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Perspectives on the 21st Century Urban University from Singapore – A viewpoint forum

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PERSPECTIVES ON THE 21ST CENTURY URBAN UNIVERSITY FROM SINGAPORE – *A VIEWPOINT FORUM*[1]

Abstract: In this *Cities* viewpoint forum, we argue that there is a need to rethink U.S./U.K.-centric approaches to the urban university in policy and practice. Gathering three critical commentaries by practitioners from within the Singaporean higher education system, the forum responds to the challenges of: (1) broadened expectation placed on higher education institutions; (2) the pressures and possibilities of global urbanization; and (3) the provocation to theorize the urban, and thus the urban university, from beyond the 'Global North'. Following an introduction detailing the history and relevance of the Singaporean context, the three viewpoints seek to illustrate the various dimensions of university urbanism in the 'Lion City'. Each address what the idea of being an urban university means, and how it is operationalized in Singapore. Key policy and conceptual insights illuminate a higher education regime negotiating the tensions between national developmentalist agendas and the opportunities opened by global urban connectivity. Significantly, and in contrast to current urban university paradigms, we find Singapore's university sector internalizing and operating with a particular technocratic urban ontology that, while partial, helps collapses the distinction between universities being 'in', 'of', or 'for' the city and opens new avenues to analyze and mobilize universities in urban(izing) society.

Keywords: Universities; Urbanization; Urban Development; Global Cities; Singapore

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Introduction to the Forum

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Rethinking the Urban University

> The extreme poverty, persistent deprivation, and pernicious racism afflicting communities in the shadows of powerful, relatively wealthy urban universities raise troubling moral issues, as well as questions about higher education's contribution to the public good… [I am] arguing for the development of truly engaged universities, in which a very high priority is given not only to significantly improving the quality of life in the local community, but also working with the community respectfully, collaboratively, and democratically… No urban university, as far as I can tell, presently meets these criteria (Harkavy, 2016, pp. 2155-2156).

Universities are today emerging once again as key contributors to the future of cities. Ira Harkavy's recent call for tertiary education institutions to (re)claim an active, collaborative, and democratic role in their cities is indicative of how the 'urban university' tends to be understood in aspirational and policy terms. This approach calls for universities to (re)take a center stage in the production of urban space and in the rebalancing of a splintering society. Harkavy reflects an intellectual and institutional lineage that, in large part, originated in the United States in the 1960s as universities, first, attempted to respond to the demands of expanded post-war enrollment, and second, came face-to-face with the travails of the unfolding 'urban crisis': deindustrialization, decline, (racialized) social unrest, and the failure of modernist planning (Addie, 2017; Diner, 2017). Early champions of the American urban university lauded its potential as "a noble and exciting enterprise because it is an engagement with the most crucial problems of our times" (Tinder, 1967, p. 492), and the notion still has strong associations with a normative desire for urban-serving universities to be responsive to the communities in which they are embedded (Johnson and Bell, 1995; Rodin, 2007). Local engagement and place-based problem-solving remain important tasks in shaping democratic, cosmopolitan, and equitable societies (Calhoun, 2006; Harkavy, 2006). However, four decades of dramatic urban restructuring and sectoral re-regulation have fundamentally transformed the social and spatial environments universities find themselves in, both in the United States and around the world. This necessitates a reappraisal of the 21st-century urban university in global perspective.

In this viewpoint forum, we assert there is a need to move beyond reading 'urban university' practice predominantly through highly-localized forms of academic engagement. The urban university is embedded in the geographies of planetary urbanization (Brenner, 2014) as much as global higher education political-economies, and needs to be considered from this angle rather than a localized reality. The histories and development of universities and university systems beyond the 'North' are as telling as the dominant cases that capture the international imaginary, and we should strive to represent these stories 'off the map' to rebalance the global discourse (per Robinson, 2002). Here, we turn to Singapore as a distinct global city and urban knowledge hub to provide an alternative lens on the potential and practice of a new urban university.

Our argument is threefold. First, universities are being asked to do more for their cities and regions – in ways that extend well beyond established teaching and research functions, and practices traditionally associated with 'urban-serving' institutions. These expectations reflect both a desire to leverage universities as key players in the 'knowledge economy' and more draconian pressures arising from drastic cutbacks in public funding since the 1980s (Collini, 2017; OECD, 2007). As evidenced across North America and Europe, various stakeholders now "expect a more direct return on their investment" (Harrison and Turok, 2017, p. 978). Influential policy

frameworks originating in the U.S. encourage municipalities to engage their universities as economic engines (Andes, 2017) and locally-embedded 'anchor institutions' capable of driving sustainable growth (Ehlenz, 2018). In the United Kingdom, calls to reassert the university as a public good have been framed relative to the 19th-century 'civic university', albeit reinvented for a globalized economy and society (Goddard, 2009). Universities, in turn, have embraced a variety of regional roles and expanded mandates, including 'mode-2' knowledge production, and 'entrepreneurial' and 'engaged' missions (for reviews see Nelles and Vorley, 2010; Trippl et al., 2015; Uyarra, 2010). These agendas point to a spectrum of productive synergies that may be forged locally between leadership in city hall and the 'ivory tower' and there are pertinent lessons to be learned from extant city-university engagement. However, such missions, ideologies, and practices remain grounded in the local development experiences of (primarily) the U.S. and U.K. It is less clear how they can inform city-university partnerships beyond the Global North; how they resonate with universities' national or global aspirations; and how they might be operationalized in globally-integrated metropolises where provosts and presidents are but one of many fish vying for attention in the urban governance ocean.

