Interrogating China's global urban presence

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Published (2021) *Geopolitics*, 1-23. OnlineFirst.

https://doi.org/10.1080/14650045.2021.1901084

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Interrogating China's global urban presence

This paper examines the socio-economic and geopolitical outcomes associated with infrastructure development across multiple scales. Starting from the premise that planetary socio-technical transformations in this vein have distinctly national drivers, we focus on the urban agency of Chinese-led investment. The paper explores how different forms of infrastructural development generated by the Belt and Road Initiative (BRI) affects transformations in the political and material fabric of cities and their host regions. We approach BRI-related infrastructural practice through three interconnected optics – discourse, instruments, and politics – so as to interrogate the articulation of projects linked to the BRI within the material site of the urban. Based on theorisations of infrastructure from an urban perspective and a critical review of literature on the BRI itself, we develop three illustrative case studies at different spatial scales and within different geographic contexts – in Pakistan, Central Europe and the UK. To examine the cases as well as their embeddedness in broader debates on the topic, we use a systematic review methodology relying on a wide variety of sources. We offer comparative and relational perspectives on the manner in which these relatively diverse cases demonstrate China's role as a global urban actor.

Keywords: infrastructure; Belt and Road Initiative; China; Pakistan; Southeast Europe; Manchester.

Introduction

A global 'infrastructural turn' is currently underway in the policies of multilateral institutions and initiatives (Dodson 2009; Turner 2020). The 2008 economic crisis and longer-running disappointments in development policy advocated by the Washington

Consensus have discredited the rejection of comprehensive spatial planning that characterised earlier versions of neoliberalism (Schindler and Kanai 2021). Since 2016, the United Nations has highlighted 'infrastructure' throughout its New Urban Agenda. Similarly, the UN centralises building 'resilient infrastructures' in its Sustainable Development Goal 9, which aims to support economic development and human well-being (United Nations 2015) – language that also speaks to the envisioned centrality of infrastructural transformation in responses to climate change and other planetary threats. The investment requirements of this infrastructural transformation have been similarly framed globally and multilaterally. For example, the World Bank's 'billions to trillions agenda' was launched in concert with a host of international financial institutions so as to mobilise private investment in infrastructure with purportedly positive developmental outcomes (World Bank 2015). Similar initiatives include the setting up of the New Development Bank by the BRICS countries (Brazil, Russia, India, China, and South Africa) and the establishment of the G20 Global Infrastructure hub in 2014.

However, planetary infrastructure-led development has distinctly national drivers. It is significantly shaped by the rise of China and the rollout of major Chinese infrastructural initiatives. At the same time, China itself has witnessed rapid urbanisation, characterised by state-accelerated, infrastructure-driven and debt-financed features (Harvey 2012). Influential global agencies are known to proffer China as a role model for other developing countries to follow because of its rapid improvement in public infrastructure (Dollar 2008). China has also been active in global infrastructure investment: major initiatives include its newly launched Asian Infrastructure Investment Bank (AIIB) and, of central interest to this paper, its hallmark Belt and Road Initiative (BRI). The BRI has propelled Chinese investment in dozens of large-scale infrastructure projects – largely through its state-owned enterprises – across various countries

worldwide. Despite being at a relatively early stage, the BRI has been the subject of a growing body of academic literature (Lampton et al 2020; Mayer and Zhang 2020).

While most research on the BRI has focused on the global or national scale, in this paper we interrogate China's role as an *urban* agent via its infrastructure investment at different spatial scales and geographical sites immanently connected to urban centres. Many BRI projects are transnational in scope, yet it remains unclear how they (1) connect or bypass existing cities, and (2) generate urbanisation in places historically conceived as hinterlands. Thus, while the BRI is a geopolitical and geo-economic undertaking, its territorialisation forces Chinese stakeholders (e.g., state-owned enterprises, banks, and sub-national governments) to engage in complex political, social, and economic issues that shape cities and urbanisation.

We interrogate how Chinese-led infrastructural development affects significant transformations in the political and material fabric of cities and regions across the world. This addresses an anti-urban bias in scholarship on the BRI which limits our understanding of the initiative's true scope, and it contributes to a small but growing body of research that grounds the BRI in 'the urban'. Indeed, Dodson (2017) suggests that other global infrastructure efforts have been in practice similarly rooted in the urban. Wiig and Silver (2019) have called for a new investigation of the BRI's 'Silk Road' urbanism, while Williams, Robinson and Bouzarovski (2020) lay out a programme for generating more nuanced, urban-centric, and geographically rich insights into China's unfolding global investment initiatives. In Apostolopoulou's (2020, 3) investigation of the links between infrastructure-led development, urban transformation, and inequality in China's BRI, she highlights a new form of 'infrastructure-led, authoritarian neoliberal urbanism', emergent in the urban transformation process driven by the BRI.

