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Academic "Centres," Epistemic Differences and Brain Circulation

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ABSTRACT

This article investigates the factors that shape how migrant academics engage with fellow scholars within their countries of origin. We focus specifically on the mobility of Asian-born faculty between Singapore, a fast-developing education hub in Southeast Asia, and their "home" countries within the region. Based on qualitative interviews with 45 migrant academics, this article argues that while education hubs like Singapore increase the possibility of brain circulation within Asia, epistemic differences between migrant academics and home country counterparts make it difficult to establish long-term collaboration for research. Singapore institutions also look to the West in determining how research work is assessed for tenure and promotion, encouraging Singapore-based academics to focus on networking with colleagues and peers based in the US and Europe rather than those based in origin countries. Such conditions undermine the positive impact of academic mobility between Singapore and surrounding countries within the region.

INTRODUCTION

Amidst increasing cross-border movement among highly skilled professionals, researchers and policymakers have raised the question of how migrant academics can contribute to their countries of origin when return is not a viable or immediate option. Moving away from the brain drain debates of the 1970s, recent studies have argued that overseas scholars can still contribute to their home communities through diaspora networks, sharing knowledge and resources through international collaboration, short visits, and internet communication (Davenport, 2004; Laudel, 2005; Meyer, 2001; Meyer and Wattiau, 2006). Such phenomenon is often encapsulated in the term, *brain circulation,* where studies cite the breaking down of boundaries among nations and the potential benefits brought by the short-term mobility of highly educated workers to and from their countries of origin (Singh and Krishna, 2015: 302).

Yet scholars have also cautioned against depicting the mobility of highly skilled workers as continuously fluid, free of structural barriers that impede people's movement (Cohen, Duberley and Ravishankar, 2015; Mosneaga and Winther, 2013; Yeoh and Huang, 2011). In addition to policy and administrative barriers (Chou, 2014), they argue that highly skilled mobility, such as brain circulation, can also be "temporally and spatially stickier" as migrants can become "locked into" particular places or develop attachments which restrain movement (Williams, Balaz and Wallace, 2004: 42). Existing studies have also largely focused on the circulation of highly skilled

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professionals such as scientists, engineers, and IT workers. Fewer have looked specifically at migrant academics and the role that higher education institutions play in their engagement and disengagement with counterparts within their countries of origin. While a number of studies have investigated the role of universities in promoting *return* migration among overseas scholars (see Lee and Kim, 2010; Wang, Li and Li, 2015), we know little about how academic environments, institutional cultures, and practices of knowledge production shape the temporary circulation of overseas academics within their home countries and their subsequent impact on local knowledge production.

This article seeks to contribute to the extant literature on brain circulation in two ways. First, we respond to Ackers' (2005) call for a more nuanced understanding of the "stickiness" or "frictions" that impact how members of an academic diaspora choose to interact with counterparts within their countries of origin. We look specifically at brain circulation in the form of academic research collaboration or the shared work in pursuing a research question with the end goal of disseminating results in academic publications. Focusing on the case of Asian-born migrant faculty based in Singapore, this article investigates how such engagements are shaped by epistemic cultures or the norms, structures, and values that define how knowledge is created and, more importantly, recognized within migrant academics' home and host country institutions (Knorr Cetina, 1999). We also analyse the institutional policies which shape such epistemic cultures, emphasizing how opportunities for collaboration are affected by the specific standards that drive research expectations, the manner by which institutions assess academic work, and the politics of tenure and promotion. We argue that such factors are important aspects of academic work across all fields, yet remain an understudied aspect of how we understand brain circulation today.

Second, this study reveals the unique position of Asian-born migrant academics who obtained their doctorates (and/or postdoctorates) in prestigious institutions in the West, and migrated to Singapore, a rapidly developing education hub in Southeast Asia. Empirical research on brain circulation has tended to focus on academics' movement between developing nations and traditional "centres" of knowledge production in the West. Yet the last few decades have seen the rapid development of Asian universities, where governments have invested heavily in higher education. Singapore universities, in particular, have emerged as major players within international knowledge networks, cementing the country's status as an "aspiring centre" in the global hierarchy of universities. As such, Asian-born migrant faculty in Singapore have the opportunity to utilize networks that connect to their former PhD institutions in the West, and scholars within their countries of origin within the region. This article, then, raises the question of how epistemic and political cultures within Singapore institutions shape academics' motivations to engage in both types of collaborations. In the end, this article investigates whether countries like Singapore raise the possibility of establishing new centres of knowledge production away from the West, thereby encouraging the productive circulation of migrant academics within Asia.

