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Talent flowscapes and circular mobility in a Belt and Road (BRI) perspective - Global talent flows revisited

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ABSTRACT

This article brings the role of talent migration to the discussion of China's Belt and Road Initiative (BRI) mainly focusing on academic talents. We explore the foundation for BRI's talent development as a long-term and gradual process building on policies dating back to China's opening in 1978. China's opening saw an increased number of individuals who could improve their skills, knowledge, and network from China globally or inside China from elsewhere on the globe. These global experiences have resulted in the Chinese government, companies, and institutions' necessity to compete for talent or human resources on a global "market". We interpret the call for establishing people-to-people connections within the BRI as an intensification of China's existing talent strategy. However, at a micro-level, we continue to find that international talents and returned migrants perceive themselves as outsiders which hinders China's talent attraction policies and results in a circular movement of academic talents to and from China

1. People to people connections along the Belt and Road Initiative

China is an emerging global actor that is keen on appearing as a benevolent power but at the same time is an assertive one. Within the plethora of strategic approaches to further Chinese leadership at the regional and global level, the Belt and Road Initiative (BRI) stands out. The initiative, also known as the New Silk Road, has since President Xi Jinping initiated it in 2013 been part of changing China's role in sending and receiving talents. What is more, the initiative is intensifying the Chinese opening up and furthering China's integration into the world economy (*The British Chamber of Commerce in China, 2019*). However, as a collaborative project, it sets out to establish new opportunities through connectivity and shared economic and social activities (*Kuah, 2018*). Although BRI is still difficult to pin down, it seems to be an initiative that is altering talent flows and establishing both new and different conditions for research and higher education in China as well as the world as it intensifies prior political changes (*Kirby and Van Der Wende, 2019; d'Hooghe, 2021; Schneider, 2021*).

While the BRI is still beginning to take shape, international talent competition has long established itself as an essential part of the global labour market and as a result talent mobility has become critical to our understanding of globalisation (*Shachar, 2006; Solimano, 2008, 2010; Shachar and Hirschl, 2015; Kerr et al., 2016; Kerr, 2018; Liu, 2019*). The role of attracting and retaining global talents has likewise become

an essential part of the policy responsible for developing Chinese competitiveness and is increasingly incorporated into the Chinese plans and strategies (*Zweig and Wang, 2013; Zweig, Kang and Wang, 2020*). The turn in the direction of talent attraction occurs as China seeks to transform its economy from a labour-intensive manufacturing-based economy towards a knowledge- and innovation-based economy (*Shachar and Hirschl, 2013; Zweig and Wang, 2013; S. Harvey, 2014; Zweig, Kang and Wang, 2020*).

This article aims to investigate talent mobility in China by using a two-folded approach. We first aim to understand if China's BRI intensifies internationalisation in the STEM sciences at the macro-level. Understanding the development of global patterns in science and technology is relevant to understanding education and is essential information regarding entrepreneurship and innovation. However, as pointed out by *Liu and Huang (2018)*, most research on knowledge-intensive models and the capabilities of institutions such as universities have been conducted in developed nations. Therefore, this is an intensive knowledge gap which needs to be addressed, as China is growing increasingly significant and increasing. With subsequent problems arising surrounding individuals with international experiences, such as talent recruitment, retention and resilience (*Liu, 2020*). Additionally, we aim to add a second component to our study by addressing these issues at the micro-level with longitudinal interview data and questions revolving around the social relations that affect Chinese returnees' and international researchers

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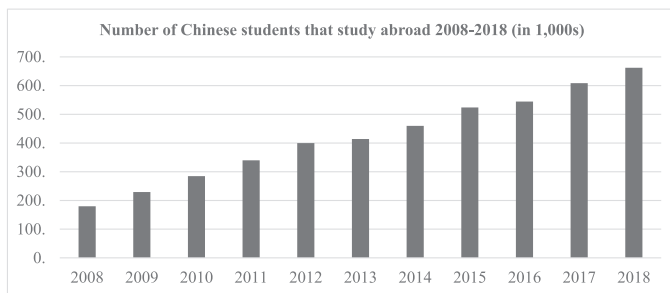


Fig. 1. Number of Chinese Students that study abroad 2008-2018.

in China alike? We ask these questions to understand why a significant number of our respondents leave China once again and return to an international research environment.

Although there is now a rich literature on talent and talent management, a specific definition is difficult to pin down. William R Kerr (2018) points out that talent while being easy to recognise in its full flow is particularly tricky to define, as talent can incorporate differences such as Nobel Prize winners, musicians like Bob Dylan or elite sports stars. Therefore, it is necessary to consider talent as a spectrum, rather than a binary trait if one genuinely wants to cover its terrain. While education might be a good indicator of talent, it cannot capture the full complexity singlehanded (Kerr, 2018, pp. 19–20). This vague definition echoes the description put forth in *The War for Talent*, which coins talent as the sum of an individual's capabilities. Thereby talent comes to include a diversity of inherent gifts, skills, knowledge, experiences, drive, attitudes and even capacities to learn (Michaels, Handfield-Jones and Axelrod, 2001, p. xii). Andrés Solimano (Solimano, 2008, 2010) establishes different talent categories: directly productive talent, academic talent, talent in social sectors and talents in cultural industries. Typical for these categories is that they all become part of a talented elite that is particularly mobile (Solimano, 2010, p. 160). As we explore the political call for academic talent mobility in relation to BRI, we continue with Solimano's definition of academic talent and its migration patterns.

This includes the mobility of scientists, scholars, and international students. These are individuals that often work or study in universities, research centres, and think tanks and are devoted to the production and/or acquisition of scientific and scholarly knowledge that may be eventually translated in commercially valuable products and inputs (Solimano, 2008, p. 4).

