Transnational Landscapes of Opportunity?
Post-graduation Settlement and Career Strategies of International Students in Toronto, Canada and London, UK

by

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A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy

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Abstract

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This thesis explores the emerging issue of cities and countries competing for international students as part of market and talent-based economic development strategies. Based on case studies in London, UK and Toronto, Canada, this research draws on interviews with senior policy-makers as well as international students completing their overseas studies to examine three issues.

First, this thesis investigates the process by which similar policies to attract and retain greater numbers of international students have been developed and introduced in both countries. Arguing that these policies are “mobile,” this thesis demonstrates how the competitive interconnectedness of policy-making leads to the transfer of policy ideas from one jurisdiction to another, while also recognizing the mediating role of institutions for contributing to continued geographic differences in the policy landscape regarding international education.
Second, it examines the decision-making process for international graduate students upon the moment of graduation with regard to their settlement and employment strategies. Through a comparison of international students finishing advanced degrees in science and engineering in both sites, it reveals the extent to which students’ plans involve the complex intermingling of personal, professional and (im)migration regulation factors. The confluence of these factors tend to pull students in different geographic directions, indicating that the conventional ‘stay or return’ construct is too simplistic as a framework for understanding students’ future movements. Moreover, the comparison of students’ strategies in the two sites illustrates the differential effect of multi-scalar institutional frameworks in constructing certain types of migrant subjects.

Third, this thesis investigates how career development strategies of international students differ according to broad disciplinary differences. Contrasting the career plans of graduating students in science, engineering, and art and design programs, this research finds that there are key differences in the socio-spatial career strategies held by international students in line with the differentiated knowledge bases literature.
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Introduction

VANCOUVER -- The Chinese government has raised an alert about a severe brain drain and has listed Canada among the top recipients of its exported talent. But as much as the talent war is raising fears in China, it has been a cause for hope in British Columbia (…) B.C. universities are experiencing some of the highest enrolment of students from China and the provincial government is looking increasingly to international students and immigrants to help stem a projected labour crunch (Sin 2007).

This dissertation begins with a recent quote from a Vancouver newspaper because of the issue it represents and the language it uses to do so. The paper depicts a “brain drain” as an urgent concern for the state agenda, it draws parallels between looming labour shortages and ensuing “talent war,” and it sketches an uneven economic playing field in which universities and mobile international students, along with desirable immigrants, are key elements in this competition.

Later in the same article, the reader is introduced to Sophie Li, a Chinese student at the University of British Columbia. In response to a question about her plans upon completion of her studies, she replies, “I know a lot of friends want to stay… but if there are jobs in China, I’m back there. But if there are good jobs here, I’ll stay. So it depends.” This young woman is depicted as having the world as her oyster, with full choice in terms of career and desired place of residence after graduation – in this case, staying in Vancouver or returning to China.

While the tone of this article is somewhat sensational, it usefully represents the burgeoning issues that will be the subject of this dissertation: the growing interest among cities and countries in international students as a potential source of highly educated labour and in the experiences and decisions of these students upon graduation. The OECD estimates suggest that in 2006 there were 2.9 million students at the tertiary level studying
outside their home country (OECD 2008a, 352). While scholars and policy analysts have long considered foreign student enrolment rates from the perspective of their financial contribution to higher education systems, using universities as instruments to draw mobile students and young researchers to city-regions or countries as part of a global competition for talent appears to be a recent shift in strategic focus (Gertler and Vinodrai 2005; Douglass and Edelstein 2009). However, while reasonably accurate information exists on the incoming flows of international students at the country level, there is a general lack of scholarship on the process by which governments in advanced economies at various levels are introducing policies to shape student mobility patterns, as well as the subsequent movements and long-term career plans of these increasingly sought-after individuals.

Research questions and aims

This dissertation examines the issue of international student mobility as it intersects with three areas of scholarship in geography, drawing on different theoretical literatures to do so. First, this dissertation aims to examine international students as transmigrants and to develop insight into their decision-making process upon the completion of their studies. To do so, I draw on the transnational literature, which adopts an approach that recognizes the “multi-stranded social relations” that migrants maintain in their home and host societies (Basch, Glick-Schiller, and Blanc-Szanton 1994), as these relations affect their individual structures of opportunity and their realm of reference regarding professional aspirations, strategic goals and economic choices (Olwig and Sørensen 2005). With such a lens, research shifts attention away from the places between which migrants travel, to a broader investigation of the different social and economic ties and cultural values shaping migrants’ movements and practices (Levitt and Glick-Schiller 2004). Moreover, this framework
enables us to consider migrants as strategic actors (Ong 1999; Ley 2005), while also recognizing that migrants’ agency is shaped and constrained by the place-specific political-economic and policy contexts framing their lives (Silvey 2004). As McDowell (2005, 20) writes:

[A transnational perspective] usefully challenges conventional distinctions between structure and agency, between political economy and forms of individualist explanation, as well as the binary division between global processes and local lives, which tends to be mapped onto these binary distinctions.

Although several scholars have illustrated the value of recognizing international students as transmigrants (Waters 2005; Collins 2008; 2009), this approach has not yet been employed to understand how international students make decisions regarding their careers and place of residence at the completion of their studies. Furthermore, the ways that students’ strategies and perceptions may have been shaped by their experience of studying in particular environments have not been investigated.

