences funded by the Henry Luce Foundation. We sought to explore what we might learn when we look more closely at China as the world’s ‘paradigmatic infrastructure state’ (Bach 2016). Rather than prepare formal papers, workshop participants were asked to write brief thought pieces exploring how they ‘think infrastructurally’ in, as well as beyond, China. This collection features a selection of those pieces as an initial foray into the broader question underlying the China Made project: how do we conceive of ‘infrastructure’ in a Chinese register? Or, to put it another way, how might we extend the so-called ‘infrastructure turn’ in the social sciences to the China studies field? We begin to respond to this question by affirming that infrastructure be understood as both an object of analysis, as well as an analytical lens for understanding China. In this brief introduction, I explore this kind of ‘infrastructural thinking’ and provide an overview of the multiple versions of it offered in the essays.

We might begin by observing the timely convergence of, on the one hand, a turn toward infrastructure as a medium of social analysis in the Western academy and, on the other hand, a turn toward infrastructure as a development model among policymakers in China. The infrastructural focus of China’s development has, in fact, inspired a new round of ‘China-as-sleeping-dragon’ narratives: no other state spends more of its GDP on infrastructure construction, no other state pours more

concrete, no other state wants to blanket all of Eurasia (and beyond!) with a shiny new web of railways, pipelines, highways, ports, power plants, and cement factories. The China Made project was conceived to address two issues that become apparent when considering this spectacle of infrastructure that animates what is increasingly being called the ‘China Model’ of development.

First, there is very little discussion of infrastructure itself. Instead, what has captivated the academic and policy communities, along with the broader public, has been the mind-blowing scale of China’s infrastructure push, and what it means for the world. Conversations tend to be dominated by China’s emergence as the world’s new superpower of concrete, by its mega-bridges, mega-dams, mega-ports, and by its signature foreign policy gift to world connectivity: the Belt and Road Initiative (BRI). While the BRI is indeed a stunning development for a country that still claims an identity as part of the Third World, it tends to suck all the oxygen out of the room when conversation turns toward Chinese infrastructure development. The China Made project was conceived to focus instead on a finer grained analysis of China’s infrastructures themselves, to consider the infrastructures—rather than nation-states—as the units of analysis, and to take a more cultural, social, and techno-political lens to understanding the local ramifications of infrastructure as an instrument of development and modernisation.

Second, discussions of the ‘China Model’ of development pay surprisingly little attention to what has been happening *within* China over the past several decades. Much of the excitement about China’s newly aggressive foreign presence tends to assume 2013 as year

zero, when President Xi Jinping announced the idea of a New Silk Road Economic Belt during his visit to Nazarbayev University in Kazakhstan. Yet China's infrastructural model of export development has deep roots in state socialism, and in the mechanisms within the Communist Party that govern both personnel and policy. The political economy of the Chinese state creates what might be described as a kind of infrastructure production machine. These domestic and historic roots, of which the BRI is but the latest manifestation, receive less attention when discussion turns to the China Model of development now being touted in much of Southeast Asia, Africa, and other parts of the world. The China Made project was conceived to return our attention to the legacies of state socialism and to the particular workings of infrastructural development within China in order to gain a more detailed perspective on this newly aggressive outward posture.

What Is Infrastructure and Why Is It Useful to Think with?

We might initially view infrastructure as matter that enables the movement of other matter. Expanding on this, Brian Larkin (2008, 5–6) provides a number of useful definitions: 'The material forms that allow for exchange over space, creating the channels that connect urban places in wider regional, national, and transnational networks'; 'technical systems of transport, telecommunications, urban planning, energy, and water that create the skeleton of urban life'; or, 'the institutionalized networks that facilitate the flow of goods in a wider cultural as well as physical sense.' He sums up these definitions with this: infrastructure is the 'totality of both technical and cultural systems that create institutionalized structures whereby goods of all sorts circulate, connecting and binding people into collectivities.'

While the technical dimensions of infrastructures draw our focus toward their material qualities, infrastructures also involve powerful imaginaries: aspirations of a more modern, more perfect future, where we might escape (largely through technology) the constraints of the present. As Lam tells us in his essay in this issue, the imagination is part of the infrastructure. Built into our interaction with infrastructure, then, are spatial and temporal dimensions, both of which can be rendered in highly ideological ways. China has long used infrastructure to structure and restructure national and regional identities; and to buttress socialist ideology. Railway construction, for example, proved ideal for building state socialism during the Mao era. Railways were large scale, state funded, and centrally managed. And they tended to create special zones where a different kind of development would occur. As Monson (2009) has shown in her study of China's construction of the TAZARA railway in Tanzania during the 1970s, the infrastructure model of (export) development was around long before Xi Jinping had anything to say about it.