This definition is also applied by Huiyao Wang and You Bao (Wang and Bao, 2015) who stress that these talents have a crucial role in China, whether they be Chinese returnees or foreign talents. They emphasise that several talent attractions schemes now exist for both groups, with the most notable being the thousands talent program implemented in 2008 and expanded to include foreign talent in 2010. However, while the migration flows increasingly goes both ways, China is still amongst the world's leading exporters of international talent and still a net exporter rather than an importer of talent. Fig. 1 below illustrates the increase in outward student mobility. According to the ministry of education in China, in 2017, 1,454,100 students studied at overseas universities. While the most popular study destinations according to the Chinese Ministry of Education are in the US and Western Europe, Belt and Road countries have experienced an above-average growth of Chinese students seeking education abroad (Ministry of Education, 2018). The observed differentiation is similar to the Center for China and Globalization (CCG, 2019) who likewise find that Belt and Road countries are becoming increasingly popular destinations for Chinese students when they seek to go overseas to study. This trend seems to strengthen the connection between China and European countries who benefit from the diversification (CCG, 2019).

Fig. 1. The motivations for studying abroad include such considerations as having an overseas degree reflect a global insight and better

language skills, this, in turn, strengthens the perceived competitiveness of returned migrants on the Chinese skilled labour market. As a result, developed countries and regions, particularly the English-speaking areas, are still the most popular destinations for Chinese students abroad. However, this seems to diversify as most students are self-funded and non-English speaking countries charge less in tuition fees (National Bureau of Statistics of China., 2018).

Several scholars have demonstrated that developing an environment which allowed students to go abroad and potentially to return later have emerged over an extended period beginning in 1978 (Cao, Suttmeier and Simon, 2006; Simon and Cao, 2009; Cao, 2012; Wang, 2013; Zweig and Wang, 2013; Wang and Miao, 2016; Miao and Wang, 2017; Zweig, Kang and Wang, 2020). We will return to their results as we deem the historical development essential to understand talent migration's contemporary development. From there, we will engage with documents and policies enacted after implementing the BRI to highlight macro-level developments that seem to welcome talent migration. After which we enter into a discussion of micro-level experiences based on longitudinal data from semi-structured interviews with 27 return migrants gathered biannually from 2013 to 2019 all recipients of the thousand talent program. However, first, we will introduce our theoretical framework used to analyse these data.

2. Relational Sociology, Flowscapes and Guanxi networks

Relational sociology offers dynamic, processual and continues analytical tools to the study of social reality. By viewing both macro-and microscopic development as transactions occurring withing and between changing figurations (Emirbayer, 1997), relational sociology establishes a strong basis for studying talent flows. It does so by focusing on long-term macro-level structures that emerge from intentional and unintentional causes of actions on the one hand, and the role of the individuals and the networks or minor figurations that these individuals partake in the other (Baur and Ernst, 2011, p. 119). At the core of the relational analysis, is an understanding of humans and human actions in pluralities. Both human beings and human actions are, therefore, products of the relationships they are engaged within. A social study of human actions should concern itself with the relationships they establish and the web of interdependencies, thoughts, activities, and inactions that cluster the individuals together in groups or figurations (Kaspersen and Gabriel, 2008; Elias, 2012, p. 126). In this talent perspective, these configurations include nations states, provinces, cities, universities and research institutions, and the individual migrants circulating in the global labour market for specialists.

The processual approach within relational sociology resonates well with Appadurai's concept of flowscapes. Flowscapes is likewise a dynamic and processual concept describing cultural flows in a globalised world. Appadurai categorised flowscapes within five core scapes, ethnoscapes, technoscapes, finanscapes, mediascapes and ideoscapes (Appadurai, 1990). From a talent perspective, it is noteworthy to consider how technological development, according to Appadurai is increasingly driven by a complicated relationship of financing, politics and highly skilled, and low skilled labour (Appadurai, 1990; Heyman and Campbell, 2009). However, like Elias and Emirbayer stresses a blind development, Appadurai emphasises chaos theory as the best explanation for the development of these different flows. He argues that by focusing on flows, it is possible to reveal that "most human societies have always been in interactive relations with others, forming spheres of exchange and circulation. Thus, the images of social stability, impermeable boundaries, and natural divisions between ethnic groups, polities, and communities [...] have been put under sharp scrutiny (Appadurai, 2015, p. 234)". We intend to apply Appadurai's concepts to understand the macro development and the conceptual ideas that change due to China's active recruitment on a global market for human capital.

However, to understand talent flows at the micro-level, we turn to the network-based concepts. This choice is supported by literature that

points out that China, as a guanxi-based society, has numerous indirect barriers to talent mobility at the micro-level (Cao, 2008; Miao and Wang, 2017; Bian, 2018; Jensen, 2019). Guanxi refers to networks, relationships or contacts, concepts that can translate to social capital. Bian finds that guanxi is of significant importance in Chinese society, particularly in the Chinese labour market when there is a high degree of institutional uncertainty (Bian, 2018). He points out that guanxi ties have multiple sides to them. They are resourceful connections; however, they are simultaneously embedded in human affection and are sentimental ties. Guanxi ties are, therefore, often found in relationships based on trust and kinship or pseudo-kinship. Guanxi ties become based and enhanced on a kind of particularism that takes shape through favours. However, they also have a dark side as they become informal contracts necessary to lubricate processes and free project funding (Bian, 2018). Here, different network concepts, such as the man-know-man network or ravabet networks, share many of the same features as guanxi networks. In their article, Njoku and Cooney (2020), for instance, explore a guanxi type network they define as the man-know-man network and compares these to other types of relations, such as nepotism, quid-pro-quo (something for something) and a country of origin as a source of business opportunities (COSBO) network. They point out that the man-knows-man network or guanxi in Chinese, share components from each of these different types of networks.

Nepotism and man-knows-man networks share the element of familiarity. Thus the “charity or selection” begins at home with the expectation of getting something in return. Likewise, the man-knows-man network share elements of the quid pro quo, where likeminded people can reach out to one another in return for favours. Finally, the authors point out that the man knows man network shares elements with the COSBO model, which is that sharing a country of origin becomes a source of business opportunity thereby providing shorter paths to business and less painful approaches to startups. In this manner, both guanxi and man-knows-man networks share components of ravabet networks (Rezaei et al., 2018), in that they can be vital for passing information from one source to another. As the network can be applied to pass on information, having a strong position in the network and access to the information becomes vital in order to prosper within the system, and those on the margins of the networks must rely on others to pass information to them (Rezaei et al., 2018). While both the Guanxi network (Bian, 2018), the man-know-man networks (Njoku and Cooney, 2020) and ravabet networks (Rezaei et al., 2018) contains positive elements, they can also be a hindrance or a barrier for outsiders who does not pose the necessary social capital or good guanxi. We will explore this further at the end of the paper’s analysis.