Second, while some nominally 'urban' (i.e. U.S. inner-city) issues persist as Harkavy suggests, cities and the problems they face have changed over the past half-century. The challenges of contemporary urbanization now unfurl at the global scale: from fiscal crises and demographic transitions to global pandemics and climate change. Universities, too, are regionalizing and globalizing in new ways that both respond to and reshape urban society (Addie 2017; Marginson, 2004). With this comes a tremendous capacity to analyze and inform *urban* decision-making on global sustainability, social inclusion, and resilience issues beyond their immediate environments. This has important implications for global urbanization. For example, with the formal adoption of global frameworks like the Paris Agreement on Climate Change in December 2015, or the UN New Urban Agenda in October 2016, universities are increasingly assuming greater responsibilities in producing the evidence base needed to support the UN's Sustainable Development Goals (Acuto and Parnell, 2016; Bai et al., 2018). New modalities of *urban* university engagement (reticulated and place-based) are required to inform sustainable development and governance arrangements in rapidly urbanizing areas of Africa, Asia, and Latin America that require expanded, flexible data gathering, capacity-building, and practical knowledge generation (Acuto et al., 2018; Elmqvist et al., 2018).

Third, as the now well established discussions of post-colonial urbanism attest, urban theory cannot be solely abstracted from a select few sites in the global North (Robinson and Roy, 2016; Sheppard et al., 2013). Where we theorize from has significant impacts on how we define the urban, and for the transferability of particular concepts and policy packages – including our understanding of the 21st-century urban university. Divergent experiences between the Global North and South are indicative of differing higher education structures, institutional capacities, governance frameworks, and path dependencies (Marginson, 2011); including the potentiality universities to open regimes of subaltern knowledge production (Appadurai 2006; Robertson, 2006). Equally they are also illustrative of transformations underway in the architecture of global urbanism, the shifting centrality of old peripheries that, like Singapore, have increasingly become new drivers in the global urban imaginary. As literature emerging in and beyond the Global North attests (notably in the Chinese context), universities are responding to, and producing new, urban structures in material and morphological terms (Addie et al., 2015; Sum, 2018; Ruoppila and Zhao, 2017) and through new forms and geographies of urban knowledge production (Kong and Qian, 2017; Li and Phelps, 2017; Ong, 2016).

It is in this light of that we engage Singapore as a fertile ground to look beyond the dominance of U.S./U.K. discourses and situate discussions of city-university relations within the reality of an emergent global knowledge hub. In the following, we contextualize Singapore as a distinct global city and "pedagogical state" (Pykett, 2010), but one whose institutional infrastructure and ways of operating can productively challenge and remake our understanding

of the urban university. Three critical commentaries by expert analysts and practitioners then illustrate the cutting edge of university urbanism in Singapore, before we conclude the forum by highlighting key insights, policy recommendations, and terrains for future debate.

Singapore: Global City/Global Knowledge Hub
When it comes to the conscious production of a global urban profile, Singapore is a prime contender for international fame. Having gained independence in uncertain economic conditions from Malaysia under the helm of its founder, Lee Kuan Yew, the city-state prioritized fostering entrepreneurship and rapid economic growth while maintaining tight authoritarian control 'from the center'. Leveraging the development of what Easterling (2014) terms 'infrastructure space' as an economic development framework, the country progressively emerged as a major regional, then global, logistics and mobility hub (Perry et al., 1997). In the wake of the 1985 recession – the first major downturn to hit the island since independence – Singapore shifted towards a diversification strategy that coupled global logistics with high-skilled service and tourism industries, forming what is now often looked at as the 'Singapore model' (Yeoh and Chang, 2001) by newer emerging hubs like those in the Middle East. Such explicit attempts to develop the city-state as a gateway to global city networks have placed Singapore on a path of culture-driven expansion that, from the original nation-building approach of the 1970s and 1980s, is clearly aimed at creating a knowledge and arts city (Kong, 2012). In this model, as the National Research Foundation puts it, universities are playing a key role in 'winning the future'.

The developmental pathway followed by the 'Lion City' in rising to well-accepted global city status is quite unique (Haila, 2016; Olds and Yeung, 2004). With a position as an independent city-state, a repeated 'global city' mentality enshrined in its founding ideal, a highly-cosmopolitan but socially complex urban milieu, and an advantageous location amidst international and regional logistics, the city is perhaps a case *sui generis*. Yet as an Asian success story of global city-building, the 'Singapore model' continues to travel far and wide as an aspirational 'entrepreneurial city' per excellence (Pow, 2014; Shaktin, 2014).[2] The city-state is now well recognized as a key hinge in global circuits of trade, mobility, logistics, real estate, and not least – especially for this forum – knowledge.