Second, the policy environment in which international students are making their decisions is rapidly changing. In particular, as the opening quote suggests, governments are actively adopting policies in an effort to attract and retain international students to benefit from the short- and long-term economic contributions that these students can make, namely through their direct tuition fee payments, as well as for their intellectual contributions to individual higher education institutions (HEIs) and national systems of innovation, or as part of the highly skilled labour force if they remain after their studies (Findlay 2006; Kuptsch 2006; Vincent-Lancrin 2008). This dissertation aims to investigate this changing context to contribute to our understanding of the ways that states are seeking to develop jurisdictional competitiveness within the knowledge-based economy through talent-based economic development strategies (Raghuram 2008). This context must also be
viewed as one in which many states that are actively encouraging the mobility of some migrants desired for their skills and access to capital, while also increasingly restricting the mobility of low-skilled migrants (Willis, Yeoh, and Fakhri 2004; Silvey, Olson, and Truelove 2007). Moreover, policies and initiatives of the state are increasingly expanding beyond traditional immigration policies as they seek to exert an influence on a range of activities and movements of desired migrants (Meyer and Brown 1999; Levitt and de la Dehesa 2003; Sparke 2004). This thesis similarly employs a lens that expands beyond immigration policy to examine the *multiple* scales and spheres involved in the regulatory and institutional environment for shaping students as migrants and their subsequent work experiences. In particular, as there is a striking similarity to the recent policies designed to influence international students, this thesis looks to the literature on policy transfer, policy diffusion and “policy mobilities” to understand the diverse mechanisms by which the policy ideas of one jurisdiction get adopted in another (Peck 2002; McCann 2008; Peck 2009; Peck and Theodore 2010; McCann forthcoming). In a complementary literature, economic geographers have been exploring the role of institutional legacies and histories in shaping actual policy implementation and the reproduction of a differentiated policy landscape (Amin 2001; Peck and Theodore 2007; Gertler 2010). I suggest that a combination of these two theoretical approaches yields valuable insight into the existence of merging policy trends while understanding the persistence of geographic difference with regard to international student mobility policies.

Third, there is a burgeoning area of scholarship within geography that examines the relationship between formal education and paid employment in highly skilled sectors of the economy. So far, this literature focuses exclusively on research into business-related degree programs (such as MBAs) or professional service fields (e.g. law and accounting) (Hall 2008; Faulconbridge and Hall 2009b; Hall and Appleyard 2009; Waters 2009). My thinking
on the ways that international students may transition from advanced graduate degrees in
different disciplines into a broader range of sectors of the economy has been informed by
the differentiated knowledge bases literature (Asheim and Coenen 2005; Asheim and
Gertler 2005; Asheim, Coenen, and Vang 2007). This body of work emerges from
scholarship on the geography of innovation and explores the ways that different knowledge
bases (analytical, synthetic, and symbolic) underpin key differences in the work
organization norms, the transferability of knowledge, and labour market dynamics within
various sectors of the economy (Asheim and Gertler 2005; Gertler 2008). I contend that this
literature provides a useful approach to explore whether, and if so how, international
students with different academic training incorporate considerations of local labour market
dynamics and their transferability of their knowledge and skills into the post-graduation
career plans and strategies.

I suggest that these literatures are analytically complementary and come together in
this thesis in a powerful framework to understand the factors and processes that have
bearing on the ways (post)graduate international students find employment upon
graduation, seeking to recognize the interplay between place-specific regulatory and
institutional structures with the diversity of individual choices and strategies.¹ The specific
questions asked in this thesis are these: What changes are states making to attract and
retain international students as part of talent-based economic development strategies, and
what do these changes tell us about the mobility of policies regarding highly skilled
migrants? What is the nature of decision-making for international students finishing
advanced studies in science and engineering, and to what extent does the experience of

¹ Because this dissertation will draw on research in the North American and UK context, where
Masters and PhD level students are known as “graduate” and “post-graduate” respectively, I use the
term “(post)graduate” when referring to both contexts.
studying in a particular place shape the post-graduation strategies for these students? And to what extent do the post-graduation strategies held by students differ according to disciplinary background? This dissertation examines these issues through comparative case studies in London, UK, and Toronto, Canada, and employs two distinct methodologies, which I discuss in turn.

Research design and methodology

Comparative case studies: Toronto, Canada, and London, England

Case studies have long been recognized in geography as a meaningful approach for developing a detailed understanding of the relationships between the behaviours of individual agents and their causal context. Particularly when focusing on the individual actions and decisions of economic agents, Clark (2007, 195) writes that case studies are able to “handle the complex interplay between culture, institutions, and the nature of everyday decision-making.”

However, the challenge still remains with intensive single case studies to tease out which particular influences may be from place-specific institutions and agents in contrast to more general processes. In other words, single-site research can make it challenging to move beyond the explication of extant theory in a specific context towards the generation of new explanatory insights, as several commentators have recently noted (Barnes et al. 2007; Peck and Theodore 2007; Gertler 2010). For example, Barnes et al (2007, 22) write:

Sustained theoretical development by way of case-study research is hampered by an apparent disinclination across the field to invest in corroboration, triangulation, and interrogation across comparative sites.
A comparative approach, arguably, better enables the influence of place-specific institutions over economic life and individual behaviours to be discerned, and a clearer sense of the difference that geography makes (Gertler 2010).