3. A historical overview of talent migration in China

Academic and scientific development has followed the modern Chinese development in most ways, especially the Chinese economy’s development. From a talent perspective, China lacked behind the developed countries following the cultural revolution, which left the country short of a generation of scientists and technicians (Cao, 2008; Thøgersen, 2016). However, with the reforms in 1978, the state began to sponsor students and researchers going abroad and relax the restrictions on mobility. However, this created a problem as too few were returning to China. An issue that only increased with Tiananmen Square’s crackdown (Simon and Cao, 2009, pp. 212–218). As the crackdown resulted in fewer returnees, the immediate response was to implement restrictions on allowing students to travel abroad (Simon and Cao, 2009, pp. 218–219; Zweig and Wang, 2013; Thøgersen, 2016).

After 1992 and the implementation of the socialist market reforms there was once again a policy change, which aimed to “support studies abroad, encourage [graduates] to come back to China, and grant them the freedom to come and go” (Thøgersen, 2016, p. 300), after which internationalisation began to intensify once more. More than just promoting academic leaders’ cultivation, Chinese scholars’ encouragement

overseas to return became the main objectives of high-level talent programs. The programs mainly targeted academics under 45 to work in science and technology (Zhu, 2019).

The new role of science and technology as a cornerstone in the economy and the nation became cemented in the early 2000th. Amongst other developments, the implementation of the Medium and Long-term Science and Technology Development Plan, the Chinese Communist Party (CCP) adaptation of talent development into its constitution and the CCPs establishment of a Central Leading Group for Coordinating Talent Work, as well as the inclusion of a section on talent management in the 11th Five-year Plan (FYP), stand out (2006-2010). These activities have all emphasised a transition towards a knowledge economy, in which China would compete for human capital on a global labour market rather than foreign direct investment (Cao, Suttmeier and Simon, 2006, p. 40; The State Council The People’s Republic of China, 2006; Wang, 2010, 2011). It is worth to add that talent management have continued to feature prominently in both the 12th and the 13th Five-year Plans, which illustrate a continuation of the initiated changes.

The implementation of these policies testifies to a remarkable transition. However, added to the policies was a significant number of national, provincial and city-level talent programs, aiming to attract talent to China. The most noteworthy of these is the 1,000 talents plan (1000plan.org, 2018) that should attract overseas talent and enhance the competitiveness of talent intensive sectors in China, such as sports institutions, universities and research centres, and the recruitment of innovators and entrepreneurs. Although covered by an element of secrecy, the 1000 talent plan seems to have been the most successful program a attracting talents from overseas (Zweig, Kang and Wang, 2020). In 2010 it was extended to include foreign talent and the Chinese diaspora, thereby expanding Chinese talent attraction (Miao and Wang, 2017).

In the same year, 2010, the Central Committee of the CCP and the State Council implemented the National Medium and Long-Term Plan for the Development of Talent (2010-2020). The talent plan was issued by two of the most influential political bodies in China, and it was done so under great fanfare and in the presence of both President Hu Jintao, then vice president Xi Jinping, the premier and all eight members of the politburo. “During the meeting, President Hu Jintao stated that “talent is the most important resource and it is a key issue that concerns the development of the Party and country” (Wang, 2010).

4. Method

The study utilises a qualitative-qualitative mixed-method approach, inspired by Morse and Neihaus (2009) to bridge the macro, micro-level gap between on the one hand a political development including the signing of memorandums of understanding, political documents and institutional partnerships and alliances and on the other hand the lives of international individuals and their experiences. The basis for the remaining part of the analysis is a collection of Belt and Road-related documents presented in Table 1. The documents have been read and re-read with the theoretical concepts in mind. This method has enabled us to build categories that can cross different materials (Altheide, 1987; Silverman, 2009; Bryman, 2012). The software Nvivo has been applied to coordinate the documents’ thematic coding to establish a rigorous reading and re-reading of each text (Silver and Lewins, 2014). By utilising the Nvivo software, it was possible to cut across different documents and highlight how they address internationals, foreigners and talents in general. The study has focused its attention on documents written in English, which all address the BRI. Selecting based on language skews the collected documents towards the macro level and the international arena in which these documents are produced. Finally, the study includes a single exception to this rule, as the 13th Five-year Plan for S&T (The State Council of the People’s Republic of China, 2016) however, this document was included as it is the first of its kind to address the BRI and thereby is too significant to leave out.

Table 1
BRI documents.

Title on document	Published	The main point regarding talent mobility
13th Five-year Plan (CCCPC, 2016)	2016	-China will treat talented people as the number one support for the development -China will work to become one of the most talent competitive countries in the world
13th Five-year Plan for S&T (The State Council of the People's Republic of China, 2016)	2016	-Greater emphasis on attracting talents, talents become regarded as the drivers of innovative development and as vital for China's future economy
Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road (National Development and Reform Commission, 2015)	2015	-Establishes people-to-people bonds as an essential part of collaborating -Calls for scientific an academic collaboration, between research centres, institutions and individuals. -Establishing talent mobility as necessary for bi and multilateral collaboration as well as innovation.
Education Action Plan for the Belt and Road Initiative- Belt and Road Portal (Belt and Road Portal, 2016)	2016	-Developing people-to-people ties through education and shared experiences. - Cultivating talent in China and across borders. - Boost the joint development of education in the region
List of deliverables of Belt and Road forum Belt (Belt and Road Portal, 2017)	2017	-Calls for the establishment of joint research and exchange of scientists along the BRI. -China commits to educating foreign scientists and engineers. -China commits to hosting short term stays for scientists
Full texts of the Guidelines for Cooperation between China and Central and Eastern European Countries	2012-2019	
List of Deliverables of the Second Belt and Road Forum for International Cooperation Belt and Road Portal (Belt and Road Portal, 2019)	2019	-Enlarges the scope from the first Belt and Road forum -Emphasis science and technology parks -Emphasises the role of high tech entrepreneurship -Calls for exploring the models for science and technology cooperation among the BRI countries and strengthening the collaboration and exchanges. -Highlights the establishment of the Alliance of International Science Organizations in the Belt and Road Region

While both the 13th Five-year Plan and the 13th Five-year Plan for S&T are long and extensive documents, the other documents are relatively short, making their inclusion of talent as a driver for development more critical. Here the Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road and the Education Action Plan for the Belt and Road Initiative are the only documents produced as continues text. Contrary to these full texts both Lists of deliverables of first and second Belt and Road forum and the full texts of the Guidelines for Cooperation between China and Central and Eastern European Countries have been produced as points under thematic headlines.