This paper's investigation of China as an urban agent relates to scholarship focused on the 'return' of large-scale infrastructural planning, which is assuming different forms from its mid-20th century variants informed by spatial Keynesianism (Schindler and Kanai, 2021). However, there is an insufficient understanding of the relationship between the 'nodes' and 'corridors' that constitute the standardised urban expressions of global infrastructure today (see Wiig and Silver 2019), the expansive investment geographies of transnational spatial planning, and the concomitant expression at the local scale (see Ruwanpura et al. 2020). These interrelated research gaps raise questions about the manner in which, for instance, Chinese infrastructure investment strategies take shape within differentiated urban contexts and fields of play, including ones more thoroughly entrenched in neoliberal infrastructural processes, institutions and norms; and enmeshed with private equity and other private finance initiatives.

We interrogate the capacity of China to act as an urban development driver via its Chinese stakeholders (e.g., state-owned enterprises, banks, and sub-national governments) associated with a distinct array of technical and instrumental practices, as well as complex (geo)politics. The paper speaks to the need for research on the differential socio-economic and spatial outcomes linked to China-led infrastructure development across multiple scales. BRI projects within and beyond China, with different purposes, tend to be interpreted via their distinct 'local lenses' (Sidaway et al. 2020, 796). This corresponds to Oliveira et al.'s (2020) call for grounding China's role in the critical consideration of complex local realities. We outline a research agenda to examine how Chinese infrastructural investment (principally via the BRI) in the era of the 'infrastructure turn' is enacted and articulated within urban contexts. Underlying this investigation is an understanding of the 'urban' as a multi-scalar process that

reworks the geographies of social interaction, land use, settlements, circulation, and socio-metabolic organisation – both within and beyond metropolitan boundaries – rather than a static category of space (Brenner and Schmid 2015).

We draw on insights from Dodson (2017, 90), who has argued that 'infrastructure practices can be conceptually understood via three analytical categories – infrastructure discourse, infrastructure instruments, and infrastructure politics'. Looking to these ideas, and expanding upon them via additional consideration of the socio-technical materiality of infrastructures, we develop a framework that examines various instances of infrastructure-led development according to their varying *i)* materiality (the spatial layout of the infrastructure in question; how the project reconfigures relevant material and socio-technical landscapes) and *ii)* governance (what realignments at multiple scales are being effected in the project, and the role of cities; what incentive structures and actors drive the project).

The paper develops three illustrative case studies at different spatial scales and within different geographic contexts, all of which are bound with the BRI while being underpinned by large urban centres: The China-Pakistan Economic Corridor (a multi-functional infrastructure system), Athens-Belgrade-Budapest Corridor (a transnational transport corridor), and Airport City Manchester (an urban-centred node). As per Wiig and Silver's (2019) proposal to interrogate projects within and across scales, these cases were selected because they represent three distinctive infrastructural morphologies; system, corridor and node. As they are in different phases of development and located in varying contexts, the three cases suggest diverse insights into how global infrastructure is reconfiguring the urban and influencing urbanisation. To examine the cases as well as their embeddedness in broader debates on the topic, we adopted a systematic review methodology that has previously been used across a variety of fields

(e.g., Schwarz et al. 2017). Specifically, we relied on an abstract and citation database (Scopus) to source the articles through a structured literature search of papers published between the 1st of January 2013 and the end of July 2020. A total of 479 papers (including articles, conference papers, books, book chapters, reviews, conference reviews) were retrieved in this matter, out of which 134 were selected for interpretive thematic analysis (Clarke and Braun 2014) following an examination of their abstracts.

The paper is divided into five sections. In the first of these, we introduce and discuss the emergence of a renewed interest in notions of infrastructure through the lens of urbanisation, before turning to dominant representations of China's BRI portrayal in the academic literature to date to expand upon the research gaps identified above. We also advance our analytical framework, which is applied to the case studies in the following three sections. Each section offers comparative and relational discussion of the light that these relatively disparate cases shed on China as a global urban actor. Finally, we formulate conclusions and draw out new research agendas.

The infrastructure turn: An urban perspective

Infrastructure is comprised of 'the veins and arteries that make urban space possible, the networks that facilitate the time-space compression of urbanity by shuttling people, goods, water, energy, waste, and information within and among cities' (Warf 2003, 246). They are expressed as the materiality by which cities, regions and nation-states can resort to produce and reconfigure political-economic relationships (Wiig and Silver 2019). Torrance (2009) argues that infrastructure should be envisaged as an essential part of the complicated urban socio-technical system that involves not only technical and physical networks, but can also be a stimulus for engineering multiple complex relationships. Infrastructure becomes a space for excess capital which cannot be

absorbed by the productive sector when there is over accumulation (Harvey 1985). The construction of a city places infrastructure at centre stage, as a site of capital production and expansion, as a place of environmental transformation, and as an essential stimulus for social relations and inequality (Mcfarland and Rutherford 2008). While some scholarship tracks the emergence of urban infrastructure as a key geopolitical site of contestation (Graham 2005; Bouzarovski et al 2015), the material networks of infrastructure are also life-support systems for urban reproduction and consumption (Gandy 2005).