Singapore's university system has mirrored the meteoric rise of the city-state. The island now houses a complex higher education system, including six autonomous universities that enjoy some degree of freedom from central government control. The history of Singapore's university sector is one of mergers and redesigns. Early higher education and research institutions like the Raffles College and the King Edward VII College were established pre-independence at the outset of the 20th-century. The University of Malaya's Singapore campus opened during the early post-World War II years, and was renamed the University of Singapore in 1962. The 1960s also saw the development of a dedicated Chinese university – Nanyang University – founded to provide higher education to Singapore's expansive Chinese community. The University of Singapore and Nanyang University merged in 1980 in an attempt by the city-state to consolidate resources into a globally-competitive, English-language hub: The National University of Singapore (NUS) (Tan, 2004). At the same time, an independent Nanyang Technological Institute (NTI) was set up with the goal of training Singaporean engineers. A decade later, in 1991, NTI was merged with the long-standing National Institute of Education to form the semi-autonomous Nanyang Technological University (NTU), which still admitted students via a joint pathway with NUS, but quickly grew into the country's second largest higher education institution (HEI).

Since the mid-1980s, Singapore's higher education sector has been reshaped by two central imperatives. The first, *massification*, was conceived of as a means to boost the quality of

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[2] The development and export of 'smart' urbanism has emerged as an important mechanism in this regard (see Kong and Woods, 2018; Watts and Purnell, 2016).

human resources following the 1985 recession (Lee and Gopinathan, 2008). The second, *internationalization*, crystallized in 1998 around: (1) the 'World Class University' program, which sought to attract ten globally-renowned HEIs to Singapore; and (2) the concerted implementation of the 'Global Schoolhouse' development policy, aimed at opening the territory to global education markets and transforming Singapore into 'the Boston of the East' (Olds, 2007; Sidhu et al., 2011). It took until 2000, with the establishment of Singapore Management University (SMU), to see the realization of a third university in Singapore (discussed in government since 1996). SMU testifies to the growing embeddedness of Singapore in authoritative circuits of knowledge production, with the university being set-up jointly with the University of Pennsylvania to more explicitly follow the American university system (Chan and Ng, 2008). The international partnership model would be repeated in the establishment of Singapore's fourth and fifth autonomous bodies: first in 2005, with UniSIM as a partnership of Singapore Institute of Management and The Open University; second, in 2009 with the Massachusetts Institute of Technology (M.I.T.) playing a key role in the creation of a fifth science-focused institution: the Singapore University of Technology and Design (SUTD).

The early-2000s also saw the emergence of other international partnerships that set up autonomous institutes centered around NUS, including Duke-NUS Medical School (2005) and the Yale-NUS College (2011). During this period, NTU also achieved full independent status from NUS (2006), and the Singapore Institute of Technology (SIT) was announced as a university 'of applied learning'. More recently, UniSIM was redesigned in 2017 as Singapore University of Social Sciences (SUSS) as part of the Government's plan to increase the number of publicly-funded university places. Massification, though, has been augmented by a common undergraduate core course – 'Singapore: Imagining the Next 50 Years' – rolled-out in January 2017 and taught at all Singapore's six publically-funded universities. Initiated by a working group formed by the six university presidents and overseen by the Ministry of Defence's 'Advisory Council on Community Relations in Defence', the course aims to raise awareness of, and develop policies relevant to, the challenges facing the city-state; from national security issues and rising global competition to the impacts of a rapidly ageing society (*Straits Times*, 2 April 2018).

Finally, and emblematic of nation's import partnership model and internationalization agenda, the Campus for Research Excellence and Technological Enterprise (CREATE) was approved by the Research, Innovation and Enterprise Council in 2006 as an 'international collaboratory' for global university research centers working on human, energy, environmental, and urban systems. The first CREATE residents – the Singapore-MIT Alliance for Research and Technology (SMART) – formed in July 2007 and ten years later, the campus now houses collaborations with ETH Zürich, M.I.T., Technical University of Munich, Hebrew University of Jerusalem, University of California-Berkeley, Shanghai Jiao Tong University, and Cambridge University.

As Singapore has positioned itself as a major Asian and global knowledge hub, its main universities have come to enjoy regular international recognition in global university rankings and educational imaginaries, with NUS and NTU regularly in the top percentile amongst American, British, and Australian counterparts.[3] If we consider this landscape together with five major polytechnics, two long-standing arts schools, and a variety of external campuses and smaller international partnerships, Singapore's higher education and research sector is clearly an apt and vast ground to re-examine the idea of the 'urban university' (see FIGURE 1). On one hand, the international partnering style, specialization foci, as well as the underlying global city developmentalism that characterizes the city-state, offer a prescient opportunity to consider emergent global educational policy mobilities, including that of the 'entrepreneurial university' (Wong, Ho, and Singh, 2007). On the other hand, they also present new challenges regarding the

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[3] NTU (11th) and NUS (15th) were the highest placed Asian universities in the 2018 QS World University Rankings, while SMU was positioned in the 441-450 bracket.

opening of elite institutions, the promotion of meaningful community engagement, and the decolonialization of privileged knowledge in a governance landscape that is largely resistant to such practices.