This research compares the post-graduation strategies of international students in Toronto, Canada, and London, UK, based on a number of methodological considerations. First, I elect to frame this study primarily at the urban scale because the city-region has become recognized in recent years as the critical unit for shaping economic dynamism and innovative capacity and is the scale at which the potential effects of retaining students would be felt most strongly. Second, Toronto and London provide a similar context for incoming students in that they receive the largest number of international students in their countries each year from a wide range of national backgrounds (21,750 and 97,150 respectively in 2008-09) (London Higher 2010), with a large proportion at the graduate level. Third, both cities host world-class research universities and specialized institutions and offer instruction in English. Fourth, both also have notably multicultural and multi-racial populations and are the largest metropolitan economic centres in their countries, with relatively similar industrial structures that comprise a diverse mix of service industries and many company headquarters. Fifth, the urban economic development strategies in both cities also emphasize the life science sectors as well as the cultural

2 The London figure is based on the number of non-UK domiciled students attending London’s 42 HEIs (not including Open University students). The Toronto figure is the author’s estimate based on the number of study-permit holders in Toronto at all levels of education (secondary or less, trade, other post-secondary, university), namely 40,288, set against the national average of 65 percent of study-permit holders studying at the university level (CIC 2010). However, it should also be noted that there are considerable challenges with regard to the comparability of national data sets regarding international students. For example, different interpretations exist on the terms “international” or “foreign” students, with national governments and higher education institutions collecting dissimilar data, depending on whether they consider the defining factor to be country of residence (international versus domestic) or citizenship status (foreign versus national) (Kelo, Teichler, and Wächter 2006). For these reasons, comparative statistics on international student figures should be viewed with caution.
industries as key drivers of economic growth (TED 2000; LDA 2005). And lastly, they are also both situated in countries where the national education and research policy discourse explicitly promotes “attracting the best and the brightest” students.

Nonetheless, there are important qualitative differences between these two cases. To begin, the cities differ considerably in terms of the total population and relative importance in the global hierarchy of business and finance centres, marking an important difference in post-graduation local labour markets for the students. Additionally, the policy frameworks differ for foreign students in terms of national immigration regulations. As well, the UK is a signatory of the “Bologna” reforms constituting the creation of a European Higher Education Area; therefore, there is an additional layer of supranational policies and a process of European reform debates that have bearing in the London case. I return to these differences in Chapters 1 and 2, as they provide useful grounds for developing new theoretical insights regarding the importance of geographic variations.

To investigate the interaction of institutional geographies and the individual agency within these two cases, this research adopted two main approaches. The first approach is to conduct interviews with (post)graduate international students at the completion of their studies to examine their plans regarding where to live and work. The second approach investigates the evolving institutional and policy framework affecting international students through interviews with key policy-makers as well as a review of supplementary policy documents and media reports. I elaborate on these complementary and concurrent research processes in both sites next.
Interviews with international students

In total, 66 interviews were conducted with international students in the final year of research Masters or PhD programs in both cities. I elected to focus on students with advanced academic training in science, engineering and art and design for three reasons. First, these disciplines correspond with the desired growth sectors among economic development officials in both cities (TED 2000; LDA 2005). Second, they are popular programs with overseas students (London Higher 2007). Third, the small but emerging literature on the relationship between formal education and labour market practices focuses on business education and regulated professions (Olds and Thrift 2005; Hall 2008; Faulconbridge and Hall 2009b; Hall and Appleyard 2009), and I wished to expand the scope of academic disciplines considered. In the end, I conducted 47 interviews with students from science and engineering programs in both Toronto and London and 19 from art and design programs in London only. This enables a comparison of students at a similar life-stage and level of education across common disciplinary backgrounds (science and engineering) in both case sites, as well as differences within disciplinary training in a given city. (See Appendix 1 for the full schedule of student interviews.)

Within these academic discipline categories, the international students had diverse backgrounds. They differed in terms of nationality, ethnicity, race, financial situation, and migration status. My selection of such a heterogeneous sample was deliberate. Both Toronto and London host international students from a staggering breadth of geographic and ethnic backgrounds, and this research sought to explore the range of their strategies and to potentially yield insight into how the experience of certain places may similarly affect

3 Unpublished data from the UofT School of Graduate Studies (2006-7).
4 I had originally intended to interview international students in graduate art and design students in Toronto as well but I was unable to find a sufficient number of students to have a comparable sample.
individuals who differ across a number of axes. Therefore, while it is conventional in research on transnational student migrants to select a population that is connected by a commonly shared home and host cite, I opted instead to follow Marcus’s (1995) call to select a strategically chosen destination as a “space of flows” through which to study a multi-sited population. The spaces that I focused on were the Imperial College London (ICL) for students in science and engineering in London, the Royal College of Art (RCA) for students in art and design in London, and the University of Toronto (UofT) for students in science and engineering in Toronto. I selected these institutions because they are comparably well-known institutions that receive large numbers of international students from diverse backgrounds each year.