The document analysis is combined with interview data that has allowed us to extend and refine the initial conceptual model. The qualitative interview aims to offer a view of the innovation-driven and/or returnee migrant's identity and look at their transnational identities through interactions between social context (exogenous circumstances) and social-psychological features (e.g. locus of control, self-reliance, opportunity alertness). While Chinese returnee migrants can be categorised into various groups, this research will limit its scope to highly-educated and/or research staff whom obtained their degree at universities outside China and had a professional career before returning to China. The methodology aims to examine insights of the research's objectives to achieve a more comprehensive and global understanding of the phenomenon of returnee migrants and global talent mobility and its implications for innovation and knowledge sharing with the country of origin. The longitudinal qualitative interview data was compiled between January 1, 2013 to December 31, 2019. From January 2019, we extended the interviews to include European researchers in China, which will briefly be mentioned, however, due to complication revolving around COVID-19 we only touch briefly on the data collected amongst Europeans.

5. The BRI as an intensification of China's talent programs 2013-2019

As demonstrated by the literature policies, programs, and development plans focused on opening Chinese academia to the world have increased both in number since China's initial opening in 1978. While most of the initiatives targeted the sending and return of Chinese talents, several programs have been paving the way for attracting foreigners and foreign institutions to China. It is possible to illustrate the continued relevance of research focusing on talent mobility with the following quote from the 13th FYP stating that:

We [China] will treat talented people as the number one support for development, [...] and work faster to make China one of the most talent competitive countries in the world (CCCPC, 2016, p. 29).

This approach to talent competition resonates well with the way Shachar describes an intensified competition for talents, in a global

knowledge economy (Shachar, 2006; Shachar and Hirschl, 2015). However, the FYP does not stand on its own as it connects talent mobility and talent attraction to and from China with other programs; such as the Ten-Thousand-Talent program (1000plan.org, 2018), which likewise request talents to come to China. Furthermore, the 13th FYP connects Chinese talent attraction to the BRI and emphasises how the BRI can create more porous boundaries by establishing partnerships and exchanges with multiple benefits. Although it is not always clearly defined what the BRI implies (Kirby and Van Der Wende, 2019) it is possible to illustrate the role of the BRI in China's opening up, through the following quote which again stems from the 13th FYP:

With the Belt and Road Initiative paving the way, we will give greater meaning to the notion of opening up, increase our level of openness, and coordinate efforts to strengthen strategic mutual trust, investment and trade cooperation, and cultural exchanges. We will channel energy into realising mutually beneficial cooperation based on deeper integration and bringing about a new stage in China's opening up (CCCPC, 2016, p. 141).

Complementing the 13th FYP is a 27 chapter's extended Five-year Plan for science and technology (S&T FYP). Like the FYP, the S&T FYP stresses the BRI as necessary for China's opening up and dedicates its chapter 13 to discussing the BRI's role for China's science development (The State Council of the People's Republic of China, 2016). However, perhaps even more significant is the heavy emphasis it puts on China's talent competitiveness. As pointed out in the report Analysis of the 13th FYP for the Construction of Major S&T: "[b]y increasing the number of the country's large RIs to 55, by attracting the world's best talents and launching major international scientific research projects, China's stated objective is to become a dominant actor in global S&T affairs (DEVELOPMENT Solutions Europe, 2017, p. 3)." Following these ambitious goals is increased spending on science and technology between the 12th and the 13th Five Year Plan, from 1.75% of China's GDP to 2.1% of GDP. An increase that should continue as the 13th Five Year Plan aims to enhance the research budget to 2.5% of the national GDP (DEVELOPMENT Solutions Europe, 2016).

Furthermore, the 13th S&T FYP includes a more specific definition of internationalisation targets, with the stated goal of attracting international talents and launching international projects (DEVELOPMENT Solutions Europe, 2017). International talent has together with the talented Chinese diaspora found an increasingly important place at the centre of China's emerging innovation economy. The increased emphasis on the role of talents as drivers for economic development manifests itself in the 13th S&T FYP, as pointed out by the report titled Comparison between the 12th and the 13th Five-year Plan for S&T development, which states that: 'Innovation-driven development' in the 12th FYP [...] has become 'talent-driven development' in the 13th FYP (DEVELOPMENT Solutions Europe, 2016)

Applying Appadurai's terminology to these developments that place talent at the centre of Chinese economic development, a stark alternation of global cultural flows reveals itself. As Appadurai goes beyond the traditionally applied push-pull factors in migration theory and claims that the global flows occur in the disjunctures between the before mentioned scapes the expansion of China's position as an innovative nation will alter the flows. As illustrated in the section above, this alteration includes global science financescapes, global technoscapes, and global ethnoscapes, although only regarding the highly skilled making it almost invisible in contrast to China's size's entire population as well as the total flow of people. As the paper is going forward, it engages with BRI related document and projects to explore how the BRI adds a new dimension to the Chinese talent policies. In Table 2, we draw attention to the documents included in this study as they emphasise either the development of transnational talents mobility or the active exchange of talents across borders.

5.1. Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road

Opening with the most fundamental document the Vision and Actions Plan, we can see how people-to-people bonds have been an essential part of establishing the BRI, from the very beginning. The people-to-people connections the BRI attempts to establish is supposed to lay the foundation for bi- and multilateral support for the corporation between countries. In this regard, academic exchanges and academic talent mobility are but one element of a broader set of collaboration projects. The Vision and Action Plan highlights a desire to have Belt and Road countries send and receive students amongst each other and promote the possibility of running schools together, as a foundation for future collaboration and shared talent development. To ensure this vision's realisation, the Chinese government intends to grant 10,000 students from Belt and Road countries scholarships to study in China every year. Likewise, the Vision and Action Plan calls for promoting the exchange of academic staff and a general corporation; consequently, the BRI becomes part of creating new flow factors to and from China by affecting various areas (National Development and Reform Commission, 2015).