BRAIN CIRCULATION AND DEVELOPMENT

Early definitions of brain circulation refuted the notion that highly skilled workers would remain overseas permanently, arguing that such migrants would eventually circulate back to their home communities (Gaillard and Gaillard, 1997). Yet recent studies have shown that in reality, most highly educated professionals never return "home," choosing instead to settle outside their countries of origin (Blachford and Zhang, 2014). As a result, researchers have sought to understand whether highly skilled migrants can contribute to their home communities from a distance, moving beyond the assumption that such "brains" are lost when they leave national territories (Fahey and Kenway, 2010; Mahroum, Eldridge, and Daar, 2006; Meyer, 2001; Saxenian, 2005). Such discourse has also

permeated policy discussions, among not only developing countries but also wealthy nations competing in a so-called knowledge-based economy (Cerna, 2016). In particular, policymakers emphasize the need for international collaboration between migrants and counterparts within their countries of origin, whether it be in the form of academic research, business ventures, or the commercial development of innovative products (Edler, Fier and Grimpe, 2011). Scholars have argued that successful brain circulation benefits migrants' host and origin countries, promoting investment in local businesses and possibly providing employment to local communities in both locations (Harvey, 2008; Saxenian, 2005).

In the case of migrant academics, governments have launched a wide range of programmes, providing research funding, institutional support, and opportunities for short-term visits (Blachford and Zhang, 2014; Xiang, 2011). Researchers argue that migrant academics often express a desire to help improve teaching and research in universities within their home countries, and suggested that well-planned programmes should provide them with the opportunity to do so effectively (Cohen, Duberley and Ravishankar, 2015). For example, Blachford and Zhang's (2014) research shows how Chinese Canadian academics work to support knowledge production within China by doing research related to Chinese issues, instituting joint research projects between Canadian universities and counterparts in China, and recruiting Chinese students into their graduate programmes. Studies have also shown how collaboration and networks with co-ethnic counterparts living overseas enhance academics' research productivity, thereby benefiting local knowledge production (Scellato, Franzoni and Stephan, 2015).

Yet, scholars have also cautioned against an overly optimistic interpretation of how academics overseas can contribute to their countries of origin. Similar to the issues besetting return migration, migrant faculty who wish to engage in collaborative projects or short-term visits within their countries of origin can face a lack of support from local state officials, fears of persecution, or frustrating bureaucracies within local institutions (Teferra, 2005; Yeoh and Eng, 2008). Non-migrant academics can also become resentful of the benefits that their overseas counterparts receive from the state, thus fuelling possible conflict between local and international collaborators (Altbach, 2014; Ortiga, 2011). At the same time, researchers have questioned how states demarcate who "belongs" to the diaspora, and how migrant academics define their relationship to their countries of origin. Harvey's (2008) study of British and Indian scientists show that while individuals may maintain contact with industry counterparts in the UK and India, such connections do not necessarily translate into significant investments in their origin countries.

BRAIN CIRCULATION WITHIN THE GLOBAL SPACE OF ACADEMIA

Scholars have argued that, compared with other highly skilled migrants, academics and researchers are more likely to express an attachment to a professional network of colleagues, rather than a national or ethnic identity (Colic-Peisker, 2010; Fahey and Kenway, 2010). Mahroum (2000) argues that these networks form *global spaces,* often organized at the level of a particular profession, discipline, or technology. While global spaces are not grounded in a particular place, they contain "poles of gravity" or "centres" where there is a concentration of institutions accorded a high level of prestige. Philip Altbach (2006: 124) echoes the same framework, defining academic "centres" as institutions with the funding, facilities, and qualified staff to pursue high quality research and teaching. In contrast, higher education institutions at the "periphery" are often found in nations whose research and teaching programmes would benefit greatly from the "expertise" of citizens who have studied or worked in these centres for knowledge production.

Existing studies on brain circulation (as well as brain drain in general) have largely portrayed the mobility of migrant academics as a movement towards these "centres", often located in places like

Western Europe and the US. Here, they seek better training, credentials, and recognition among their peers (Kim, 2010; Qiang, 2016). In contrast, fewer studies have investigated the role of "aspiring centres" (Altbach, 2006) or places where local universities are rapidly closing the gaps in global university rankings, where institutions at the centre lead. These aspiring centres emerge in the context of increasing investments in higher education in Asia and the Middle East, where state funds are poured into internationalizing local universities and improving their global rankings (Knight and Morshidi, 2011; Lee, 2014). Such efforts include ramping up research and innovation within these institutions, and introducing English as the medium of instruction and research production (Altbach and Knight, 2006; Knight, 2011). This gap in the literature is a cause for concern, given the growing number of emerging education hubs, which are neither migrants' origin countries nor the country where they obtained their graduate education.