I recruited the first few students at each institution through emails distributed by graduate department secretaries or by meeting international students at information seminars targeted towards them on the campuses (e.g. sessions on changing immigration laws). Roughly one-quarter of the respondents were gained through this method. The remainder was recruited through referral by past interviewees. Once a potential interviewee contacted me, I emailed a letter outlining the research’s purpose (see Appendix 2) and followed up with a phone call. All interviews were conducted on university campuses or in public coffee shops or parks and lasted one to one and a half hours.

I performed semi-structured interviews with international students because I wanted to unravel how they make sense of their own lives and rationalize their next steps in terms of career and wider life considerations. Interviews were designed to encourage students to reflect on their decision to study abroad, to discuss why they chose their eventual institution, and to discuss their preferences, plans, and perceived prospects for the future. (See Appendix 3 for an interview guide). It is increasingly acknowledged that
permitting those under study to construct their own accounts of their experiences and strategies provides insight into how migrants lay out the complexities of their situation and weigh various options before them (Silvey and Lawson 1999; Lawson 2000). By encouraging students to explain the rationales underpinning their sequence of movements, I was able to gain a sense of the respective cultural, political and economic logics that have brought them to Toronto or London and that shape their present-day transnationality (see Ong 1999). As well, through interviews I sought to uncover the ways in which the geographically dispersed social relations that they maintain as migrants and the place-specific institutions shaping their experiences inform their strategies and future plans (Silvey 2004). All interviews with students were confidential, as outlined on the consent that they signed at the beginning of each interview (see Appendix 4), and pseudonyms have been given to all participants who are quoted in this thesis.

**Researching the evolving policy framework**

The second approach involved investigating the evolving policy framework shaping international students’ experiences and their labour market and residence options upon graduation. Given the project’s original city-region comparison, I investigated the multiple scales of government that overarched students and the universities in each city-region, often moving up through regional, provincial, and national scales of government. I began with a list of relevant departments and representative organizations across the spheres of higher education, immigration, and economic development in both countries, and was referred on by policy-makers to other germane agencies during the course of my fieldwork. In total, I conducted 29 key informant interviews with senior policy-makers and stakeholders. (See Table 1.1.) The interview goal with policy-makers was to determine how
relevant organizations were involved in setting or changing policy priorities, what
initiatives they had to attract and/or retain students, as well as why they initiated the
changes and what their sources of inspiration were. In addition, interviews also sought to
understand the general institutional history of various organizations and departments
regarding agenda setting and implementation and the evolving informal and formal
relationships between various policy departments. In six instances, I spoke with more than
one representative at an institution to corroborate answers. The Canadian interviews took
place in Toronto and Ottawa, and the UK interviews occurred primarily in London, with a
few additional interviews in Manchester, UK, and in Brussels, Belgium. Interviews lasted
between 30 minutes and two and a half hours. At the beginning of interviews, participants
were given the choice of speaking on-the-record or anonymously, and two-thirds chose the
latter (See Appendices 4 and 5). The constraint that this method imposed on my
presentation of findings is discussed in Chapter 1.

In addition to interviews, I reviewed public and internal policy documents and
briefing notes of the various organizations and departments, pre-submission lobby
documents, state budgets, and media reports from 2005-2009 to learn of policy
developments and the language and logics used to justify changes. I also attended several
seminars at the UofT, ICL and RCA during my fieldwork period to observe the ways
institutions relayed policy information and career guidance to international students. These
included information seminars targeted at international students on the changing
immigration regulations as well as seminars organized by the ICL Graduate Schools to assist
students nearing completion of their studies with their job search activities (e.g. “Finish Up
and Move On”) in the fall of 2007. As well, I was a participant observer at a cross-
departmental meeting of the Advisory Committee on International Students and
Immigration (ACISI), organized by Citizenship and Immigration Canada (CIC), and a
Federal-Provincial/Territorial Consultation with Stakeholders on Education-Related International Activities (FPCSERIA) meeting organized by the Department of Foreign Affairs and International Trade (DFAIT) and the Council of Education Ministers of Canada (CMEC) in December 2008 in Ottawa. These supplementary sources served to further contextualize the research and validate the interview discussions with policy-makers.

Reflections on the research process: claims to representativeness, researcher positionality, and theory-building

This research seeks to develop insight into the causal factors and processes creating perceptions among international students and the ways in which students weigh their perceived choices and develop strategies, which I argue can only be obtained through in-depth, individual accounts available through one-on-one interviews. However, at the cost of qualitative texture and depth, come certain research limitations and challenges. I outline two: representativeness and researcher positionality.

Claims to representativeness

The small number of students that I spoke with in each city means that I am unable to claim representativeness to my findings. This was not my goal. My focus was on being able to induce insight regarding the complex weighing of career and broader life considerations, as well as to try to unpack the potential causal effects of place-specific institutions on students’ decisions, or what Clark refers to as the “intersection of cognition and context.” Still, while not claiming representativeness, I made concerted efforts to hear from a range of perspectives among international students. I attempted to create a sample that was characteristic of the differences within the population in terms of gender, types of
programs within each disciplinary grouping, and national backgrounds to match those in the wider composition of international students in each city. Therefore, I defend that the tendencies and experiences shared among my 67 student respondents point to similar patterns among the wider international student community.