While the exchange of students and academic personnel is a significant element of the BRI's emphasis on talent, there is a further call for broader collaborations on science and technology, including technology transfer centres and joint labs universities, and research centres. In this manner, the Vision and Action Plan predicts that it will be possible to enhance the scientific collaboration across the BRI and establish a basis for tackling critical problems and improving scientific innovation capabilities in the region. However, apart from combating potential issues, networks' establishment could be a necessary infrastructural set up to enable transnational talent flows between Belt and Road Countries. In so doing the BRI partnerships are establishing new and more sophisticated research environments that span beyond the Chinese borders. The latest developments in the research environment are especially apparent in the last chapter, titled VIII. Embracing a Brighter Future Together, which sums up the goals of the initiative. Attention is on the exchange of researchers as a central element in the BRI and that these exchanges of staff for either shorter or longer periods have two roles simultane-

ously. First, they will ensure that knowledge, ideas and technologies are transferred between countries in the region, second, they will aid in establishing trust in the BRI itself and China and particular. Thereby participating individuals, as well as organisations, seem instrumental in ensuring the trustworthiness of the BRI. Together the two functions change China's role in the global landscape into a more influential actor (National Development and Reform Commission, 2015). With the BRI adding new transnational layers to the Chinese talent policies that connect individuals and institutions in longer chains of interdependencies while keeping China at the heart of the development. Both researchers, students, and staff exchanged through the BRI will increasingly connect China's project with that of the world alternating academic flows likewise affect global ideoscapes. However, as long as these changes are conducted within the BRI, they will be carried out with China at the decision-making centre.

China's place at the core of development through the BRI is illustrated particularly well in the Education Action Plan. While the Vision and Action plan hinted at a set of different actors, such as the Chinese state as well as states external to China, provinces and cities in China and institutions such as research centres, universities, and think tanks and even individuals, it had yet to highlight which actors were responsible for carrying out what part of the policy. The Education and Action Plan for the Belt and Road Initiative leaves a more apparent impression of the different actors' responsibilities. At the national level, it calls for internal coordination between relevant ministries, commissions and national organisations to ensure their alignment with the strategies presented in BRI, particularly in regards to international collaboration. At the same time, it was the provinces, cities, and institutions that carried out the bulk of implementation (Belt and Road Portal, 2016).

5.2. Current projects and intensified collaboration across borders

As an example of such a project at the institutional level, the Chinese Academy of Sciences (CAS) has both established their Belt and Road Master's degree fellowship program and launched the Alliance of International Science Organizations in the Belt and Road Region (ANSO) (CAS, 2018). ANSO alone included 37 institutions when both initiatives were mentioned in the Belt and Road List of Deliverables at the second Belt and Road Forum (Belt and Road Portal, 2019). The basis for the collaboration is International Corporation and recruitment. Thereby, ANSO commits itself to the promotion of shared development and "the general principles of "joint consultation, joint effort and joint sharing" adhered to by the Chinese "Belt and Road Initiative for the promotion of shared development and achievement of the UN SDGs" (ANSO, 2019). However, this example of a transnational science and technology institution does not stand-alone. Existing scientific alliances within the BRI include but is not limited to the Universities Alliance of the New Silk Road established at Xi'an Jiaotong University in 2015. This coalition includes more than 60 different institutions (Yojana Sharma, 2015) as well as the Belt and Road Technology Transfer & Collaborative Innovation Alliance, which have amongst other goals an aim to promote international technology transfer and to promote international training as well as the exchange for top talents along the BRI (JITTC, 2018).

Another slightly different example could be the China-Belgium Technology centre in the science park of the Catholic University of Louvain-la-Neuve in Belgium stands out (Roussi, 2019). Although the ambitious project has yet to open the description of it is as "a two-way gateway for Chinese-European innovation and cooperation in the following high-technological domains: Life Sciences, ICT and Smart Manufacturing (CBTC, 2019)" and at least considered founded on the Belt and Road principles by the Chinese side (Belt and Road News, 2019). Together the projects are part of connecting talents abroad to China, whether these are Chinese living abroad or international talent. These findings resonate well with William Kirby and Marijck Van Der Wende's, who likewise identify the emergence of institutional partnerships, conferences, and scholarships related to the BRI (Kirby and Van Der Wende, 2019).

Table 2
Population – Longitudinal Data 2013-2019.

Respondent No.	Gender	Age	Country of residence prior to returning to China	Highest obtained education prior to arrival in China distributed according to field and year	Occupation prior to the arrival in China	Occupation in China after being headhunted / year of arrival	Considering leaving China	Left China distributed by year and current country of residence
1	M	45	US	PhD, Physics, 2002	Consultant/ Private Research Institution	Associate Professor at University/2011		US, 2017
2	M	50	US	PhD, Chemistry, 2005	University researcher	Professor, 2012	Yes	
3	F	39	US	PhD, Dentistry, 2009	University	University, 2012		US, 2014
4	M	44	Canada	PhD, Robotics	Private institution	Private research – own firm 2012	No	
5	M	32	US	PhD, ICT 2015	Bank IT security	Bank IT security – own firm – 2012	No	
6	M	55	Australia	MSc. ICT, 1995	IT Developer	IT Developer – own firm – 2011	No	
7	M	52	UK	PhD, Physics, 2000	Construction	Chief City Developer – 2013	Yes	
8	M	49	UK	PhD, Medicine Radiology, 2002	Chief Radiologist	University Professor 2015	Yes	
9	F	41	UK	PhD, Pharmacology, 2012	Private Pharma firm	Chief production officer – Pharma firm 2015	Yes	
10	F	38	UK	MSc. ICT, 2015	Banking ICT sector	Banking ICT sector 2013		UK, 2017
11	F	55	UK	MSc. ICT, 1995	ICT Developer	Lead Banking Mathematician 2015		UK, 2019
12	M	50	US	PhD ICT 2000	ICT Developer	Chief Designer, Own IT firm, 2013		US, 2014
13	M	50	Germany	PhD Civil engineer 2005	Construction	Construction 2011		Germany, 2015
14	F	33	Germany	PhD Medicine 2012	Oncology	Oncology, 2012		Germany, 2013
15	F	55	US	PhD Economics 2000	Associate Prof.	Uni. Professor 2012		US, 2014
16	F	30	US	MSc. Pharmacology 2012	Hospital Pharmacist	Chief Production Pharmacist, 2013		US, 2014
17	M	49	US	PhD Physics 2008	Research Associate	Research Director – Private firm 2011		US, 2013
18	M	39	Canada	PhD Mathematics 2010	Banking Sector	Banking sector 2013		Canada, 2014
19	F	33	Canada	PhD Mathematics 2014	Insurance sector	Insurance sector 2015		Canada, 2018
20	M	51	US	PhD Chemistry 2000	University Researcher	Uni Professor 2015	Yes	
21	M	52	US	Architect 1997	Architect	Own Architect firm 2015	No	
22	M	57	Canada	PhD Microbiology 1999	Private Research Institute	Chief Researcher – Private Institution, 2011	Yes	
23	M	47	Canada	PhD Law, 2004	Law firm/Researcher	Uni. Prof. International Law 2015	Yes	
24	M	35	US	PhD Physics 2013	Uni. Researcher	Science Park / Private Research institution 2015	No	
25	M	35	US	PhD Physics 2014	Uni. Researcher	Science park / Private Research institution 2015	Yes	
26	F	46	Canada	Architect 2001	Architect	Architect – own firm 2014	No	
27	M	50	UK	Architect 1998	Architect	Architect – own firm 2015	Yes	