Why Singapore? Brain circulation from the aspiring centre

Singapore has been a popular model among aspiring centres in today's global higher education system, given the rapid development of its local universities into key sites for knowledge production and innovation (Sidhu, Ho and Yeoh, 2011). Part of this development has been the aggressive recruitment of highly qualified faculty, making Singapore a major player in the competition for academic talent (Ng, 2013). Singapore institutions have been particularly successful in attracting doctoral graduates from some of the most prestigious universities in the world, offering generous compensation packages and research funding that rival those offered by Western countries. To date, foreign-born scholars account for more than 60 per cent of tenure-track and tenured faculty within the country (Paul and Long, 2016; Gopinathan and Lee, 2011).

Migrant academics in Singapore bring not only their knowledge assets but also personal networks, raising the possibility of new opportunities for brain circulation within the Asian region. In many ways, the presence of such active collaboration networks would indicate a positive move towards Singapore becoming its own centre of knowledge production, no longer reliant on ties to prestigious institutions in the US and Europe. It is important to note that a significant number of Singapore-based academics come from nearby countries such as China and India, as well as other Southeast Asian nations such as Malaysia and Thailand (Paul and Long, 2016). Many of these scholars travel back to their home communities as often as several times a year – a luxury made possible by Singapore's geographic location and its status as a regional transportation hub. In an analysis of publication data from Singapore-based academics, a large number of journal articles were co-authored with scholars based in four Asian countries: China, Japan, India, and South Korea. China-based researchers had the highest number of journal articles published with Singapore-based researchers, while US-based scholars were a close second (Wang et al., 2017).[1] However, these publications were largely clustered within particular areas of study such as electrical engineering, applied physics, and chemistry.[2] Neighbouring countries within Southeast Asia were also absent from the list of collaborating countries, highlighting how brain circulation varies depending on particular challenges within migrant academics' countries of origin. More importantly, co-authorship patterns do not completely capture the nature of collaborative work among academics (Katz and Martin, 1997). This paper provides a deeper investigation into the different factors that shape academic research collaboration between Singapore-based faculty and their home country counterparts.

METHOD

This article is based on qualitative interviews with 45 migrant academics (17 tenured and 28 tenure-track) who were born and grew up in countries geographically close to Singapore, but spent

considerable time in Europe or North America either working in academic positions or pursuing a doctorate and/or postdoc (see Table 1).[3] This sampling decision reflects the shift in the demographics of migrant scholars. While earlier studies have tended to portray migrant faculty as a group of Western expatriates (see Cohen, 1977; Hindman, 2009), recent years have shown a growing proportion of migrant faculty and researchers who were born outside the West and pursued postgraduate study in North America or Western Europe (see Lawrence et al., 2014). In this article, we define "migrant academics" as faculty members who were not born in Singapore but moved to the country to take on tenure track positions within its universities.

We interviewed a total of 17 women and 28 men, all employed at three of Singapore's major universities (the National University of Singapore, Nanyang Technological University, and Singapore Management University). The research team recruited interviewees by sending invitation emails to faculty members from two major fields: Science, Technology, Engineering and Math (STEM); and the Social and Behavioral Sciences. We then asked interviewees to connect us to other colleagues who might be interested in participating in the project ("snowball" sampling). To supplement this recruitment method, team members promoted the project at university workshops and events, distributing fliers with project details to interested faculty members. We did not recruit interviewees based on their countries of origin initially, focusing mainly on obtaining representation in terms of discipline, gender, and rank. Tables 1 and 2 show the breakdown of the sample by country of origin and by discipline.