The complicated and close connections between urban patterns and infrastructure development, however, have been underplayed in analyses of urbanisation (Dodson 2009). Rapid urbanisation in recent decades, especially in middle- and lower-income countries, has triggered a huge demand for infrastructure investment (Dodson 2017). Deficits in access to safe electricity, water and sanitation (Bhattacharya et al. 2012) pose substantial infrastructural challenges for governments in the Global South. Even in the Global North, there is a growing socio-technical gap due to a great amount of outdated infrastructure (Maparu and Mazumder 2017). While infrastructure investment has been put forward as a response to this situation (Koksal 2017), it is still debatable whether urbanisation and economic development trigger demand for infrastructure, or if the opposite is the case. Ambitious schemes – such as airports and waterfronts – have often been seen as a strategy for transforming cities and enhancing competitiveness (Swyngedouw et al 2002). Transport infrastructure, with its purpose of providing accessibility to land and activities, has often been pinpointed as one of the key driving factors of urban growth (Aljoufie et al. 2013).

Over the past four decades, China's urbanisation has been fuelled by its massive public investment in infrastructure. This urbanisation process is state-directed,

infrastructure-driven, and debt-financed (Harvey 2012). Yet, China's urban transformation cannot be simply treated as another instance of neoliberal accumulation, but the entanglement of capital, the driving role of the state, and the shifting configuration of Chinese society (Zhou et al. 2019). The state has been keeping hold of urbanisation and connectivity as the anchor of its economic development and sticking to the official ideology that infrastructure development could benefit a majority of the population (Gonzalez-Vicente 2019). A sense of resolution in 'the urban' has become dominant in various state planning and policy discourses (e.g., New-type Urbanisation Plan); 'the urban' has appeared as the most important ideological realm that helps understand and evaluate manners of social issues (Oakes 2019). China's Belt and Road Initiative (BRI) is an extension of these efforts and a result of the saturated domestic consumption of China – quite simply it is difficult to identify China-based infrastructure projects that would meaningfully enhance the circulation of goods or people (Yu and Mitchell 2019). It includes the land-based 'New Silk Road' and the sea-based 21st Century Maritime Silk Road (Bruce-Lockhart 2017). Both of these involve the assemblage of various types of infrastructure via six proposed corridors extending across Asia. Unlike other international actors, China is interpreted as 'forging a state-capitalist alternative' via its state-owned enterprises under the umbrella of BRI (Anguelov 2020, 2). Since some places are integrated with Sino-centric value chains while others are bypassed, it will produce an inherently uneven spatial dynamic that reconfigures the uneven distribution of economic and political powers across cities, regions, and nation-states. While the BRI's objectives are not explicitly urban, China is nevertheless an urban agent, as it mobilises unprecedented investments in infrastructure across space and scale. This is manifested through China's role as a driver and shaper of urbanisation process.

Much of the existing literature on China's BRI has centred on its economic and political incentives, impacts, and affiliated challenges. Broadly speaking, scholarship tends to interpret the BRI as China's geopolitical and geo-economic strategy to expand and promote its influence as a global power. A considerable amount of the literature has deciphered the underpinning motivations of BRI as China's ambition to extend and deepen its geopolitical and economic power in different regions (e.g., Chaisse and Matsushita 2018; Yu 2017). The BRI is also described as the centrepiece of China's new diplomatic strategy to respond to external challenges and promote the internationalisation of the RMB (Cai 2018). Simultaneously, alongside rapid urbanisation and massive infrastructure development in the past decades, the BRI is also understood as a means of rebalancing China's space economy, maintaining domestic demand, absorbing industrial capacity and revive its export sector (Lampton et al. 2020). Finally, scholars have noted that the BRI offers the potential to access to cutting-edge technology, opportunities for standard setting and access to energy resources (Lauridsen 2020).

Another body of scholarship has focused on the ways that countries have responded to the BRI. Some scholars highlight the risk of rising debt for the destination countries (Hurley et al. 2019), as well as corporate corruption and lack of transparency (Himaz 2019). There has also been a significant amount of work has examined different countries' and regions' responses to the establishment and progress of the BRI (e.g., Garlick 2017; Blah 2018; Chung 2018; Dave and Kobayashi 2018). Officially, all five Central Asian countries and Russia have welcomed the BRI (Dave and Kobayashi 2018). In South Asia, while Pakistan has embraced the BRI via the flagship China-Pakistan Economic Corridor, India has been more circumspect (Blah 2018). Wu (2020) has highlighted that India's varying attitudes towards BRI and AIIB are pragmatic as

there is a trade-off between relative economic gains and political concerns. The responses of Pakistan, Maldives, Sri Lanka and Bangladesh to the BRI are labelled as 'passionately enthusiastic, very enthusiastic, welcoming for want of an alternative, and cautiously welcoming' (Chung 2018, 324-325). Even if more advanced economies have responded relatively cautiously, the overall picture has been mixed. Sarsenbayev and Véron (2020), for example, claim that the EU's altitude has not been fully united.