<<FIGURE 1 HERE>>

Perspectives on Policy and Practice from Singapore
The participants in this Forum, K.C. Ho (*National University of Singapore*), Steven Cairns (*ETH Zürich Future Cities Lab*), and Hwee-Pink Tan (*Singapore Management University*) are actively involved in shaping the Singaporean urban university from a variety of institutional positions. Each was approached to contribute their distinct perspective to this dialogue on the basis of their expertise and experience as analysts, directors, and practitioners of urban university activity in Singapore. In the following commentaries, they have been encouraged to offer their own interpretations of what it means to be an urban university in the Singapore context, and to reflect on their experiences working to enact this vision in their own words. In the first essay, Ho illustrates how the orientation and operation of Singapore's universities are shaped at the intersection of the global city and nation-state. Cairns follows by reflecting on the institutional and intellectual challenges of building an urban research center in Singapore. Finally, Tan discusses how the urbanity of Singapore has shaped his approach to developing 'smart' technologies that address the pressing practical issue of ageing in the city. Their viewpoints, as we note in our concluding remarks, cut across academic, administrative, and policy debates to shed new light on the conceptual and concrete practice of university urbanism in an era of global urbanization.

Singapore and the Milieu of the New Global Urban University

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Is the academic experience, its social life, and university mission likely to be distinctive when the university is located in a city-state which is at the same time a global city?

My graduate student has just returned from a short field trip to a neighboring country and we were discussing plans for the longer term stay when he remarked that one of the first comments people he met there was the recognition of his Egyptian heritage once they found out his name. We talked about how strange this was as this did not occur at all during his two-year stay in Singapore.

His experience in Singapore does point to a critical feature in this city-state. Between 1980 and today, the number of foreign born residents changed from 1 in 10 to 1 in 4. This changing demographic says a lot about how we easily accommodate strangers in everyday life in Singapore.

While this is a key feature of an urban university in a large metropolis, it is more pronounced given Singapore's city-state status and the absence of an ethnic/cultural hinterland. We did a survey among international students in seven major cities in Northeast and Southeast Asia: Beijing, Guangzhou, Tokyo, Osaka, Seoul, Taipei, and Singapore. These students were asked to rate their satisfaction with features of the living environment in these cities and Singapore had the highest mean satisfaction scores for tolerance towards ethnic/religious differences (Ho, 2014).[4] It is important also to point out that Singapore did not have the highest mean satisfaction scores for the item "local people are friendly", Taipei and Osaka received this distinction. It is this acceptance of differences, which does not necessarily mean friendliness, in

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everyday life which enables newcomers to go about their business with the minimum of fuss. And this is an importance attraction not just for students but also faculty.

Global city research de-anchors the global city from the nation, and it is this feature of Singapore's global city status which encourage its universities to pursue their ambitions worldwide. With the growing importance of international higher education and the competition for reputation, universities in Singapore shifted their attention from the task of being a national institution tasked with educating the elite towards the mission of an international research university. Singapore's prime minister underscored this historic higher education moment when Singapore national universities changed their mission:

> Universities are in an intense contest to attract the best and brightest. Such competition, moreover, is not just local or regional. It is global, and fiercely so… The best universities trawl for the best faculty, students, researchers, and partners for collaboration, in a global catchment (Prime Minister Lee, cf. *Straits Times*, 2 July 2005).

My academic colleagues in Southeast Asian universities have often asked me why the Singaporean university is more interested in the rest of the world rather than in our own region. The logic of competition among flagship universities in Asia, almost all of them located in capital cities, is to look beyond the immediate region. The infrastructure created around the quest for reputation requires that players also acknowledge and build collaborative alliances with each other as a critical means of shoring up the university's reputational capital. And so, as Kong (1999, p. 1525) notes, "a key effort…has been to capitalize on 'core competencies' identified through strategic planning exercises, so that the university may be positioned as a 'world-class' institution that keeps 'good company', collaborating/networking with other institutions of 'quality'". The new urban university in Singapore thus join other like-minded universities and occupies a carriage in a train which is moving too fast. Its speed is fueled by new global norms of productivity and quality. We academics are as invested, and as passengers on this high speed train, we do not want to get off because we enjoy the view.

The transformation of the Singapore university is clearly seen in its international recruitment. The Minister of State for Education, replying to a question raised in parliament, said in 2006 that in the past five years, about 23 per cent of new academic hires at the three local universities have been Singaporeans, with permanent residents making up another 12 per cent (*Straits Times*, 15 February 2006). This means that a significant 65 per cent of new hires are foreign academics and this practice of looking to the rest of the world for new hires has continued.

This new foreign-local faculty mix has resulted in a set of simmering tensions. Singapore as a global city, hosts a strong center for financial and business services, and accordingly has the highest cost of living in Southeast Asia. Consequently, foreign faculty worry about housing when they have to move out of university subsidized housing upon getting tenure. They also groan about getting places in local schools as the cost of international schools catering to children of business executives is beyond the reach of foreign academics teaching in Singapore's universities. Local academics often remark that they are saddled with many local obligations from government agencies and NGOs compared to their foreign colleagues who can focus on their research.

There is a final comment to make about the new urban university. What do you do when the university where you have worked all your life shakes your hand and say goodbye? We did a matching survey among academics in Asian universities (Chen and Ho, 2015).[5] A key difference between the samples is that local professors made up 43.3% in Singapore and 88% in Taiwan and the sense of community is accordingly stronger in Taiwan. One result is that Taiwanese academics continue to be invited back to their universities for important functions and there are

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[5] "The changing academic profession in Asia: Singapore" (R - 111-000-118-112). The larger project was coordinated by Research Institute for Higher Education at Hiroshima University.

office spaces for retired professors. Not so for the Singapore university. The new global urban university is exactly this: it recognizes diversity and courts talent from all over the world. And it is extremely good at what it does. Just do not get sentimental. What flows into this type of university is also expected to flow out.