The decision to focus on Asian-born faculty in this article emerged from interviewees' discussion of their strategies for international academic collaboration. While the time spent overseas varied widely, participants referred to their countries of origin as "home", mainly defined as a place where they grew up, and, more importantly, where parents and siblings remain. As such, we also refer to the "home country" in this way, while recognizing that scholars have argued over how this term is defined.[4] We asked our interviewees about their decision to come to Singapore, their work experience within Singapore universities, and their research activities both within and outside Singapore. We also asked them whether they interacted with scholars who were based in their home countries, and what kind of work or projects they did together. We defined such "work" in terms of more formal arrangements like research collaboration and co-authoring papers, as well as conference organizing and delivering guest lectures. In general, all our interviewees actively collaborated with scholars overseas, often with former colleagues and classmates whom they met during their graduate and/or post-doctorate years. Given that all of our interviewees obtained their doctoral degrees in the West, most of their networks remained situated in the US and Europe. When it came to interactions with scholars within their home-countries, Asian-born interviewees expressed that while they

TABLE 1

INTERVIEW PARTICIPANTS' COUNTRIES OF ORIGIN

Country of Origin	
China	13
India	11
Malaysia	4
Taiwan	4
Philippines	3
Thailand	3
Japan	3
Indonesia	2
Korea	1
Vietnam	1
Total:	45

TABLE 2

INTERVIEW PARTICIPANTS' ACADEMIC DISCIPLINES

Discipline	
STEM	22
Social Science	23
Total:	45

were happy to organize events or engage in teaching engagements in their home countries, they were less keen on collaborating on research projects and writing manuscripts. Out of the 45 migrant academics we interviewed, only eight said that they actively engage in research collaboration with home country counterparts (see Table 3). In contrast, 40 out of the 45 said they still collaborate with colleagues in the countries where they did their PhDs (all in the US and Western Europe). Our findings section elaborates on some possible factors that discourage such collaboration.

Therefore, while scholars have used "brain circulation" to describe a range of activities, this project looks specifically at research collaborations or the sharing of knowledge and resources with the end goal of co-authoring articles for publication. We do not intend to say that other forms of academic interaction are not valuable. Rather, we chose to focus on activities that our interviewees considered less appealing or more difficult to achieve. All interviews were transcribed and analysed using NVivo, a qualitative software.

Our study is limited in that we base our analysis on broad disciplinary categories of STEM and the Social Sciences. Scholars have rightly argued for the need to understand academic mobility in terms of particular disciplines, given the different epistemic and political contexts that shape different areas of study (Acker, 2005). However, in this paper, we focus on how institutional cultures and politics of promotion can deter academic research collaboration across fields, even if these challenges manifest in different ways depending on our participants' disciplines. Of course, such differences exist and we work to highlight these divergences in our findings section. We also acknowledge that Singapore's history and institutional environment is unique and this makes the situations we describe in this article exceptional in some cases. However, we believe that there are some aspects of Singapore's higher education system which can be generalized with other aspiring centres seeking to become world-class education hubs. This includes the Singapore state's investments in research and teaching, as well as its strategies in recruiting foreign faculty.

TABLE 3

INTERVIEW PARTICIPANTS ENGAGED IN RESEARCH COLLABORATION WITH HOME COUNTRY COUNTERPARTS

Interviewee	Discipline	Home Country	Rank
1	STEM	China	Tenured
2	STEM	China	Tenured
3	STEM	China	Tenured
4	STEM	China	Tenured
5	STEM	Vietnam	Tenured
6	STEM	India	Untenured
7	Social Science	India	Untenured
8	Social Science	Japan	Untenured

This article also does not fully explore migrant academics' individual identities and how this might shape the way they view their role in the development of their countries of origin. Rather, we focus on how they choose to engage with professional counterparts in their home countries, regardless of whether they still feel connected to their home countries or not. We also acknowledge that research collaboration between Singapore and its Asian neighbors can also be led by faculty members who are not from these countries. These scholars may have established ties to other Asian universities in other ways, which are beyond the scope of this article.

WORKING WITHIN THE ASPIRING CENTRE: POTENTIALS FOR COLLABORATION

Perhaps reflective of Singapore's status as an aspiring centre of knowledge production, our interviewees regarded Singapore universities as an ideal "middle ground". Working within these institutions allowed them to continue the kind of research they had began as graduate students, while remaining close to aging parents and siblings in nearby countries. Migrating to Singapore, then, allowed our interviewees to pursue their careers in a highly ranked and well-resourced institution, even while they were away from traditional centres of knowledge production in the West (Wang et al., 2017).

As such, Singapore provided interviewees with an opportunity to engage in two types of international collaboration. As an aspiring centre, Singapore's academic partnerships, generous research funds, and global reputation allowed faculty to maintain contact with centres of knowledge production in the West – with many actively participating in large academic conferences and publishing in the main journals of their fields. At the same time, Singapore's location in the region provided Asian-born faculty with opportunities to engage with local counterparts in their countries of origin. Most interviewees in this study had friends and former classmates who continued to work in higher education institutions within their home communities. In places like China and South Korea, increased support for research in STEM fields have improved local facilities and structures for research, as well as promoting research work among local scholars and students. Collaboration with scholars in these countries then provided opportunities to tap into additional resources, in terms of both manpower and research funds. One Associate Professor explained that it was her collaboration with two junior scholars in China which compensated for the absence of a graduate programme in her current department.