There is also a distinct line of scholarship focusing on the involvement of financing actors and multilateral institutions. The AIIB – China's foremost international and multilateral financial institution – has been broadly discussed when it comes to the BRI (e.g., Callaghan and Hubbard 2016; Cammack 2018). The roles of other relevant institutions such as the Shanghai Cooperation Organisation, New Development Bank, China Development Bank (CDB), and World Bank have also been mentioned in different articles (e.g., Shichor 2018; Gao 2020). But very few of them have systematically examined the activities of the different stakeholders involved in the BRI project with several exceptions. For example, Wang and Yau (2018) find that the BRI has become a catalyst for transnational transport infrastructure projects to gain relevant resources and supports though the progress for different projects is heterogeneous. Attention has also been paid to how the BRI links with development agendas and regional or national strategies. Li and Zhu (2019) argue that the SDGs and BRI share some similarities in their development visions. Other studies have explored the alignment between China's BRI and their own development agendas – e.g. linkages to the African Union's Agenda 2063 at the continental level (Ndzendze and Monyae 2019) and the connection with Saudi Arabia's 2030 vision at the national level (Chen et al. 2018).

Based on the above, we approach infrastructure practice beyond the wider

dynamic of the BRI itself. We examine China's capacity to act as an urban agent via its infrastructure investment associated with a distinct array of technical and instrumental practices, as well as complex (geo)politics across different localities. Our conceptual framing, therefore, focuses on the materiality and governance of different modalities of infrastructure development under the BRI. Of these, the first encapsulates the spatial layout of infrastructural systems, and the socio-technical reconfiguration of urban and regional landscapes. The latter focuses on multi-scalar realignments, as well as the role of incentive structures and affected actors.

An integrated multi-scalar infrastructural system: the China-Pakistan Economic Corridor (CPEC)

Building on its long-term cordial relationship between China and Pakistan since the early 1960s, the CPEC agreement was signed in 2013, when Chinese Prime Minister Li Keqiang visited Pakistan. The CPEC was subsequently branded as a showcase project for the BRI, with Chinese President Xi Jinping visiting Islamabad in April 2015 and agreeing a Chinese investment package of $46 billion until 2030. With the common goal of 'cementing China-Pakistan economic relations, promoting friendly co-operation and establishing the shared destiny of the two countries' (MoDP 2017, 2), the CPEC package includes investment in improved road, rail and pipeline links between the Arabic Sea and China's northwest. In terms of energy, the CPEC projects aim to develop some 17,000 megawatts of electricity generation via coal, wind, solar, and hydropower at the cost of approximately $34 billion (Zhang et al. 2018).

The corridor starts from Gwadar, Pakistan and ends in Kashgar, the western part of China, passing through parts of Sindh, Balochistan, Punjab, Khyber Pakhtunkhwa, and Gilgit-Baltistan to reach the Khunjerab Pass and Xijiang in China. As such, the

CPEC possesses a spatial layout of 'one belt, three axes and several passages' (MoDP 2017, 4). By relying on the construction of an integrated transport system, a set of plans have been made to develop and upgrade highways, railways, ports, aviation, and other relevant infrastructure. The highway network passes Pakistan via its Western, Central, and Eastern routes all the way from Gawadar and Karachi to the Khunjerab Pass; and then reaching Kashgar in Xinjiang, China. In a similar vein, a more widespread system has been planned in the long term to go all the way from Gwadar to China. Associated are nine Special Economic Zones (SEZs) and nodal cities.

Most projects under the CPEC are still under construction. It is therefore difficult to fully evaluate how Chinese investment reconfigures material and socio-technical landscapes in this instance. There is an expectation that the projects will stimulate economic growth, improve connectivity, and mitigate the energy deficit in Pakistan (Ali 2018). The development of this system is backed by the argument that Pakistan requires significant new internal connectivity through the expansion and upgrading of transport systems. The successful implementation of the CPEC projects is estimated to produce growth in Pakistan's GDP (Mehar 2017). Since the announcement of the CPEC, the GDP growth rate has increased from 4.4% in 2013 to 5.8% in 2018 (World Bank 2020). It would promote bilateral trade between Pakistan and China, as well as regional trade (Malik 2018). At least two million new job opportunities are to be created by the CPEC projects by 2030 (e.g., Ali 2018; Malik 2018). A large proportion of investment ($33.79 billion) is distributed to energy projects, so as address a perceived lack of domestic energy supply capacity in Pakistan. It is forecasted that these would generate appropriately 11,100 MW energy to the national grid with the completion of planned projects (The CPEC Portal 2020).