Furthermore, they echo Van Der Wende, and Robert Tijssen finds that these partnerships are part of a trend that sees more Chinese publications with international collaborators. Using the web of science database, they show that the share of co-authored research articles with Chinese and non-Chinese has been rising since 2005. This trend is happening alongside an increase in the numerical output, which means that the numerical increase in shared publications is even more significant (Van Der Wende and Tijssen, 2019). The increase in the number of co-authored papers indicates that the scientific connection to China is getting stronger. Another demonstration of these ties' strengthening appears in the guidelines for the CEEC 16+1, now 17+1, cooperation. Although the CEEC 16+1 collaboration began before the BRI initiation, it became part of the BRI. Included in this collaboration, we find a sharing of talent and establishing technology transfer centres, incubators, and innovation hubs (Xinhua, 2019).

To sum up the initial findings, we highlight that the BRI functions on a political foundation that was both willing and aiming for chang-

ing China's role in the global knowledge economy. A significant part of altering China's role has been a steady increase in science and technology financing, which now matches most OECD countries. Along with these changes, a relaxation of residence permits and a broadening of talent attraction policies to include both diasporic talent, foreign talent, and with the implementation of the BRI talent from Belt and Road Countries. Thereby scientific interdependencies are formed between China and the world where talents can flow to and from China. However, just as Appadurai goes beyond traditional push and pull factors and takes a more chaotic approach to migration, we suggest that the nature of these new flows will be remarkably different from those of the past. Both the migrants returning from abroad and foreign talents can be mobile and interact with diverse global and local spaces. The mobility of talented individuals includes competition for the best and the brightest and securing a technological edge. However, these clashes go beyond the rivalry between different states and include actors on all levels of participation in the now globalised sci-

ence environment. Clashes that we will turn our attention towards on a micro-level.

5.3. Comprehending the paradox why are talents leaving if policies should benefit them

In a recent article, Zweig, Siqin and Huiyao (2020) point out that it is still not the best and the brightest talents who return full time to China. However, they demonstrate that the state-run talent policies have been influential in attracting both overseas scholars full time and part-time. While the state has focussed on establishing material conditions that made return or migration to China relative lucrative, they can illustrate that there still exist significant soft barriers and a reluctance towards reformation.

The reluctance towards reforms and the soft barriers blocking the mobility of talented returnees and foreign migrants seem to be countering the states talent initiative. Our 27 longitudinal qualitative interviews (compiled between January 1, 2013 to December 31, 2019) aim to shed light on some of these barriers, mainly related to Chinese networks' structure. Our respondents elaborated on why Chinese returnees transfer or fail to move their considerable human capital advantages into equivalent advantageous upward socioeconomic mobility and status during interviews. As a result, many returned migrants consider returning to their country before their repatriation in China. Although they were part of being headhunted and or enrolled in various official "Talent Programs". The interviews have taken place twice per year (biannual) for all respondents as long as they stayed in China. As illustrated in the table below, these barriers have resulted in a significant re-migration. Furthermore, many of the individuals are considering to emigrate once more, particularly those in academia.

The following table summarises the results of the semi-structured longitudinal qualitative empirical research-interviews. Here are typical statements about the factors and circumstances that, according to the interviewees, explain their experiences in China. An elaboration orders the results based on open coding (i.e. number of times they appeared in the interviews, the degree they emphasised them, etc.). Descriptions in the parentheses are based on meaning condensation and represent our categorical conceptualisation, i.e. general explanatory category that the statements represent. We have applied the network concepts presented earlier in the paper to theorise how social relations affect Chinese returnees' experiences.

Table 3. Most typical characteristics of Chinese Returnees (Sea Turtles) based on the respondents' subjective experiences on interviews conducted in Beijing and Shanghai during 2013-2019.

Applying network-related concepts related to guanxi as a code for understanding the experiences of Chinese migrants confirms that returnees are experiences the unfavourable aspects of guanxi while missing out on the favourable once. Similarly, it illustrates that returnees tend to stand out, either voluntarily or due to their limited attachment to networks in China. These findings seem to strengthen the points made by Zweig et al. (Zweig, Kang and Wang, 2020) that institutional barriers can hinder return migration. However, it also highlights the reformation as a possibility for changing the local environment. When considering the finding that presidents, managers and directors who are returned migrants themselves tend to hire staff based on merit rather than network and therefore have a tendency to employ more returned migrants, the suggestion that changes at the micro-level in Chinese institutions can create smoother access to resources and opportunities in China for international talents seems to be equally valid in terms of retaining talents in China. Our longitudinal data supports this point, which suggests that when individuals fail to penetrate the relational barriers, they emigrate once again, making retention difficult (Liu, 2020). While close to half of our respondents have already left China, notably respondents in academia, seem to consider re-migration. Strengthening the finding that they have a perception of standing out. Similar tendencies reveal themselves in interviews conducted with European researchers in China