Building a Global Urban University in Singapore*

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The ETH Zürich Future Cities Laboratory (FCL) operates in an unusual institutional framework. We are here at the invitation of the Singaporean government: FCL was established in 2010 by ETH Zürich and Singapore's National Research Foundation (NRF) as part of the CREATE campus, which brings together a range of overseas universities – M.I.T., Berkeley, and Cambridge – to work with Singapore-based institutions on once-renewable five-year research contracts. In practice, we are university-like with a clear research mission, but we are not structured like a university. We don't have discipline-based departments, faculties, or the structure that you typically get in a university. Our goal is to be a hub for academics from multiple disciplinary backgrounds to interact with particular urban themes and projects over extended timeframes. But our home institution, ETH Zürich, is a research-intensive university and we are also accountable to its mission and values. This means doing high quality, academically-accountable work: publishing in journals, presenting at conferences, and ultimately addressing the big questions of the day. But the way we do it is a little bit more interactive and a little bit nimbler.

We were chosen to be part of CREATE for many reasons, including the disciplinary mix of our proposal and its relevance for Singapore. The questions that concern us are already very high on the national planning agenda. It is no secret that the government of Singapore, for a range of strategic reasons, needs to think very carefully about urbanization: what is a future city? What is an ideal city? What is a sustainable city?

Our proposal began by considering the potential fit of our expertise to the urban research agenda of Singapore. But it is clear that neither ETH nor the host agency in Singapore (CREATE) wanted us to be a problem-solving agency for Singaporean planning. There are plenty of resources in local government agencies and universities that do that very well. Our job is not to replicate an already very thick and operationally-tuned research sector. Rather, we have adopted a flexible framework to pursue 'transformative research' within a wider geographic and intellectual scope. At the same time, we are aware that our work is funded and underwritten by the public purse both in Singapore and Switzerland. Our program is peer-reviewed by a Scientific Advisory Committee that represents most of the disciplines hosted in the Lab, as well as an industry representative (Helmut Macht, Siemens Building Technologies) and a Singaporean agency representative (Koon Hean Chong, CEO of Singapore's Housing and Development Board). The group is well-balanced, and reminds us to theorize cities and city processes, as well as tune into technological developments, policy, and concrete city-making practices.

The questions raised in Singapore are especially challenging given the rapid development of the city over the past two or three decades, and its potential role as standard-bearer, or even model, for one kind of urban development of Asia, in terms of sustainability, density, equity, resource use, metabolism etc. Singapore is a geographically small state and a relatively big city. This produces an intimacy between city and state which, along with obvious physical constraints – limited land, almost no hinterland nor natural resources – predetermines a certain kind of urban development: compact, high density, mixing strategic self-reliance and openness and focusing on economic innovation, high-value jobs and so on. Further, despite its global city aspirations, Singapore does not have the advantage of having an especially large nor complex

university system comparable to the U.S. or U.K. This often places us in closer proximity to policy research being conducted by government agencies.

From the very beginning, we have been very plugged into the Singaporean policy environment; we didn't have to shape those relationships, it was a pre-given format. This is a milieu rich with research capabilities and the links between research thinking and policy thinking are very direct. That said, access to data can be a challenge as open data policies are still emerging here. This is not necessarily a political issue *per se*: it reflects the city-state condition. Singapore is deeply aware of its vulnerability as a micro-state, so there's much greater caution around certain kinds of data that would be freely-available elsewhere. Quality data exists, but it takes time and trust to access. By contrast, researchers working in neighboring countries (Vietnam, Thailand, or Indonesia, for example) find that state-collected data is often fragmentary and unreliable. This has produced a host of innovative data collection strategies, combining satellite and drone photography and on-the-ground interviews. Working in Singapore presents different methodological challenges and requires different research strategies. It takes time – no matter how much you investigate and how good you are – to really understand the geographical questions, the cultural questions, and the different systems of governance here.

Singapore itself is a remarkably unique city. As such, it is the vantage point but not the horizon for what we do at FCL. Our base here enables us to have a view on Asia and a view on the world, and this is important because Asia plays a vital part of the bigger story of urbanization. We have a license to think much more broadly about urbanization, in general, at a planetary scale. We do that by looking at regional, national, and trans-regional conditions. For example, we are interrogating the famous missing hinterlands of Singapore (Topalovic et al., 2013). It is clear that Singapore has huge ecological and financial footprints in Indonesia to the south, Malaysia to the north, and beyond. FCL projects grouped under the theme 'archipelago cities' are looking directly at the question of cities-beyond-national-borders in the Singaporean context. On a much more non-contiguous level, we have also analyzed other urban spaces, in Latin America for instance, through the Singaporean lens to examine how knowledge is transferred from Singapore across national boundaries. We are also interested in questions not reflected in the Singapore model. The dominant form of urban settlement in Asia is not the compact, vertical and integrated city, but the horizontal urbanized landscape. This is the norm in many parts of India, China, and South-East Asia, but as these are not separate worlds, the dynamics of knowledge exchange between Singapore and these regions are becoming increasingly important.