However, there are also concerns regarding the environmental and social

impacts of the CPEC. Energy projects constitute over 60% of its total investment corpus, with 70% planned energy capacity being generated by coal-fired power plants (Oh 2018). These installations can potentially pose significant risks to local protected species, six of which are located within the 10 km buffer of UN-designated protection areas for local wildlife (*ibid.*). Based on a preliminary environmental impact assessment on the Northern Route Road construction activities in Khyber Pakhtunkhwa, air quality, water, and noise have been identified as major challenges (Khwaja et al. 2018). While coal-fired power plants may facilitate energy shortages in Pakistan, the new Chinese-financed plants are estimated to trigger new water demand and ultimately elevated water stress for the country (Alkon et al. 2019). From a social perspective, Zhang et al. (2018) emphasise that different industries in different regions involved in the CPEC may bring about a series of social problems regarding land acquisition, involuntary resettlement, displacement of residents, impacts on labour and women's rights by applying social impact and risk indicators.

In terms of governance realignments – and the role of cities – the CPEC is the first large-scale and cross-sectoral effort to enhance economic ties between Pakistan and China (Wolf 2020). As multi-project development corridor for both countries, it involves different levels of realignment, including regional, national, and project levels. Though the CPEC only includes China and Pakistan, it seems to have already altered geopolitical and geo-economic realignments in South Asia, possibly as a result of the complicated geopolitical and geo-economic conditions in the region and the corridor's alignment in relation to Pakistan's Gilgit-Baltistan region – part of disputed Jammu and Kashmir that are claimed by both Pakistan and India (Deutsche Welle 2020). At the same time, India is concerned about the CPEC as this is perceived as detrimental to its geostrategic ambitions. In the meanwhile, China's strategic influence would be

extended from the South China Sea to the Indian Ocean and the Arabian Sea (Khan et al. 2018). The United Arab Emirates is also worried about the Gwadar competition with Dubai (*ibid.*). Iran's position is more relaxed, intending to enhance land connectivity to landlocked Afghanistan and Central Asia even though it initially perceived Gwadar as a potential threat to Chahbahar (Bilal 2019). As the CPEC ensures easy access to Strait of Hormuz from central Asian countries, these countries become natural members of the CPEC network. Within and beyond the region, a positive spillover has been gradually observed with a wider group of countries (e.g. Russia, Turkey, Iran) who may also be interested in joining this network (Wang and Yau 2018). The initiative may entirely alter the global balance in the region and present a new economic and strategic geography (Cengiz 2018).

Under the CPEC scope, a total of 18 cities have been highlighted as the key nodes in the scheme's long-term plan. Twenty-nine industrial cities will be developed (Cengiz 2018). It is claimed that the CPEC will greatly promote industrialisation and urbanisation in Pakistan (MoDP 2017). Nine SEZs in different areas across Pakistan are proposed as part of the CPEC. They will involve local production accompanied by local raw materials and labour, hence accelerating urbanisation processes (Mirza, Fatima, and Ullah 2019). The project is also expected to relocate Chinese industries to these SEZs, contributing to industrial upgrading, technological transformation, and fast-track urbanisation (Janjua et al. 2017). Node cities have been linked to the application of China's new urbanisation concepts, including the improvement of the transport system and public facilities (MoDP 2017). The CPEC's planned transport network between cities has the potential to accelerate the movement of goods and people, which corresponds with the aims of the New Urban Agenda (MCCP 2015). At the local scale, the development of Gwadar port, for example, involves significant investment in port,

park and city infrastructure by two major state-owned enterprises, as well as smaller projects by sub-national state-owned enterprises (Liu et al. 2020). While the CPEC provides a unique opportunity for Gwadar port to be developed as an international free port (Ali 2018), it remains a risky venture that can be only handled by Chinese Central Government owned enterprises (Liu et al. 2020).

To develop the CPEC projects, a Joint Cooperation Committee (JCC) – co-chaired by Pakistan's Minister of Planning, Development and Reform and the Vice Chairman of the Chinese National Development and Reform Commission – has been established to oversee implementation activities. Numerous meetings have been held and attended by high government officials, entrepreneurs, engineers, different ministries representatives, and experts. All the major decisions relating to the CPEC are finalised by the JCC, which is the top policy maker of all CPEC initiatives. Five working groups were initiated under the JCC at the beginning and tasked to look after various affairs, including planning, energy, transport infrastructure, Gwadar, and industrial parks or SEZs. As the collaboration has deepened, more working groups have been established in charge of security, international cooperation and co-ordination, as well as social and economic development. But decision-making within CPEC has a highly hierarchical and top-down in nature. Conflicts between Punjab and less-developed provinces are emerging with some local leaders claiming to be kept out of decision-making process (Mahmood et al. 2020); as unlike the one-party decision-making in China, there are different wings within the Pakistan Government.

The lack of transparency about the CPEC has hampered the building of political consensus, which is crucial for the smooth implementation of the initiative (Rehman 2019). Nevertheless, different actors are involved in governing and financing sub-projects under the CPEC. They include Chinese state-owned banks (e.g. Export-Import

Bank of China, China Development Bank, CDB) and state-owned enterprises (e.g. China Communications Construction Company Ltd, China Railway), Chinese and Pakistan private enterprises, and multilateral institutions (e.g. AIIB, Asian Development Bank) (Wang and Yau 2018). Established upon the long-term collaboration history between both countries, the implementation of sub-projects is comparatively smooth. A relatively simple partnership mode at the sub-project level, aided by the support from upper-level governments, allows Chinese state-owned banks and enterprises to engage with local stakeholders to promote project progress.