With their centralised nature, large infrastructure projects have lent themselves well to the reproduction of socialist state power in China and elsewhere. But the on-the-ground realities of infrastructure construction also powerfully shape, and are shaped by, the everyday lives of people who come into contact with them. This draws us back to the technical and cultural parts of Larkin's definition; these systems cannot be understood as either 'top-down' statist projects or 'bottom-up' appropriations of these projects, but necessarily entail both of these perspectives.

As an analytical perspective, 'infrastructural thinking' pulls together two broad strands of inquiry. One involves an interest in rethinking the materiality of infrastructure not as an inert or relatively stable basis for dynamic social processes, but rather as unstable assemblages of human and nonhuman agencies (Bennett 2010; Bennett and Joyce 2010; Coole and Frost 2010). Another explores the oftentimes

hidden political (or ‘techno-political’) ‘work’ of infrastructural forms (Amin 2014; Anand 2015; Barry 2013; Easterling 2014; Larkin 2008; Mitchell 2002). Infrastructural thinking thus draws our attention to how social relations are bound up in the physical and technical materialities of our built environments, and to how those materialities constitute social relations in ways that produce unexpected and unintended political outcomes. This has implications for how we can link theory and practice in more productive ways. As Harvey et al. note (2017, 6), ‘a focus on infrastructure can cut across the tensions between surface and depth that mark social theory.’ These tensions are, we believe, precisely what current scholarship on China’s foreign push is challenged to overcome. The study of infrastructure can help link abstract processes and ideas to on-the-ground material conditions in important new ways.

So, what happens when we bring together these strands of inquiry to ‘think with infrastructure’ about the Chinese state and about life within China, where infrastructure construction is now a basic feature of everyday life? To what extent do infrastructures consolidate state power, territoriality, and sovereignty, and to what extent do they undermine these? How do we weigh spectacular infrastructures and megaprojects in relation to prosaic infrastructures of the everyday? How do the material qualities of specific infrastructures—energy, transportation, water, telecommunication, etc.—constitute socio-political relations and formations in China’s development projects? What histories are embedded in contemporary infrastructural forms and materialities? How do socialist infrastructural legacies depart from their colonial counterparts? What sorts of publics or counter-publics are called into being in relation to China’s infrastructure projects? How should we analyse the rise of utopian, green, eco, ‘sponge’, smart, and waste infrastructures?

Infrastructure in a Chinese Register: Four Themes

The essays collected here explore four broad themes of infrastructure thinking in China. These include infrastructural states, spaces, temporalities, and the everyday.

The Infrastructural State

As noted in the essays by Rippa and Zhang, infrastructure development is inseparable from the project of consolidating state power in China. Infrastructure projects have been central to state legitimation (along with state visions of development, modernity, progress, and future prosperity) since well before the founding of the People’s Republic of China, of course, but the socialist party-state organisation was, in particular, fuelled by the technical, fiscal, social, and political requirements of large-scale infrastructure. While much recent attention has been paid to infrastructure as a (geo)political strategy beyond China’s borders, it has also been a fundamental basis of Chinese state governance since the 1950s. One aspect of this is the fact that the career paths of political leaders throughout the country have depended not simply on meeting the economic targets and campaign objectives handed down from Beijing, but by demonstrating significant economic impact for their localities during their appointments. Infrastructural projects have been a go-to means of achieving these ends and securing promotion up the career ladder. China’s state system is thus structured around the construction (and demolition) of infrastructure; the state itself is a sort of infrastructure machine.

This is a somewhat different take on the technopolitics of infrastructure discussed in non-Chinese contexts. In his explanation of technopolitics, Patrick Joyce (2003) argued that liberalism is a mode of politics that functions through invisibility. In such a system,

the government does not overtly intervene in everyday affairs. So liberalism seeks political proxies in technological regimes, such as infrastructure. These achieve political outcomes precisely because they are viewed as apolitical. Brian Larkin (2008, 47) notes that this role of technology was inverted in African colonial regimes, where ‘technology was visibly and constantly foregrounded by both colonizer and colonized as evidence of the separation between European and African.’ Something similar might be said of the Chinese state, where the technopolitics of infrastructure are not hidden or perceived as apolitical but are rather displayed as spectacular statements of state (techno)power. Infrastructure might then be understood as the excess material by-product of the reproduction of state power in China.