> Okay, so one professor, before he became a professor, he spent two years with me as a post doctor. I worked together with his team and he has a very big team now. He has five PhD students, a few master's students, and a lot of undergrad student. The other collaborator, I met him in a conference in China. He invited me to pay a visit in Shanghai. He has student and I help to supervise the student ... We are able to publish a lot. That's why I still can survive in even though I don't have my own PhD student. So I use these two professors' student most of the time.

As compared with their STEM counterparts, interviewees in the social sciences did not need as much manpower or funds to run their projects. However, they tended to do research on topics that involved their home countries and working with colleagues rooted in local contexts was an ideal way to keep up with issues within their areas of interest. Scholars within their home countries also had easier access to the communities that our interviewees studied. As noted by one Assistant Professor from Japan,

> I wanted to move closer to Japan. I started doing more policy-oriented work and my research is about Japan so I wanted to start working with, you know, people in Japan, academics and NGOs. I

> thought about Australia but it was a bit too far away from Japan, and you know, Singapore, it's close enough to Japan.

Other academics felt that collaboration with colleagues in their home countries would allow them to broaden their research areas and provide better opportunities to gather data. One Assistant Professor from China, a social scientist, explained that this would be especially advantageous for her work, which required large samples of survey respondents,

> If I have more collaboration with China, my productivity will actually be higher. Getting participants is so hard in Singapore but in China, it's so easy (laughs). They can just collect all the data, few thousands in one day or one week ... their population is very huge and I think that [the consent requirements] in China is not as strict as Singapore.

Other interviewees echoed this sentiment, arguing that it would be difficult if all academics in Singapore limited their data-gathering within the nation's boundaries. Aside from Singapore's small population, its unique history also made it an exceptional case – one that is sometimes difficult to market to academic journals seeking more general theoretical contributions building from larger data samples. Working with home country institutions was an opportunity for comparative work, or at least access to a larger population of research participants.

Despite recognizing the advantages of working with academics and institutions in their home countries, 37 out of 45 interviewees across disciplines admitted that they did not engage in such forms of collaboration. While they travelled to home regularly, few of these visits translated to meaningful exchanges in terms of joint research projects and co-authored papers. Some of the reasons for their limited academic engagement reflected issues discussed in previous studies: repressive government policies, local university politics, and a lack of long-term support for "cutting edge" research. In this article, we highlight how differences in the cultures of knowledge production also shape migrant faculty's engagement with colleagues and institutions within their home countries.

EPISTEMIC DIFFERENCES: REDEFINING THE PURPOSE OF RESEARCH

In seeking home country collaboration, one challenge that migrant faculty often encountered was finding local colleagues who shared similar "priorities" in defining the objectives of their research work. Interviewees shared that, while there was no shortage of local scholars willing to collaborate with them, they often had different ideas of what the outcomes of their research should be. Such disjunctures became more salient the further a collaborating institution was on the "periphery" of knowledge production. Unsurprisingly, the costs and benefits of collaborating with home country counterparts often depended on a nation's emphasis on tertiary education and the type of research culture that could be achieved with the available institutional support (or lack of it). Faculty within highly ranked universities in wealthier countries like China and Japan had more social capital and research funding to pursue academic collaboration with their counterparts in Singapore. In contrast, even the best universities in places like the Philippines and Indonesia struggled to establish a research culture that would match Singaporean universities.

Interviewees also noted that few of their home country institutions required academics to establish themselves internationally – a situation made more apparent by a general lack of access to international journals. Within Southeast Asian countries such as the Philippines, Indonesia, and Thailand, academics tended to focus mainly on domestic issues, without consulting the latest publications in their research areas. This issue was especially problematic for interviewees in STEM fields, given the rapid pace of new developments within their disciplines. One professor from

Malaysia shared that, while scientific research produced by Malaysia-based scholars remained relevant to local problems, such studies were too "insular" and out of date with current scientific trends. An Associate Professor from Vietnam echoed this observation, noting that due to a lack of access to scientific journals, Vietnam-based academics were often getting "stuck" in projects that other scientists had already done. He explained:

> They make compounds that nobody needs. They aren't aware that all these things have been done. I mean [one group] was doing this anti-tumor compound that thousands of scientists have already investigated. What you can do there? You are basically competing with all these big groups who have so much experience there. As a newcomer, you don't join them. So that's why they need my assistance – I suggest them something to do, share some of the ideas to them.