To summarise: the CPEC project is a large-scale package of infrastructure investment in various fields – from energy to transport, and from port cities to SEZs – across different localities in Pakistan. It is expected to stimulate economic development and urbanisation in Pakistan, while restructuring the uneven distribution of economic and political powers across cities and regions in the country. Building upon more direct collaboration modes between Chinese and Pakistan stakeholders, we argue China's promotion and articulation of infrastructure development is a driver for urbanisation in this case.

A transnational transport corridor: the Belgrade-Budapest link

China's presence in Central and Eastern Europe (CEE) is largely implemented through the '17+1' format; originally the '16+1' format and subsequently expanded thanks to the participation of Greece (Kavalski 2019). Unlike the CPEC, China's involvement in the region is relatively recent. Even if the Athens-Belgrade-Budapest corridor is not an official designation, Chinese investment in infrastructure projects within CEE has been constantly increasing. Here, the Budapest-Belgrade railway link stands out as a China-CEE hallmark project under the BRI, prospectively linking the China-run Piraeus port

in Greece with Central Europe (Shepard 2017). A Memorandum of Understanding for reconstructing the Belgrade-Budapest high-speed railway was signed by China, Serbia and Hungary in December 2014 (Dimitrijević 2017). Due to the public tender investigation by the EU in relation to the railway construction through Hungary, the project's implementation initially slowed down (*ibid.*). Once a Chinese state-owned enterprise obtained the majority stake of the Piraeus Port in Greece in 2016, the Chinese Government doubled up on its efforts to influence trade routes between China and the EU (Gotev 2017). The Chinese Government would like to integrate its BRI plan with countries in CEE and even the whole of Europe. As mentioned by Chinese Premier Li Keqiang, 'this [the Belgrade-Budapest rail link] will put in place a corridor between China and Europe' (Euractiv 2014).

The total length of upgrading the Belgrade-Budapest railway is 350 km, with 184 km on the Serbian side and 166 km on the Hungarian side. The Belgrade-Budapest railway link is the first section of the planned China-Europe Land-Sea Express line, which link Piraeus in Greece to Budapest in Hungary going through the territories of North Macedonia and Serbia. The Belgrade-Budapest section will mainly pass Bács-Kiskun County in Hungary and Vojvodina Province in Serbia. Cities located along the line include Kiskőrös (Hungary), Kiskunhalas (Hungary), Subotica (Serbia) and Novi Sad (Serbia). The strategic purpose of upgrading the Belgrade-Budapest railway link is rooted in its link to a larger project aiming to connect Budapest, Belgrade, Skopje and Athens, which is also called the China-Europe Land-Sea Express line (Rencz 2019). With the reconstruction of the railway link, freight time between Budapest and Belgrade would be reduced from eight to three hours (*ibid.*). The upgrading of the Belgrade-Budapest railway link, in concert with other Chinese projects in the region, would also cut down the total transit time of Chinese products to Europe from 30 to 20 days

(Pavlićević 2014).

The project is expected to provide a boost for the economic development of Serbia, Hungary and other countries in the wider region (Dimitrijević 2017). Within the wider context, Hungary would have the opportunity to promote it as the regional hub to connect China and Europe, which may provide a high return on investment (MFATH 2020). Trade between both countries would also be stimulated (Kowalczyk 2018). By calculating a complex multimodal transport network indicator, Gulyás and Kovács (2018) have predicted that the Trans-European network connections and overall accessibility will be enhanced. However, changes in accessibility will be spatially heterogeneous with an average improvement of 13.7% in affected regions of Serbia and an improvement of 2% on average in Hungary (*ibid.*). For Hungary, the link between Budapest and Belgrade is not a priority in terms of either economic and trade relations or tourism improvement (Vörös 2018). Some media outlets view it as a politically-driven initiative rather than a commercial project (Miller 2018). It is difficult to predict other impacts at the current stage because the Serbian side began construction in 2017, and the Hungarian section is expected to start in 2021. The jobs created, residents influenced, financial sustainability, and other relevant issues should be evaluated in the future.

In terms of generating realignments at multiple scales, at a first glance, southeast Europe and the Western Balkans are less attractive due to their limited market size and purchasing power. The region, however, can act as a major transport corridor for China's BRI in connecting the Mediterranean to central Europe (Tonchev 2017). Rogers (2019) argued that China would like to make use of the Belgrade-Budapest railway that is scheduled to belong to the China-Europe Land-Sea Express Line, to redesign Hungary as a bridgehead of Chinese interests in Europe. The project could also act as a

catalyst for European Union (EU) accession of some countries in the region (*ibid.*). At this stage, its wider influence, if any, on EU unity is difficult to predict. But due to the increasing influence of China in countries like Hungary and Poland, it is not surprising that Brussels is concerned about China's growing role in the region (McLaughlin 2018).