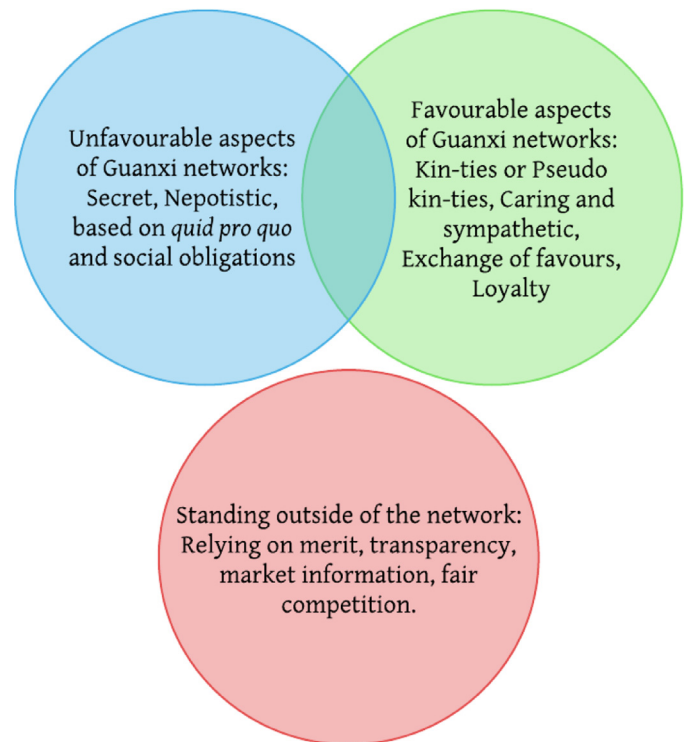


Fig. 2. Guanxi networks and outsiders.

and recent surveys conducted by Euraxess China and Mouritzen, which revealed that most European researchers intended to leave China within 3 to 5 years.

Table 4. Intend to continue working in China: This frequency table from the mobility survey by Euraxess and Mouritzen, illustrate Europeans researchers intend to continue working in China. While a third of the respondents is undetermined, it is not easy to estimate how long they intend to stay in China, the third that intends to leave within a relatively limited period of 1 to 2 years and the third that intends on leaving after 3 to 5 years both indicate that retention is relatively tricky.

Here Mouritzen observes an extreme version of the same tendencies amongst European STEM ex-pats in China, where they express either a desire to return to their home countries at some stage or remigrate; we conclude that this is a result of migrants role as outsiders who rely more on merit and transparency as they are not established characters within guanxi networks. As a result, what attracts talents both returnees and foreigners seems to be transparent and merit-based research opportunities that will be as attractive as elsewhere when available in China. However, as the talented migrants tend to leave China again, they become a true manifestation of brain circulation, always bringing their knowledge and networks elsewhere. Fig. 2 below presents a simplified illustration of international talents as outsiders in Guanxi networks. However, neither of the groups have explicitly expressed that the BRI motivated them to either stay or leave. Instead, we assume that the BRI can have indirect effects by shaping institutions and providing opportunities to those positioned outside Guanxi networks, as illustrated in Fig. 2 below.

Fig. 2. Guanxi networks (Bian, 2018) reflect some of the same components as man-know-man networks (Njoku and Cooney, 2020) and share characteristics with ravabet networks (Rezaei et al., 2018), this makes it possible to distinguish the insiders from the outsider's who is of particular importance when discussing migration. We thus suggest that both returning Chinese talents and foreign talents will tend to stand out and will be unattached to the guanxi networks. Being an outsider without access to hidden important information should make it more difficult to flourish in the environment and make them more flexible and capable of leaving either part-time or full time.

Table 3
 Recurrent answers in – Longitudinal Data 2013-2019.

1	Chinese returnees are individualists.	Lacks: Kin-ties or Pseudo kin-ties
2	Chinese returnees love freedom.	Avoiding: Obligational networks
3	Chinese returnees are paying the price for not trusting anyone.	Lacks: Loyalties Avoiding: Obligational relations
4	Chinese returnees have great empathy, but their compassion is passive and verbal, not action-oriented.	Lacks: Kin-ties
5	Chinese returnees do not have a sense of belonging.	Avoids: Quid pro quo
6	Chinese returnees neither participate in nor are oriented towards what is going on politically in China.	Lacks: Kin-ties or Pseudo kin-ties Lacks: Loyalty
7	Chinese returnees have indeed given up any hope about fundamental changes in China. Many think that Chinese (in China) after all deserve the government that they have. It is a quite joint statement that China has a so-called public cultural problem than a political/governmental problem.	Avoids: Nepotistic ties Outside: Secret culture
8	Chinese returnees consider each other as competitors, not in a constructive way, but rather in an unsound envious way.	Have: Perception of standing out, competes on merit and global market
9	A Chinese returnee prefers to be the only Chinese returnee in his/her workplace. They will not be happy if another Chinese returnee is hired. (Some respondents explain this pattern by referring to the individualist character; saying, it is because they do not want to make a "group of Chinese returnees", which they believe makes their otherness shine through even more).	Have: Perception of standing out, competes on merit and global market
10	Chinese returnees claim that Chinese in China have not learned the culture of collaboration. It is most probably due to the educational system they were brought up within.	Avoiding: Obligational relations and quid pro quo ties.
11	If a Chinese returnee is married to a native (Westerner) person, their children are unlikely to speak any Chinese and know anything about China or their relatives.	Have: Perception of standing out
12	Chinese returnees disassociate themselves from their country of origin but try to convince others that they are Westerner/American/European etc. Some other times they claim a sort of cosmopolitan attitude. They have houses but not homes.	Have: Perception of standing out
13	Chinese returnees do not have any sentiments about China.	Lacks Kin-ties or pseudo-kin-ties and Loyalty
14	Chinese returnees do not participate in activities that have anything to do with China.	Have: Perception of standing out
15	Chinese returnees, on average, do not have close connections with China except seeing China as a great job opportunity. Chinese, who came to Western countries through family reunion regulations, are more likely to visit China on their vacation compared to their spouse who left China and now returned due to a job opportunity.	Lacks: Kin-ties or pseudo-kin-ties, Caring and sympathetic
16	Chinese returnees are not proud of China and usually would prefer to say they "were born" abroad, to disassociate themselves from contemporary China.	Lacks: Loyalty
17	Chinese returnees praise education a lot, but not necessarily as a means to a career. It seems that education for many of them serves for some kind of self-realisation purpose.	Have: Perception of standing out
18	Chinese returnees are overrepresented in divorce and mental illness statistics. Many feel lonely and disconnected.	Have: Perception of standing out
19	The children of intermarriages (between Chinese and native Westerners) are most typically rootless, compared to other migrants', who emphasise their national and ethnic backgrounds. Almost no Chinese (be it in cross-ethnic or mono-ethnic marriages) gives Chinese names to their children. The second and third generations' names are typically not a Chinese identity marker.	Have: Perception of standing out
21	Chinese returnees usually think they are more intelligent, more talented and gifted, and valuable than any others, especially than other Chinese with the same educational background from different places in China than their city of birth. It makes them arrogant and ignorant.	Have: Perception of standing out