STEM fields still benefited from Singapore government funds that encouraged partnerships with other Asian universities such as Tsinghua University in China or Kyoto University in Japan. However, institutions with such capabilities are less common in Asia than in the West, and the majority of universities within the region are not actively engaged in academic research driven towards high impact publications.

The Social Science faculty echoed similar issues. One Assistant Professor from India recalled a previous collaboration with a colleague in India, whose research approach was more driven towards solving problems for practitioners on the ground:

> Actually it's easy to build the collaboration but the thing is, it's hard to translate into a tangible project with *Singapore values* [emphasis added] ... You know, the kind of journals in which [university administrators] expects us to publish is pretty high in terms of the standard. But [colleagues in India], they don't care. This colleague of mine, she is the dean of the Business School there. She is very much into how relevant is my research to managers. Given so many companies, she would pick some of their problems, convert that into a research statement, and then work on it. That is the kind of approach she had. Many of these times, that is not publishable. We learn a lot but it doesn't eventually turn into a paper.

Interviewees interpreted such differences as a reflection of the expectations that their home country counterparts faced from both the university and government agencies within their countries of origin. On the one hand, limited state funding meant that academic research should have a clear and immediate benefit to society, beyond academic publications. The Assistant Professor who shared the previous quote clarified that she valued the more "applied" research that her colleague did because it made more of an impact on the industrial settings she studied. However, she felt that continuing with such collaborations required her to "play a different game" from the more theoretical work she was trained to do in her PhD. As such, she chose not to develop the collaboration further, saying that she did not want to force her local colleagues to adapt her standards for research and "do things they don't want to do."

In many cases, such limitations did not adversely affect local academics' careers within their institutions. As noted by one Assistant Professor from Korea, most of his former professors in Korea published mostly in Korean journals and often did not understand the long process of getting work published in a highly ranked journal. He attributed such differences to a "strong local culture" in Korean academia that made it harder for him to engage with local colleagues. In this sense, he found it easier to collaborate with his professors and former graduate school friends in the US. He noted, "Singapore to Korea, geographically it's a nearby, but still probably for me it's a [bigger step]."

As such, the migrant academics who did engage in collaboration within their home countries often relied on "like-minded" colleagues – scholars who also obtained their degrees in universities

in the US or UK and were eager to continue their academic practices as they had been trained. This was the case for interviewees in both STEM and Social Sciences. One Assistant Professor from the Philippines admitted that he only collaborates with one faculty member in his alma mater, a fellow Fulbright scholar who also obtained her degree from an American university. "There are very few people who do media research in the Philippines," he explained. "The culture itself is not very conducive for research." Another Assistant Professor from India has maintained an active collaboration with a former graduate school classmate who returned to India after obtaining his degree. "It really depends on the person, right. I have known Dr. K for ten years now so I can work with him. We have the same work ethic and we complement each other."

In many ways, migrant academics' search for like-minded colleagues meant looking for home country counterparts who shared the same research goals and priorities, despite the existing differences in the way scholars in their home countries prioritized research output. As such, establishing productive collaboration networks largely depended on individual academics' personal contacts and their motivations to engage with home country counterparts in the first place. Interviewees in STEM fields were more motivated to look for potential collaborators who could help provide alternative sources of funding and labour to run their research projects (e.g. China and South Korea). In contrast, interviewees in the Social Sciences saw the search for potential collaborators as a drain on their time and preferred to do their research alone, given that some of their work did not require as much resources or manpower as that of their colleagues in STEM fields.

In lamenting the academic "culture" of their home country institutions, migrant faculty highlighted the difference between the type of work they did as PhD graduates trained in the West and the more locally-oriented scholarship within their home countries. Migrant academics in this study were driven towards publications in highly ranked journals and pursued topics that they felt were theoretically relevant in their general academic fields. With the exception of the few highly ranked institutions in the region, our interviewees' home country counterparts focused on problem-based research within local contexts and not all were willing to go through the long process of publishing in top international journals. These epistemic differences thus discouraged intellectual circulation from Singapore to migrant academics' home countries, with few migrant academics willing to "translate" their research objectives in line with the values and priorities of local knowledge production.

However, epistemic disjunctures were not the only challenges to collaborations with home country institutions. The following section discusses how current policies for promotion and tenure within Singapore universities, which inadvertently discourage academic collaboration between Singapore and surrounding countries.