Another concern of mine relates to representation with respect to the multiple identities of my informants. With such a diverse population, it is axiomatic that students will self-identify with different communities, such as along lines of ethnicity, race, class, gender, or other structural categories. I do not wish to essentialize the perspectives of students along any of these lines, rendering them spokespersons for a wider community, nor do I wish to remain silent where insightful patterns may be noted (McDowell 2008). My reaction is to allow the sentiments of respondents to be expressed clearly as their own as often as possible, and I have chosen to use quotes in the text, lengthy at times, for this reason (while also being careful to protect their anonymity). This is clearly a tense relation and one that needs careful negotiation; as a result, I believe I have erred on the side of over-emphasizing the similarities among students in terms of their disciplinary training and their experiences within cities, while underplaying other differences.

**Researcher positionality**

I also wish to address my positionality in this study given that interviews form my primary source of information. While it is notoriously “rare to see autocritical methodological reflection in economic geography papers,” I believe it is important to reflect on our role of researcher to acknowledge questions of purpose in our research and the relationship we draw between empirical evidence and theoretical claims (Barnes et al. 2007, 22). In particular, I take inspiration from many feminist commentators who have
provided reflection on the effect of social and power relations between the interviewer and respondent in shaping the information gained from interviews (Roberts 1981; Stanley and Wise 1993).

Recognition of these issues is important even when a researcher may share many traits with the researched, as was my experience in interviewing international students. For example, the student interviewees and I were often close in age, education level, and social status within the university, and we understood the types of work constraints that each was facing as graduate students. And while I am not currently an international student, I have studied and worked abroad for extended periods on several occasions in the past. I believe that these similarities engendered a situation of mutual empathy and respect. I was also aware, however, of varying differences that remained in terms of class, race, cultural background, mother tongue, disciplinary training, gender, and citizenship status. I raise this last point in particular because I realized in a few interviews at UofT (my home institution) that some international students perceived the interview with me (as a Canadian citizen, funded by the Canadian government through a SSHRC grant, as outlined on the interview consent form) as a chance for them to relay what pleased or displeased them about their current experience to the Canadian state. To address this unproductive dynamic, I consciously conducted the encounter as what Kvale (1996) calls an “Inter View” – a conversation between two people about themes of mutual interest, which encouraged students to be self-reflective on their situations and to represent themselves openly with a peer rather than to focus on what message they wished deliberately to convey. This is not to imply that social power relations were (or can be) neutralized or pushed aside, but this method helped me acknowledge the differences between us and to use these differences as a starting point for deeper reflection on the causal factors or issues that were leading
interviewees to hold certain views and strategies with regard to their work and personal lives.

In contrast, the interviews with policy-makers raised positionality considerations that bore closer resemblance to the issues discussed by McDowell (1998) in terms of interviewing 'elites.’ In particular, because these interviews were much more difficult to secure – especially with officials senior enough to speak with authority on policy directions – I often called on well-established colleagues from my previous work in European higher education policy to assist or highlighted this work in my contact letters. (See Appendix 6.) I was conscious that this method framed me in a certain light among interviewees, and I used this tactic to illustrate familiarity with the policy environment and to assert authority in the interviews so that I could push interviewers to give greater details about the policymaking process. This was particularly important on occasions when the window of time granted for the interview was short. I also recognize that my past experiences inform my understanding of the changing policy framework that we discussed. However, after considerable reflection, I remain uncertain as to how exactly these interpersonal dynamics shaped the exchange of information during interviews and my interpretation of it. Schoenberger (1992, 218-219) came to a similar conclusion when challenged by McDowell (1992) about her positionality in interviews with corporate leaders and wrote:

I’m not sure precisely what difference [my gender] makes, and I’m not sure how I would know. ... McDowell is right to remind us that we are people doing research and that questions of gender, class, race, nationality, politics, history, and experience shape our research and our interpretations of the world, however much we are supposed to deny it.

Ultimately, the responsibility rests with us as researchers to remain critically self-reflexive and open about the research process and to alert the reader about the possible influence of contextual and interpersonal factors in the information that we use for analysis.
Theory-building

Lastly, I wish to comment on the iterative nature of the research process and the deliberate process of developing theoretical insights from case studies. To begin, because of the considerable richness in the description of students’ experiences and strategic considerations gained through interviews, or the manner in which policy-makers justified their policies, all interviews were tape-recorded and transcribed verbatim. Hand-written notes from less formal meetings and personal observations during fieldwork were also typed. Together, these notes, along with the text from the policy documents and media reports, became the data from which I worked.

Through reading over these texts, and building on ideas developed during the fieldwork, I determined codes for reoccurring themes in the interviews, and looked for repetition, relationships, and patterns, both within and between the case sites. For example, in the transcripts with international students regarding their future plans, I reviewed what comments were made in relation to professional considerations, political concerns and strategies, social and professional issues, focusing on the language students used to describe their intentions, as well as referring back to comments made at the outset of interviews to contrast their current thoughts with their original intentions. I also related these themes to the theoretical literature that I was reading before, during, and after the fieldwork period, questioning whether students’ expectations and modes of rationalizing their choices were in line with ideas expressed in the current literature. In other words, data collection and analysis were not discrete processes, but processes that overlapped.