For our part, our interactions are both institutionally-focused and place-based. Yet, we are essentially an overseas institution that is building links to our immediate vicinity in Singapore. This process takes time. It means that (so far) we tend not to have especially thick relationships with our immediate neighbors. It is also true to say that our foreignness is an important precondition of our mission. Thickening Singapore's links to the region, Switzerland, Europe, and the world is very much part of how we operate. In this respect, FCL's relationships with Singapore's planning authorities are necessarily foregrounded, and often quite independent of where these organizations are on the island. We have a lot of meetings with government agencies in our CREATE offices. That was a central part of our work, but our aspiration is to build virtual and physical spaces that facilitate even more complex research relationships.

In my opinion, a core feature of an urban university is the pressure to think beyond the limits of your home discipline. Working productively with this pressure involves particular styles of interaction, ways of seeing and working. We put a lot of emphasis on explaining our work to peers across disciplinary lines, and to broader audiences. You cannot respect somebody's truth claim if you do not understand their disciplinary vocabulary, their style of argumentation, how they deploy evidence. Engineers, architects, social scientists and computer scientists, for example, do not readily collaborate deeply in conventional university settings. But this is one of the exciting parts of the community here: people relish the complexity of cities and are willing to

engage with the challenges that they pose for abstract aspirations such as sustainability, resilience and equity. The impact is starting to take shape now through papers and conventional academic outputs but also through exhibitions, built projects, through design support tools, datasets, interactive frameworks for design and planning that are produced here. This is where things start to get very interesting.

The Urban University at Work: Tackling Urban Ageing in Singapore*

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There is a blurry line between the national agenda and the urban agenda in Singapore. This not only makes the city-state quite unique, but is reflected in the origins and work of the iCity Lab at Singapore Management University (SMU). The iCity Lab came about because Tata Consultancy Services (TCS) – a global IT consulting and services company – wanted to partner with SMU to leverage our strengths in integrating computing, management, and social science. Working with us to build citizen-centric smart city technology platforms offered TCS and her partners a competitive edge. Our initial collaboration was launched in August 2011 and centered on the idea of 'intelligent cities', with Singapore serving as a project pilot for a smart technology platform which could then be rolled out in South East Asian and then global markets. But then, in 2014, Singapore's Prime Minister, Lee Hsien Loong, launched 'Smart Nation'; a national program that focuses on using digital technologies to solve societal problems over five key domains: transport; home and the environment; business productivity; health and enabled ageing; and public-sector services. This opened an opportunity to look at doing something bigger, with healthcare and ageing identified as an important niche where the iCity Lab could make a difference across all of Singapore.

Our current flagship project, Smart Homes and Intelligent Neighborhoods to Enable Seniors (SHINESeniors), emerged from this agenda. SHINESeniors is funded by the Singapore Ministry of National Development and National Research Foundation and serves as a demonstration for large-scale, end-to-end elderly home-and-community care using the dual integration of wireless sensor networks and a home care platform (e.g. Bai et al., 2015).[6] It's a complex social and technological project. Ageing is not just an issue for cities, but the connectivity of urban space presents distinct opportunities at the city-level, whether this be Singapore or Jakarta. If something is proven to work in Singapore, it is more likely to work in other cities that are more-or-less equally connected. Scaling up to the national level – i.e. thinking about smart nations rather than smart cities – is a different challenge because you do not have the same uniformity in connectedness and quality of infrastructure. And in Asia, you face another wrinkle because, in rural areas, many people still live in multi-generational households that supply a support structure. In cities, people might live closer together, but oftentimes they don't know their neighbors.

SHINESeniors started off with two or three partners but we're now working with a range of organizations including: technical partners; three Singaporean government agencies (the Housing Development Board, the Urban Redevelopment Authority, and the Ministry of Health); NGOs; and community care organizations (VWOs) who work with elderly populations. The uniqueness of these partnerships has been instrumental in the success of this large-scale research project. Because we are working with strong and established organizations we have been able to recruit elderly participants for our study and upscale very quickly. Partnering with VWOs, in particular, has been very important in enabling us to put sensors in homes with elderly residents. We also reached out to 'Lion Befrienders', an organization working with approximately 6,000 elderly people in Singapore who live alone. They successfully raised funds to implement

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technological tools and monitoring systems for elderly safety in their homes. The data collected through these systems have provided a wealth of information and actionable insights that we can now use to attract additional partners. And our partnership with the Ministry of Health has enabled us to connect with other groups. We started in the eastern part of Singapore because that was where our partners were located, but from there we have expanded into central and western areas of the island.

Being based at SMU has several benefits for the iCity Lab. First, the University's mandate has always been to do applied research that brings about social impact. There's a lot of support from the top that facilitates this. Academic work remains important, but the government understands that if you do applied research, you're more likely to be able to affect positive change. Faculty members at SMU are well aware that applied research is valued and that the outcomes of this work are recognized by the institution.