As far as incentive structures and actors are concerned, the project has led to two separate bilateral agreements between China, on the one hand, and Hungary and Serbia, on the other. Due to its membership in the EU, Hungary has been tasked with complying with EU regulations. This resulted in an EU investigation at the beginning of the project, and two rounds of public tenders immediately afterwards. It has been announced that loans from the Export-Import Bank of China will finance 85 percent of the cost for the Hungarian section. The China-Serbia co-operation on this project, without restrictions from the EU, is based on the Agreement on Economic and Technical Cooperation in the Area of Infrastructure between two governments signed in August 2009 (MCTIS 2017). It is noteworthy that the EU's earlier investigation of the public tender is a sign of poor public participation and transparency; this is also a key concern in media coverage of the issue. As a whole, the project involves very complicated dynamics of stakeholder engagement, not only because of its trans-national nature, but also owing to Hungary's upper-level relation with the EU and Serbia's collaboration with the Russian company at the project level.

To summarise: this regional-scale project connects two capital cities as well as several node cities in Southeastern Europe. It can and will continue to influence the development of the entire urban system in the region. Due to its limited involvement in the reshaping of material space and socio-technical landscapes, as well as existing and potential barriers posed by the region's complicated politics, we argue that the Chinese investment acts as a catalyst instead of a driver of urbanisation in this instance.

A regional single-country node: Airport City Manchester

The Airport City Manchester project was initiated in 2012. It is a £1 billion undertaking to deliver a 5 million sq. ft. site with offices, advanced manufacturing and logistics facilities, hotels and retail facilities (Airport City Manchester 2018). In 2013, a joint consortium formed by the Manchester Airport Group (MAG), the Greater Manchester Pension Fund, Beijing Construction Engineering Group (BCEGI) and Carillion PLC was established to implement construction and management work. As highlighted by Chinese President Xi Jinping: 'Airport City Manchester is the first project to have materialised since the UK and China countries signed a MoU on infrastructure cooperation in 2011. It is also the first major infrastructure project in the UK with the involvement of a Chinese company in the form of equity investment' (BCEGI, 2020). The project will enhance the 'city's reputation as a major gateway for Asian businesses' (HM Government 2020).

Located ten miles from the centre of Manchester and once a relatively small, regional airport, over the last two decades Manchester Airport has been expanded to become a major international air travel hub. Institutionally, Airport City Manchester mainly comprises Airport City North and Global Logistics. The masterplan for Airport City Manchester north involves land uses of offices, hybrid space, hotels and car parks. Global Logistics is located at the southern end of the airport next to the World Freight Terminal that is already a well-developed international logistics centre (Airport City Manchester 2018). Since the designation of an Enterprise Zone in 2012, approximately 546,000 sq. ft. of space has been refurbished and the total development has been up to 821,000 sq. ft., linked to £47 million investment into infrastructure and development. By taking advantage of the existing geographic location of Manchester Airport, further development is expected to strengthen the role of Manchester as the UK's global

gateway in the North (MAG 2020). To date, Enterprise Way – a new link road – has been completed by contractor BCEGI on time and on budget. There are estimates that the Enterprise Way will promote development across Airport City North, bringing about 11,400 new jobs, 1 million sq ft of offices, 650,000 sq. ft. of advanced manufacturing units, and 2,400 new hotel beds (Airport City Manchester 2020).

It is noteworthy that new digital infrastructure and use of technology are highlighted as key policy principles in official documentation associated with Airport City Manchester. Everyday lives of employees in the zone would be significantly altered once and if these policy directions were to be implemented. In addition, the development emphasises community capability engagement and environmental sustainability, both of which are key objectives mentioned in the SDGs. Whether the project could make a difference at the local scale is still open for further discussion. In a broader sense, the airport will exert a direct impact on the Greater Manchester economy and facilitate the development of adjacent economies – Cheshire, Warrington, and the Northern parts of Wales. Compared to the other two case studies, this project can be regarded as an infrastructural node, while operating at a smaller scale and being rooted in the spatial context of the city itself. Still, the airport is considered as pivotal to the economy to Northern cities and regions in the UK (MAG 2016). As commented by Andrew Cowan, CEO of Manchester Airport: ‘As we edge closer to the 30 million passenger mark, our role as the UK’s global gateway in the North becomes even clearer’ (International Airport Review 2020).

As the first major infrastructure project in the UK involving a Chinese company, the airport is a flagship example of China’s presence in the UK. Even though it is expected to improve collaboration between two countries, the undertaking is unlikely to assume an important capacity in wider realignments. Unlike other Chinese projects of a

similar scale, the Chinese company only possesses 20% of the total investment. There are expectations that it could promote China's presence in other advanced economies with respect to the country's infrastructure construction capabilities. However, the project is not branded as a BRI component in the UK, even if in China, it is mentioned in government-funded media as an important collaboration outcome of BRI and the 'Northern Powerhouse' (CCTV 2020). This may be related to the UK Government's approach that the BRI is a platform for commercial collaboration aimed at proffering opportunities for UK enterprises to initiate infrastructure-related projects, rather than formal forms of collaboration (Steer Davies Gleave 2018).