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5 I transcribed 67 of the interviews and hired a professional transcriber to do the last 30.
6 Given the quantity of texts that were produced, I used qualitative software (NVivo) to assist with coding and organizing the transcripts. However, I coded all interviews manually.
This was particularly the case with Chapter 1, as the conceptual framework I adopt was developed through an inductive research process, as many of my interview findings were unexpected, and could not adequately been explained with the ideas I had prior to beginning interviews. Therefore, themes emerged from the data in an iterative manner as I worked between materials and ideas in a process that Clark (2007, 191) describes as working "backwards and forwards between theory and the empirical world in a reflexive manner seeking *rapprochement*" (original emphasis). This process undoubtedly contributed to the analytically diverse nature of the theories I use in this thesis, but their “grounding” in their empirics of this research underlines their appropriateness and supports the validity of my claims.

**Structure of the thesis**

The three following chapters comprise the substantive contribution of the thesis, each presenting different comparative elements of the fieldwork in what are intended to be stand-alone papers. Each paper engages with a different theoretical literature, as a result of the theory-building process just described; however, the three papers complement each other by advancing our understanding of the issues defined as research objectives.

Chapter 1 sets the contextual framework of this thesis by examining the institutional and policy framework governing international students in both case sites. Through a comparison of the recent policies and initiatives introduced, this chapter investigates the ways in which different scales and spheres of government, as well as state-affiliated institutions, have initiated programs to attract and retain international students for short-term and longer-term economic benefits. While the original impetus for this study was to
compare the Toronto and London city-regions, many recent initiatives involve national level departments or a re-scaling of power and responsibility; therefore, the research investigates the multi-scalar framework overarching each city-region. Noting the striking similarity of these initiatives, I employ the emerging policy mobility literature within geography as my theoretical framework for this chapter to examine the parallel nature of policy changes within both sites during the mid-to-late 2000s, documenting the background discussions and rationales leading to their development. In particular, I investigate the rise of international student attraction and retention strategies evidenced in these areas: (a) overseas educational branding and marketing campaigns; (b) (im)migration regulation affecting international students during the pre-, during, and post-study phases; and (c) scholarships or funding changes for international students and HEIs. Through this investigation, these are the theoretical questions addressed: What has shaped the development and implementation of policies to attract and retain international students in Canada and the UK? To what extent are policy ideas being borrowed or developed in reaction to external change? And what differences remain between the implemented policies in both cases, and why?

Chapter 2 shifts the focus to international (post)graduate students and their decision-making upon graduation. Looking specifically at the perceptions and strategies among science and engineering students from diverse backgrounds, this paper compares the career, migration, and broader life plans that are held by students who have studied in London and Toronto. Theoretically, this chapter draws from the transnational migration literature as a conceptual basis from which to consider students as migrants with life worlds that span diverse political-economic and cultural contexts. From this basis, this chapter seeks to examine what commonalities can be found among students’ strategies and perceptions on completion of their advanced science degrees, and it considers whether the
institutional environments in which they study shapes their experience. In particular, these central theoretical questions are addressed in this chapter: How is a student’s individual agency, in terms of migration and career strategies, related to his or her specific life-stage and disciplinary training? And to what extent might their agency be dynamic and shaped by their experience of living in particular places? Through these questions, I seek to identify the interplay of individual professional and career-related concerns with personal issues and residency and citizenship strategies among graduating international science and engineering students.

Chapter 3 looks in greater detail at the career concerns of international students in London only. Although the regulatory environment is constant, this chapter is also comparative in that it considers the career strategies of international students with different academic training, namely students in postgraduate art and design programs from the Royal College of Art and in science and engineering programs from Imperial College London. Given this basis, I engage with the differentiated knowledge bases literature as a lens through which to explore the social and spatial concerns that international students with different academic training hold in terms of their job search behaviour upon completion of their studies. This paper addresses these central questions: How do students from different academic fields consider the transferability of their training and knowledge into different sectoral and geographic contexts upon graduation? And to what extent do the processes underpinning knowledge creation within different academic fields relate to the knowledge creation processes within industry?

In the conclusion, I revisit the main theoretical findings of each of the chapters. I also suggest additional avenues for research, based on the findings of this research. Finally, I provide considerations of policy implications resulting from this research.
Chapter 1

Strategically shaping the higher education policy landscape: competing for international students in Canada and the UK

Enrol here: Many countries regard universities as ideal talent-catching machines, not only because they select students on the basis of ability but also because those students bring all sorts of other benefits, from spending money to providing cheap research labour (The Economist 2006, 13).