Second, SMU is not a large university. Its size makes it much easier for people working on similar research questions to connect. There are six schools at the university and issues surrounding ageing and healthcare are one of our key focus areas. The physical layout of the campus itself means that we are physically very close together. We're all connected by underground corridors so we constantly run into our colleagues. In fact, conversations between the iCity Lab and the Center for Research on the Economics of Ageing (CREA) – who are based in the School of Economics and do work that is very relevant to us – began in large part because we are located in adjacent buildings. Through these conversations, we have been able to bring together the iCity Lab's focus on technology with CREA's interest in financial wellbeing, and are now talking to the Lien Center for Social Innovation, who look at the elderly in addition to work on single parent families, people with disabilities etc. So, there are a number of approaches and methods that we are seeking to synergize to provide a strong holistic foundation to tackle the challenges of urban ageing.

At an institutional level, SMU's Office of Research and Tech Transfer has been very active in looking at ways to connect both across the six schools, but also within them. They look at SMU as a whole, and have a comprehensive understanding of who does what at the university; especially regarding the university's five areas of excellence: analytics for business, finance and financial management, innovation and entrepreneurship, urban management and sustainability, and ageing and healthcare management. Having such a pan-institution body has proved particularly important when it comes to presenting to the Ministry of Education and coordinating with the business and industry groups who are interested in our work.

Finally, all the universities in Singapore are, in a sense, urban universities. We are too small a place to have non-urban universities: to be Singaporean is to be urban. But SMU is the only *city* university. It is the only university based downtown. We're very close to most government offices and that proximity is very advantageous for us in strengthening our relationships with government agencies and other key organizations. Our central city location means that if we have to travel to the East, to the North, to the West, we can. This is important because in addition to the technical and data analytical work we do through SHINESeniors, our team has research assistants working on the ground as community coordinators. With all our projects, they are the ones responsible for keeping in touch with the elderly participants. To bring our research outside the university campus, and to achieve our goal of taking our SHINESeniors work island-wide, the connectivity of the city is essential.

Reloading the Urban University from Singapore
   Jean-Paul D. Addie and Michele Acuto

The preceding viewpoints illustrate the challenges and opportunities opened by university urbanism in Singapore. There are certainly several commonalities with the internal restructuring, drive for societal 'impact', and globally-competitive orientations being pursued by universities in

the Global North. As with many North American and European universities, establishing policies and mechanisms promoting interdisciplinary research are increasingly central priorities for HEIs looking to address the complexities of contemporary urbanization and the coordination of university knowledge production appears as a recurrent concern (see Addie, 2018). At the same time though, comparative differences do emerge when considering external relations and public policy alignment in Singapore; both in relation to the Global North and the broader Asian context. Strong synergies between city and state policy strategically position Singapore as a laboratory for urban analysis, engagement, and experimentation, although this tends to shape externally-facing university activities as an instrumental governmental remit, rather than them being driven by internal institutional drivers.

There is also evidence of stresses emerging between Singapore's higher education players and the requirements of the 'postdevelopmentalist' global city-state (see Hartley, Woo, and Chung, 2018). As Ho argues, de-anchoring the global city from the nation presents distinct opportunities through which Singaporean HEIs can pursue reframed and rescaled interests (see Jonas and Wilson, 2018). The difficulties presented by continued urbanization in Singapore are heightened by the absence of a hinterland. Brenner's (2014) provocative assertion that there is 'no outside to the urban' rings literally true in Singapore. Still, this absence does open possibilities by shifting the urban analytical lens towards questions of connectivity and globalisms, which Cairns identifies as central to the research agenda being curated at ETH Zürich's Future Cities Laboratory. The urban is therefore not equated to the local in geographic or political terms, nor is it constructed as mutually-exclusive to global ambitions. Rather, the Singaporean urban university holds different socio-spatial frames together so that both synergies and tensions are illuminated depending on the context under consideration.

The Singaporean urban university therefore presents an alternative relationship between 'town' and 'gown' than the place-based engagement between rational and discrete actors that mark contemporary Anglo-American policy discourses. Academic and city leaders in North America and Europe would do well to untether their 'urban university' policy agendas from overly-localized notions of 'anchoring' and reconsider the topological and multiscalar urban horizons of their institutions. Our argument here echoes, to some degree, calls from academia and policymakers alike to experiment more extensively with city-university partnerships (Bai et al. 2018; Elmqvist et al. 2018). As global drivers, in an economic as much as multilateral sense, call upon universities to play a role in international action (Birch, 2017), these linkages need to be fundamental ingredients in our collective capacity to address global challenges. Informed and scientifically-grounded connections are vital because they offer scope to connect urban research and urban policy with actions 'on the ground' taken by those (local and metropolitan) authorities that are most directly in touch with emergent issues associated with, amongst others, climate change, resilience, and health (Robin and Acuto, 2018). While not free from challenges and criticisms, Singapore's university system – with its general conversance in *matters of urbanization* and in many cases tight interlinking with government and industry – offers interesting policy learnings for those seeking to foster deepened and extended roles for HEIs informing urban decision-making.