To summarise: The Airport City project is located in a city-region. Overall, and unlike the other two cases, this project is mainly built upon commercial cooperation. Upon its completion, changes of physical and socio-technical landscapes are expected to happen at the local scale. Manchester city and the wider region, at the current stage of post-industrial development, could make use of the opportunity to enhance city competitiveness and regional economic expansion. Thus, we argue that in this case Chinese infrastructure investment could act to stimulate commercial development for urban growth.

Conclusion

In this study, we examined China's role as an urban agent via its infrastructure investment under the umbrella of BRI. Underpinning our investigation is an understanding of the 'urban' as a multi-scalar process. All three cases investigated in the paper highlight different modalities of infrastructure-driven development. The CPEC case offers insights into the development of a large multi-functional growth conduit underpinned by transport lines, cities, and industrial zones, integrating a variety

of material sites. The Belgrade-Budapest corridor shows the emergence of a regional-scale transport link, mainly built along the planned China-Europe Land-Sea Express line that would eventually link the China-run Piraeus port in Greece with Central Europe. The existence and operation of a node project within a city is illustrated by the Airport City Manchester example, whose infrastructure itself possesses the potential to support economic growth.

The development of all three infrastructure projects reviewed in the paper has been connected to the potential for uneven spatial processes and inequities, as well as socio-political realignments across different cities and regions at multiple scales. The Chinese model of infrastructure investment in countries with a dire need for finance is partly loan-driven, which leads to various concerns regarding the financial sustainability of the CPEC and Belgrade-Budapest corridors in particular. Airport City Manchester represents a different story, with Chinese finance accounting for a relatively minor share of total investment. Yet, the partnerships and decision-making dynamics involved in the three cases are extend beyond the actions of Chinese state-owned companies, which is in line with the findings of other studies (see Wang and Yau 2018). The engagement of Chinese corporations or financiers varies in different degrees depending on an array of the ground level conditions in the hosting countries. It is explicit that the Airport City Manchester has the simplest partnership mode because of the relatively small scale of the project. While the CPEC case is the largest program regarding its spatial scale, the institutions involved are not as that complex as those involved in the Belgrade-Budapest link. How to build trans-local and national partnerships, as well as transparent decision-making mechanisms can thus be seen as crucial for the success of infrastructure-driven development.

In light of the overall progress and characteristics of the three cases, we would

argue that a single model of urban development arising in relation to Chinese infrastructure investment does not exist. China's role as an urban agent is dynamic, exerted by relevant Chinese stakeholders (particularly its state-owned enterprises and state-supported financiers), reshaped by its varying entanglement with local forces, and articulated by its varying influence on material landscape and socio-political restructuring across different localities. The BRI is a driver for urbanisation in the CPEC case, a potential catalyst for urban development in the Belgrade-Budapest corridor, and a platform to stimulate commercial development for city growth in the project of Airport City Manchester. In the era of an 'infrastructure turn' amongst policymakers around the world, China's urban presence continues to further globalisation through its massive investment under the ambitious BRI project. What is more, China's infrastructure drive, the extended efforts of its domestic ideology of 'the urban' as the solution, will continue to play a part in promoting urbanisation under a wide range of geographic contexts and spatial scales.

Although there has been a discursive commitment towards pursuing green development with partnering BRI countries in various policy discourses by the Chinese government, there is a tendency to overlook environmental degradation in the implementation dimension (Ruwanpura et al. 2020). Another aspect that has received limited attention are the unintended consequences of development projects, especially for marginalised groups (*ibid.*). This calls for a more nuanced understanding of sustainable development, encompassing discursive, material, and practical elements at multiple scales (Bouzarovski and Konieczny 2010; Wiig and Silver 2019. By interpreting Chinese-led infrastructure development in such terms, and via the lens of discourses, instruments and politics, we would outline three main research directions for future research: (1) a more nuanced understanding of the relationship between urban

and regional infrastructure investment, on the one hand, and emerging multi-scalar geographical inequalities, on the other; (2) a wider range of case studies on the roles of different types of infrastructure in shaping urbanisation dynamics; and (3) an expanded breadth and depth of inquiry aimed at tracing the ability of China's urban infrastructure investment to mobilise wider geopolitical and economic relations.

Acknowledgements: The work was funded by a University of Manchester Research Institute Pump Priming Award. We are grateful to the editor and three reviewers for their thorough and constructive feedback.

Notes:

[1] Given that a range of terms have been used to represent the BRI in different academic, media and official publications, we used the following search rule: ("Belt and Road" OR "One Belt One Road" OR "One Belt" OR "One Road" OR "OBOR" OR "BRI" OR "New Silk Route" OR "New Silk Road") AND ("infrastructure"). These were placed in the search criterion to scrutinize titles, abstracts, and keywords of different publications in the Scopus database.

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