Introduction

The last two decades have witnessed considerable changes in the spheres of higher education and research across the globe, but nowhere have the changes been as evident or rapid as with the issue of international student mobility. In particular, since the mid-1980s when the economic significance of the cross-border movement of students and researcher first came to the fore, the number of overseas students studying outside their home country almost tripled to 2.9 million in 2006 (deWit 1999; Scott 2005; Altbach and Knight 2007; Vincent-Lancrin 2008). During this period, international students have become increasingly valued for the immediate financial contributions they make through their tuition-fee payments to individual institutions, as well as for the longer-term contributions they make through their intellectual input to university research and innovation activities, as well as to broader labour force development, if they choose to remain after their studies (Kuptsch 2006; OECD 2008b; Vincent-Lancrin 2008; Douglass and Edelstein 2009). Yet geographers and other social scientists have tended to place greater attention on the patterns and experiences of the individuals involved in academic staff and researcher mobility, and the increasingly transnational arrangements of students and their families pursuing an overseas education (Mitchell 2004; Huang and Yeoh 2005; Waters 2005, 2006a, 2006b; Jöns 2007), or the changing relationships between universities and their respective national or
supranational (e.g. EU) governments (Dale and Robertson 2002; Larner and Le Heron 2005; Mitchell 2006; Ong 2006; Robertson 2006; Olds 2007). Less attention has been paid to the changing relations between governments and their influence upon each other in the policy-making process. This is particularly surprising as there has been a notable rise in recent years in government initiatives to better attract and retain international students, with the strategies adopted in different jurisdictions bearing strong resemblance to one another (Skeldon 2009). For example, within the past ten years, several national governments have launched national education “branding” campaigns (e.g. Australia, Canada, Malaysia, the Netherlands, New Zealand, the United Kingdom). Additionally, several of these countries, and others, have introduced immigration changes that give extra points to degree holders from their national higher education institutions (HEIs) when they apply for citizenship (e.g. Canada, Australia, New Zealand), have created immigration quotas for foreign graduates (e.g. Australia, Italy, USA), or have made regulatory changes to ease the transition from study to work permit status (e.g. Canada, France, Germany, UK, New Zealand) (Suter and Jandl 2006; Ziguras and Law 2006; Hercog 2008; Suter and Jandl 2008).

Despite the speed and the seeming connectedness of these changes, few studies recognize the interrelatedness of state policies seeking to attract students as part of a lucrative education export service industry and in relation to brainpower and highly skilled migrant competition. Moreover, most portrayals depict these policy changes as part of a natural trajectory and an inevitable outcome of economic globalization (e.g. OECD 2004; OBHE 2007). This chapter wishes to challenge such broad-brush narratives used to explain the seeming convergence of policies regarding international students and, instead, examine the process of policy-making, arguing that our current understanding fails to recognize the ways in which changes in one country affect those in another, as well as the importance of continued local variations.
The purpose of this chapter, then, is two-fold. First, I seek to examine a number of recent government policy initiatives intended to influence international student mobility patterns through comparative cases in Canada and the United Kingdom, as two countries that currently seek to expand inward student mobility for both short-term and longer-term economic benefits (Findlay 2006; Suter and Jandl 2006; Gera and Songsakul 2007; Kemp et al. 2008; Vincent-Lancrin 2008). Employing the emerging “policy mobilities” literature within geography as my theoretical framework and drawing on interviews with key policy-makers, I examine the parallel nature of changes across multiple policy spheres and scales within both countries during the mid-to-late 2000s and document the background discussions and rationales leading to their development. In particular, I investigate the rise of international student attraction and retention strategies evidenced in: (a) overseas educational branding and marketing campaigns; (b) (im)migration regulation affecting international students during the pre-, during, and post-study phases; and (c) scholarships or funding changes for international students and higher education institutions (HEIs). I emphasize the similar direction of these initiatives in both countries, especially at the federal level, despite minor differences in timing in detail, and argue that these changes are driven by a significant shift in political-economic ideologies and a competitive policy-making framework.

Second, I seek to extend the emerging policy geography literature, which, in an effort to document the entrenchment of neoliberal policies in a wide range of geographic contexts, tends to emphasize the common generalities of policy changes, without adequately paying attention to the locally contingent differences that persist. By exploring the different policy development trajectories in the case of Canada and the UK, I aim to contribute to this literature by arguing for greater recognition of the role of institutional
legacies and histories in shaping actual policy implementation and the reproduction of a differentiated policy landscape.

This chapter’s argument proceeds over four sections. First, I review different approaches from across political science, political sociology, and geography to theorize the widespread phenomenon of global policy mobility, as well as the continued role of inter-scalar relations and institutional evolution for understanding differentiated policy development trajectories. Following this, I discuss methodological considerations and the comparability of international student policies in Canada and the UK. The paper then presents the empirical findings of research conducted into regulations and policies in the UK and Canada as they seek to gain competitive advantage in the global race for international students. In both cases, I look to illustrate the strongly comparable rationales underpinning their state initiatives, while also considering how the place-specific multi-scalar institutional frameworks, along with the agency of particular organizations, lead to continued geographical differences. I conclude by discussing the significance of these findings for the policy mobility literature, as well as by raising questions for further reflection on global social justice concerns and the undifferentiated and uncritical adoption of economic rationales in advancing policy regarding international students.

**Mobility policies and ‘policy mobilities’: combining a diffusion and institutional approach**

This chapter adopts a conceptual framework that draws from two related but often distinct theoretical approaches that inform the emerging policy mobilities literature in geography. The first, with origins in political science and political sociology, seeks to understand the process by which different jurisdictions adopt similar policies. The second,
with roots in international political economy and institutional economic geography, explores the continued role of institutional variegation at a variety of different spatial scales to understand continued geographic differences in economic dynamics and policy implementation processes. In what follows, I review the main questions animating these interrelated, albeit often separate fields, and argue for value in integrating both perspectives within a single study for advancing our understanding of the changing policy landscape regarding international students.