The essay by Stevens reminds us that another arena of state infrastructural power lies in the control of ‘big data’ digital infrastructures (see also Byler 2019). Here, we see a somewhat different version of the ‘surveillance capitalism’ described so thoroughly by Zuboff (2019), one where there is seemingly a much closer relationship between digital technology firms (e.g. Tencent, Alibaba) and the state. Yet the extent of ‘state control’ is ambiguous, as the recent debates over the mobile technology giant Huawei’s ties to the Chinese government indicate (Balding and Clarke 2018). What is perhaps more significant than the question of whether or not companies like Huawei operate in collaboration with China’s state security apparatus, is the role of the state in clearing the way for digitally networked and gridded cities that China increasingly builds from scratch. While these new urban zones naturally entail traditional infrastructures—pipes, cables, streets, waste collection systems, etc.—they are more significantly developed as fully surveilled spaces, built for 5G technology as ‘smart’ and ‘eco-cities’. As Jianan Qian recently wrote in *The New York Times*, the ‘China Model’ is not just about building ports and pipelines, but rather a specific kind of surveillance

infrastructure that has reversed the ancient adage of ‘heaven is high and the emperor is far away’ (Qian 2019).

Infrastructure Space

The essays by Bach, Lam, Tang, and Grant explore more deliberately the spatial dimensions of infrastructure in China. Tang draws on a landscape framework to explore the eco-imaginaries of China’s emerging ‘sponge city’ infrastructures, while Bach and Lam explore the socialist genealogy of the special zone and its transformation into a paradigmatic space of China’s market reforms. Grant draws upon a much longer historical perspective to suggest the ‘cosmic infrastructures’ of religious and ritual space that have materialised in traditional Chinese urban forms and built environments. All of them, in different ways, consider how exploring infrastructure space in a Chinese register upends some of our dominant assumptions about the relationship between these spaces and contemporary forces of global capital.

These dominant assumptions tend to underlie the concept of ‘infrastructure space’ as articulated by Keller Easterling in her 2014 book *Extrastatecraft*. For Easterling, such spaces can be found where *de facto* forms of infrastructural governance emerge before they can be officially legislated by the states that house them. ‘As a site of multiple, overlapping, or nested forms of sovereignty,’ she writes, ‘where domestic and transnational jurisdictions collide, infrastructure *space* becomes a medium of what might be called *extrastatecraft*—a portmanteau describing the often undisclosed activities outside of, in addition to, and sometimes even in partnership with statecraft’ (p. 15, emphasis in original). As these spaces have, like the evolution of Shenzhen discussed in Bach’s essay, transformed from processing zones and logistics hubs into aspirational models of the future, infrastructure space has become ‘an operating system for shaping the city’.

In China, however, such spaces say less about the logics of global capitalism than they do about the legacies of the socialist city, and of the state's territorialising power. While the idea of *extrastatecraft* presupposes a state of contingent sovereignty, scholars of China's system of territorial administration see no ambiguity or contingency in Chinese special zones whatsoever (e.g. Cartier 2017). Rather, China's infrastructure spaces are—to continue from the previous theme of infrastructural states—firmly embedded within an administrative hierarchy in which socialist urban planning has played a significant role. Such 'exceptional' spaces have long served as the infrastructures of state-led social transformation.

Bach thus offers the special zone as not simply a spatial expression of neoliberal capitalism, but of the ways socialist urban planning still lurks within much of the infrastructural urbanism we see today both within and beyond China. For Lam, many of these spaces bear the marks of Cold War socialist mobilisations. For Grant, China's new urban developments are entangled with the infrastructural remnants of not only socialist ideals, but Buddhist and Daoist cosmologies as well. And Tang finds that efforts to institute—through urban planning—landscapes as infrastructures for new social orderings, collectivities, and publics often get tripped up in the everyday spatial practices of local governments and real estate developers. In all cases, China's infrastructure spaces compel us to reconsider just what kind of 'operating system' drives these spatial formations.