Table 4
 Intend to continue working in China.

Table 3 Intend to continue working in China.	Frequency	Percent	Cumulative Percent
Short term less than a year	11	11,1	11,2
It's temporary but still considerable amount of time (for example 1-2 years)	19	19,2	30,6
A longer time - (for example 3-5 years contract, but I don	33	33,3	64,3
Undetermined	35	35,4	100,0
Total	98	99,0	

5.4. Limitations and future research

Our mixed-method approach (Morse and Niehaus, 2009) has attempted to generate theoretical insights that span the micro-macro level divide by relying on theoretical generalisation. Through this study, we find that China's emergence as a key actor in science and technology is essential for understanding globalisation, including the flow of international talent now and in the future. Several streams of literature are central in the furthering knowledge on the internationalisation of Chinese

academia. The vibrant literature on talent management, particularly in transition economies, has much to offer this research, both in terms of recruitment of talent and opportunities for retention, and development of talent, which have tended to be overlooked (Fang, 2019; Liu, 2019). However, to do so, it is necessary with longitudinal studies that follow talents both in China and as they move on.

Moreover, the literature on academic, high-skilled, and researchers mobility can highly benefit from examining China's case in a new light beyond returnees and includes foreigners, who are increasingly called

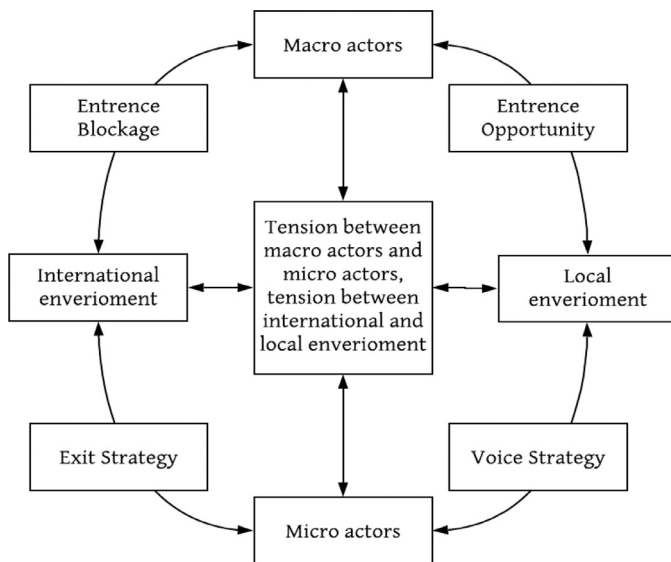


Fig. 3. Talent attraction from above and below.

upon in the documents we examined. While some studies (Kim, 2015; Farrer and Farrer, 2019; Larbi and Ashraf, 2019; Li et al., 2020; Wang and Chen, 2020) are beginning to appear, there seems to be ample room for investigation of cases. Finally, our study leaves a great whole in the research to be explored further, what happens to those who leave the study. Haven taken nationalistic approach methodologically, we have failed to observe those who remigrate and return to the circular flows of migration. Understand how they fair in the global labour market and what role they play in defining the flowscapes of future knowledge workers will be crucial. However, this will require a genuinely transnational methodological approach.

6. Conclusion

China has addressed and does address globalisation from above. Including addressing global talent flows both in and out of the country. At the macro-level, the state has become more capable and willing to fund an increasingly international research environment. In line with to d'Hooghe (2021) and Schneider (2021), we suggest that the BRI is an intensification of an already existing political transition that places talents, knowledge workers and human resources at the centre of the Chinese economy. This intensification has manifested itself within the BRI. Understanding this intensification through the concept of flowscapes involves paying attention to the chaotic redirections of talent flows, ideas, and partnerships. This article shows that while the emergence of new possibilities in China, for both Chinese returnees and international talent, is attractive, they are not necessarily enough to retain talents in China. The interviews with returnees that span both researchers and entrepreneurs indicate that academics are more inclined to continue their careers elsewhere if research opportunities are slim.

Additionally, our longitudinal interviews indicate that returnees are frequently positioned outside Guanxi networks, in a more isolated position, both on good and evil. Positioned as outsiders both return migrants and international migrants have difficulty establishing roots in China. We find that our respondents seek new opportunities elsewhere, notably, if they cannot express their voice and shape their environment, they are losing out on the sentimental elements of Guanxi ties that might root other individuals in their institution. Missing out on guanxi ties' sentimental elements seems to make it easier for returnees to connect abroad and reestablish themselves elsewhere if the need arises. This finding echoes that of Liu, as we suggest that the risk of failing to retain internationally oriented talent in Chinese science will be a severe issue.

A theoretical proposal for the effects of ability and inability to voice concern and local change environments is illustrated below in Fig. 3.

Fig. 3: Illustrate the tension between the government trying to recruit, retain, and develop their pool of talents on the one hand and talents seeking the best places to realise their professional potential and personal life. It applies exit, voice and loyalty strategies to migration patterns to show that these can either choose to leave in protest, stay put or even change their environment. As suggested by our interviews the lack of opportunity to flourish or even to voice concerns and shape the local research environment at the local level also forces the talents to exit the local environment and circulate within the global environments. However, most mobile talents are never lost entirely, neither from their home or host country; instead, both returned Chinese talents and foreigners in Chinese academia seem to be capable of circulating between locations.

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