PRESSURES OF PROMOTION: RECOGNIZING ACADEMIC WORK

While Singapore's geographic location allowed Asian-born academics to move closer to their home countries, Singapore universities, like other "aspiring centres" in the global knowledge economy, adapted the academic norms and standards of prestigious institutions in the West (Kim, 2010: 588). Eager to emulate established centres in the global space of academia, Singapore institutions looked towards highly ranked institutions in the West in assessing the work of their faculty, requiring publications in Western journals and university presses, and promoting links to well-known universities based in the US and UK. University administrators also implemented a tenure and promotion system based on their interpretation of the requirements of American higher education institutions, where junior faculty were expected to demonstrate substantial capability in research and teaching within a time period of six to seven years. Like many other universities, international publications carried a heavy weight, and individuals unable to publish enough before going up for tenure did not have their contracts renewed or extended.

This academic environment and structure undermined brain circulation in two ways. First, untenured migrant faculty, regardless of discipline, were less inclined to do research in "new" areas or projects that would not immediately lead to journal publications. Such "risky" endeavors included exploring research collaboration with their home country institutions, where working with local scholars might require more time and effort. For one Associate Professor from China, this extra work was the reason why he held off from collaborating with Chinese colleagues in his engineering field until he obtained tenure in 2014. He explained:

> I have quite a lot of friends in China ... They always remind me to be there, to attend seminars or collaborate with them. But before I get my tenure, I actually am not very active in this one because I don't see how it adds any value to my CV or to my case.
>
> I don't want to spread too thin because it will actually damage your development here. You have to spend a lot of time to go to China, you have to supervise students, you have to do a lot of things ... Collaboration can help you get more resources, you can get more publications and do more interesting things. But before this year, I was not very active on that.

As noted by this interviewee, home country collaborations could provide many benefits such as additional resources and opportunities to learn new things. Yet, given the limited time to build their CVs for tenure, untenured faculty felt it was more strategic either to focus on projects rooted in Singapore or continue publishing with their PhD and post-doctorate advisers.

Untenured faculty members were also well aware that by the time they came up for promotion, university administrators were likely to send their dossiers to anonymous reviewers based in Western institutions – traditional centres of knowledge production. As such, there was more incentive to network or collaborate with colleagues in American or British institutions or what some interviewees had dubbed "mainstream" academia. As explained by an Associate Professor in the social sciences, who originated from India,

> You have to keep in touch with as many people as you can, because eventually they require six people to write letters for you. These are people outside. It's not going to be people here. They're looking for people outside, so you really have to be keeping in touch with people in the US, people in Europe.

As such, attaining tenure provided migrant academics with more space to explore projects with home country institutions. Tenure took away the pressure to publish and provided academics with more time to finally begin more "exploratory" projects. One Associate Professor from Vietnam shared that he often gets emails from Vietnamese scholars seeking advice or possible opportunities for collaboration. None of these invitations provide much benefit for his academic career, yet his tenured status gives him the space to "help" local counterparts develop scientific projects. He shared:

> There was this woman from [Vietnamese university] who applied for [a post-doc position]. It was clear to me that she will never become my post-doc, because of the lack of qualification. But then I applied for some sort of collaboration funds for maybe just 5,000 dollars. I said, I invite you to come to my lab to do something. You bring your compounds and then we see what we can do ... It's for them, actually. It's not for me. Maybe the only thing I get out of it is a few travels to Vietnam.

Yet for some migrant academics, tenure does not necessarily ensure freedom from other university expectations. Similar to other universities, faculty in Singapore were also encouraged to bring in

research money for their respective departments – a requirement that is often not possible with overseas funding. As such, migrant academics were less likely to collaborate with home country counterparts even if the project was likely to translate to good publications. One Associate Professor from China explained,

> The university has to recognize the funding. Does the money trail go into the university? Normally, research money cannot cross borders. That's the rules normally, lah. So even if I get the money from China, I have to spend in China. I have to recruit students in China using that money. The student can do something for me – I mean, I can write a paper using my [Singapore] affiliation. For the university, I don't think they will see it as a benefit.

The expectations outlined in this section indicate that while there may be migrant academics eager to explore collaborative work with scholars and institutions within their home countries, policies and expectations within their host universities make such work a risky endeavour. Interviewees without tenure were more likely to limit such activities until they had more job security. Meanwhile, those with tenure often weighed the benefits of such collaboration against the other expectations of senior faculty such as the need to bring in grants and take on more administrative tasks. Whether intentional or not, these policies then encourage migrant academics to maintain ties to their colleagues in the *West,* where collaborative links are seen as more likely to lead to higher visibility in "mainstream" academia.