Tellingly, Tan notes that while SMU is the only school located downtown ('in the city'), all Singaporean universities are, essentially, urban. This starkly contrasts to the prevalent narratives (if not the necessary reality) of urban universities in Europe and North America being 'in, but not of, the city' (Bender, 1988; Brockliss, 2000). In Singapore, being an 'urban university' is a condition determined by more than an institution's location in the city, or the extent to which local student and labor markets structure its citizenry or body politic. Instead, the urbanity in which Singaporean universities are necessarily embedded – in social and material terms – compels the construction of particular modes of thought, types of knowledge, and forms of academic practice. In other words, we can conceptualize the 21st-century Singaporean urban university as urban because its epistemic vantage point is founded upon, and internalizes, a

generalized but particular *urban ontology*, the concrete articulation of which is conditioned by the specific historical experience of the Lion City and political interests of the People's Action Party (PAP) (Ng, 2018). As illustrated across the above contributions, this institutionalized urbanity is expressed variously as an essential embedding within Singaporean urban planning and policy frameworks, and in an analytical orientation that shapes the nature of academic inquiry and knowledge production. Yet returning to Harkavy's remarks in the epigraph, Singapore's higher education sector should pay close attention to the democratic and cosmopolitan imperatives of urban(izing) society – in other words, viewing the urban as an essentially *political*, not simply technocratic, problematic (Lefebvre, 2003). This is a significant imperative as international engagement and experiments with private higher education compels the opening of previously cloistered elite institutions (Chen, 2015), and as the nation-building impetus of 'Singapore: Imagining the Next 50 Years' butts up against the demands of critical (self and national) reflexivity. As Amin and Thrift (2017) might put it, the task becomes – both in Singapore and further afield – how to leverage the infrastructural fabric of a reframed urban university to think, and ultimately act, 'like a city', with the heterodoxy, contestation, and possibility that this entails.

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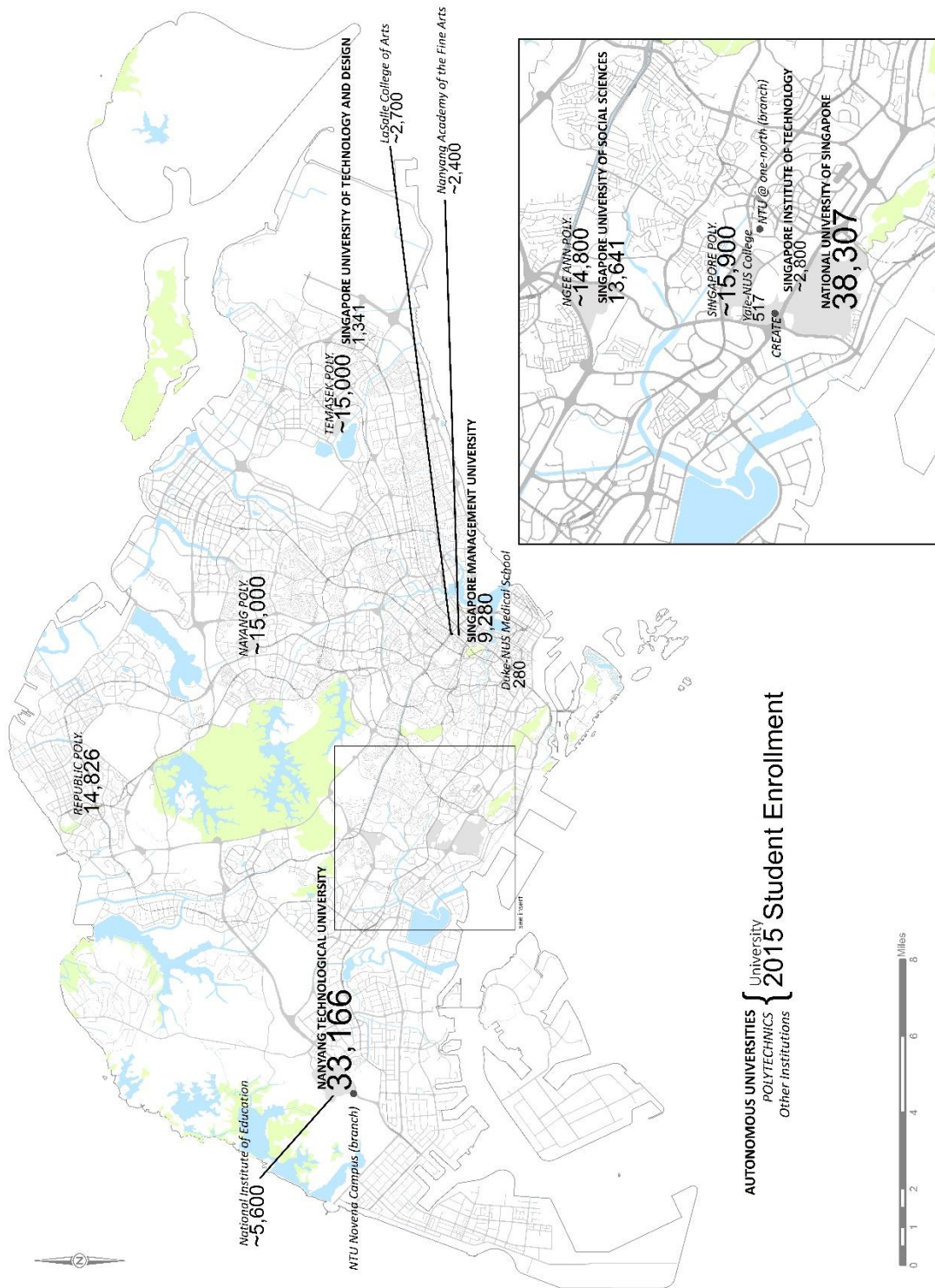
FIGURES

Figure 1: Singapore's higher education landscape (map by Tanner Barr).