Temporalities of Infrastructure

Infrastructures age with varying degrees of durability, requiring maintenance and rehabilitation. Or they simply decay, fall into disuse, get buried, get demolished, or just forgotten. All of these temporalities have different social, cultural, and political implications as explored in the essays by

Lam, Rippa, Zhang, and Grant. China's infrastructural development is accompanied by an enormous amount of ruin, rubble, and waste. The material qualities of this waste and rubble are fundamental to understanding the kinds of social and political processes generated by the decay and destruction of infrastructure. Lam reminds us that if infrastructural aspirations are all about more perfect futures, ruins mark the abandonment of those futures. Meanwhile, Rippa discusses how demolition yielded another kind of future, turning the town of Tengchong into a mine of sorts, with residents digging out old pieces of jade hidden in the ruins. Rubble, then, is old material reconfigured and in some cases repurposed. It is also a by-product of the infrastructure machine that is the Chinese state. Sometimes it produces another round of value (as in old pieces of jade), but it inevitably marks the always-suspended state of destruction—construction produced by infrastructural development.

This temporal ambiguity is noted by Lam as well, who finds in infrastructural ruins examples of reuse, rehabilitation, and repackaging. For Grant, the ruins of ancient cosmic infrastructures are also repurposed and enrolled into contemporary urban state-building campaigns (such as 'building civilised cities'). These ruins, then, are not just paved over and forgotten as successive new rounds of infrastructure development render older patterns invisible. Rather, they maintain a certain vibrancy in their (albeit decayed) material persistence. In Zhang's essay, the state's efforts to build infrastructures for a shiny future of efficient and 'green' waste management are thwarted by the everyday practices of waste collection and by the rubbish tossing habits of citizens. The persistent materialities of waste, in other words, have their own temporal dispositions, and these seldom match the future-oriented temporalities of infrastructural planners and designers.

The Everyday

Finally, we find a provocative tension exists between the spectacular infrastructures championed by the state—high-speed rail, new smart cities, long bridges, huge dams, ‘Sky Net’ surveillance systems—and the mundane, everyday encounters with infrastructure that condition people’s lives. Zhang’s essay, in particular, explores this dimension of infrastructure in China, focussing our attention on the embodied nature of infrastructure provision when we bring it down to the scale of the everyday. Rubbish needs to be picked up by *someone*. Similarly, as Stevens also notes in his essay, surveillance cameras need to be monitored by *someone*. The everyday thus brings up the issue of ‘people as infrastructure’ (Simone 2004), of socio-material hybridities, of everyday appropriations of infrastructures for purposes other than what they were designed for, of the ways infrastructure services are deliberately ignored, and of active resistance or sabotage.

It is mostly in our everyday lives that we encounter infrastructure. Everyday practices of getting by, making do, building collectivities and ‘publics’, these are not things infrastructure does for us. Rather, they are things that we do as we engage with infrastructure. Because of the everyday, infrastructures are never purely technical things. But it is also important to recognise that our everyday lives are constantly producing infrastructural alternatives, new innovations and disruptions, that feed back into cycles of infrastructural (re)production. This is perhaps most readily apparent in the ways our behaviours become ‘data’ for the digital algorithms of Google, Facebook, or WeChat (Zuboff 2019). Digital infrastructures are ubiquitous in everyday life for most people in China. How that translates into varying conceptions of ‘privacy’, ‘security’, and civil rights, has quickly become one of the central concerns of everyday encounters with infrastructure in China.

In China, then, the body has become something of an infrastructural prosthesis. Not only does it produce and feed data to huge companies, but it also consumes the services those companies subsequently provide, much of it optimised to match the particular time-space needs of the body. More fundamentally, China’s infrastructure boom has been built quite literally on the backs of a surfeit of bodies, mostly unskilled workers from the countryside (think, for example, of the millions of bodies bearing the weight of China’s express delivery boom, or of all those bodies building all those roads and dams and bridges, for that matter). The labouring body under duress is a basic feature of the infrastructural everyday in China. And, as Stevens also notes in his essay, the digital infrastructures that infuse daily life in China requires enormous amounts of human, bodily labour to build and maintain.

The essays collected here provide only brief snapshots of these themes. They are written in the spirit of suggestion, provocation, and exploration. We hope they provide the basis for an ongoing dialogue on infrastructural thinking and China. ■