CONCLUSION

Our findings show how the movement of Asian born faculty towards aspiring higher education centres such as Singapore provide an opportunity for academic collaboration with higher education institutions within the region. Migrant academics in this study frequently move to and from their countries of origin, staying in contact with counterparts within local universities and research sites. Paul and Long (2016) argue that this is likely to promote more collaboration within the region – a trend already evident in the number of papers co-authored by Singapore-based faculty and scholars based in countries such as China, Japan, India, and South Korea (Wang et al., 2017). It is important to note that while tenure and promotion within Singapore universities are largely patterned against the standards of prestigious institutions in the US, such policies do not indicate a deliberate attempt to discourage brain circulation within the region. In fact, state funding agencies have increasingly encouraged Singapore-based academics to conduct research with a focus on Asia, providing funding opportunities that would otherwise be more difficult to attain in the West. Migrant academics in this study also recognized the benefits that collaborative projects with home country counterparts would bring, citing the importance of sharing resources, networking with scholars on the ground, and doing more comparative research.

This article, however, also reveals the stickiness or frictions (Ackers, 2005) that can impede positive brain circulation among migrant academics. In particular, we highlight how opportunities for academic collaboration are experienced unevenly, largely dependent on scholars' disciplines as well as the status of home country institutions in the global hierarchy of knowledge production. As part of an aspiring centre seeking to climb world rankings, Singapore universities must invest in delivering high-impact research in traditional outlets of scholarship such as highly ranked journals and university presses. Education scholars have shown how such indicators of scholarship favour institutions based in the West, where English is the medium of communication and a majority of journal editors and reviewers are based (Jons and Hoyler, 2013; Marginson and van der Wende, 2007; Stack, 2013). We argue that such pressures promote epistemic and political cultures within Singapore universities which undermine migrant faculty's desire to collaborate with home country

counterparts, prompting them to devote time and energy towards developing links to established centres of knowledge in the West.

At the same time, this article raises the question of how we must benchmark successful academic collaboration. To date, policymakers and institutions have tended to view collaboration in terms of co-authored publications (both journals and books) – a measure that only shows a partial view of how researchers and scholars work with each other (Katz and Martin, 1997). Perhaps in understanding more deeply how academics work productively with each other, we can seek to better realize the challenges and barriers to such collaborative relationships. This article explores epistemic cultures as one specific challenge, while recognizing that many others may exist, depending on discipline, institution, or country.

Lastly, this article does not intend to depict academics within migrants' home countries as unable to produce important knowledge and research. As noted earlier, growing universities in places like China have led to more Asia-based scholars driven towards producing high impact research. Interviewees in this study also emphasized the value of their local colleagues' research, the outcomes of which often have more immediate implications for pressing social issues. Rather, this article emphasizes how geographic location and frequent mobility are not enough to ensure the more productive circulation of migrant academics within the region. In a global hierarchy of higher education institutions, epistemic differences and conflicting assessments of academic work create a gap between migrant academics and their home country counterparts that many find difficult to overcome. In many ways, these limitations demonstrate how the powerful status of highly ranked Western institutions is reinforced, despite the development of aspiring centres of higher education such as Singapore. Promoting brain circulation and active collaboration networks between Singapore and its neighbouring countries means allowing academics to adopt different epistemic values for research and recognizing research work beyond the usual standards that have defined academic standards for tenure in well-known and established US institutions. Such issues remain understudied in the current discussions surrounding the mobility of academics and knowledge workers, as do their implications for their countries of origin.

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NOTES

1. The authors collected this data as part of the larger project on the impact and migration decisions of international faculty in Singapore. Aside from qualitative interviews, the project included a bibliometric analysis of publications by Singapore-based academics, and an online survey distributed to all tenured and tenure-track faculty working within the National University of Singapore, Nanyang Technological University, and Singapore Management University.
2. These areas of study are based on the Web of Science categories associated with the journals where these articles were published.
3. The research team interviewed a total of 80 foreign academics currently working in Singapore. Aside from the interviews included in this study, research participants originated from countries such as the US, UK, France, Germany, and Spain.
4. Migration scholars have studied issues of integration, belonging, and identity, using a more critical analysis of what the "home country" means to different immigrant groups (see Ahmed, 1999; Espiritu, 2003; Ralph, 2009)

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