First, the question as to whether and why different jurisdictions adopt similar policies over time is a well-established research area across the social sciences, often discussed in terms of the convergence, diffusion, or transfer of policy ideas from one jurisdiction to another (e.g. Hall 1993; Dolowitz and Marsh 2000; Drezner 2001; Holzinger and Knill 2005; Knill 2005; Dobbin, Simmons, and Garret 2007). Political scientists first began documenting this phenomenon in the 1960s, modelling the historical diffusion of policies across the United States within a modernist perspective of less advanced states (such as Mississippi and Nevada) “learning” about policy innovations from more organizationally advanced states (such as California and New York) on issues ranging from civil rights legislation, highway infrastructure, trade laws, and the performing arts (e.g. Walker 1969; for a review, see also Simmons and Elkins 2004; Peck 2009). However, the scholarly interest in the policy diffusion process has risen markedly in the last decade as a result of the accelerated and geographically widespread introduction of striking similarly economic and political liberalization policies throughout the 1980s and 1990s (Dobbin, Simmons, and Garret 2007). It is now widely acknowledged that several different processes and mechanisms have contributed to this extensive diffusion of liberal policies – a far cry from politically neutral portrayals of normative policy learning – but taken together, they have resulted in a fundamentally altered interdependent policy-making landscape wherein
“the policy choices of one country are shaped by the choices of others” (Elkins and Simmons 2005). To put it another way, neo-diffusionist authors like Dobbin, Simmons and Garret (2007) contend that even on issues of domestic economic and political conditions, external forces, such as changing ideas or changing incentives, influence and shape the internal forces involved in policy-making in many different political and geographic contexts (Simmons and Elkins 2003, 2004; Simmons, Dobbin, and Garret 2008). The lead authors in this field identify four commonly cited exogenous mechanisms in the current literature contributing to the diffusion of policies: coercion, learning, emulation, and competition (Dobbin, Simmons, and Garret 2007; Garret, Dobbin, and Simmons 2008; Simmons, Dobbin, and Garret 2008).

To elaborate, **coercion** typically involves the persuasion or manipulation of powerful nation-states and intergovernmental institutions in threatening sanctions or promising aid in exchange for particular policy changes. **Learning** theories assume policy-makers are rational decision-makers who get ideas for policy changes from the experience of external models, which changes their beliefs about the cause and effect of policies; however, many studies in this field assume diffusion to be evidence of learning, without looking for substantiation of the assessment of lessons learned prior to implementation. **Emulation** theories emphasize that the social acceptance of policies among policy-makers is key to understanding their diffusion, so the emphasis is on the social construction of policy norms and ideologies; in these instances, the actors involved in shaping the acceptance of practices (for example, expert networks and epistemic communities) are central to understanding the diffusion of policies. And lastly, **competitive**-led diffusion is the process by which the incentive to introduce a particular new policy (both the motive for change and the model

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7 For example, Mahon and McBride (2009) illustrate the role of the OECD in creating "expertise" that shapes the global governance of labour market, education, and social policy fields.
form) is driven by changes made by competitor jurisdictions. As Dobbin et al (2007, 463) explain, “a policy that gives one country a competitive edge leads others to follow suit.” Competitive-led diffusion tends to be manifest in strategies to develop market advantage or attract scarce-but-mobile assets, such as the lowering of taxes and ameliorating investment risks to attract global investment and keep exports competitive. However, it has also recently been applied in relation to immigration policies that seek to attract highly skilled migrants or talented workers. Shachar (2006), for instance, illustrates how most immigrant-receiving countries are now adjusting their national immigration policy frameworks in response to changes made in competitor countries, as each tries to out-bid each other in the “global race for talent.” Taken together, this diffusionist literature usefully provides a framework for developing precision around the types of exogenous mechanisms contributing to the adoption of similar policies in different countries. However, it generally fails to consider policy-making beyond the national scale.

Geographers, for their part, have only recently begun to contribute to this growing body of literature, wishing to explore critically the “convergence” of policy models as they relate to the spread of neoliberal ideologies at various and interrelated scales, particularly involving the urban scale (e.g. England and Ward 2007; Hackworth 2007; Leitner, Peck, and Sheppard 2007; Peck and Theodore 2009). As Brenner et al (2010a) argue, inter-jurisdictional policy transfers have been a key process involved in the “neoliberalization,” or diffusion of liberal economic regulatory transformations, over the past few decades. Early work in this vein focused on the rise of “translocal fast-policy transfers,” referring to the seemingly off-the-shelf policy techniques imported from one jurisdiction into another,

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8 According to Brenner, Peck, and Theodore (2010), the two other major dimensions associated with the extension and entrenchments of neoliberalization include regulatory experimentation and the formation of transnational rule-regimes.
chosen within a narrowly defined set of ideological parameters that suited the over-riding political-economic agenda, regardless of their appropriateness to the local context (Peck and Theodore 2001; Peck 2002; Brenner, Peck, and Theodore 2010b). Such fast-policies were characterized as involving an intensified process of extra-local lesson-drawing, involving reforms that horizontally and vertically crossed over traditional policy boundaries and transformed scalar relationships in the construction of competitive market-oriented regulatory experiments and institutional restructuring (Peck 2002, 2004).

More recently, however, geographers have sought to move beyond identifying the characteristics and forms of diffusing policies to exploring in greater detail the geographical and historical contingency of the policy-making process, which sought to problematize the various mechanisms leading to the widespread occurrence of "policies in motion" (Ward 2006) or "policy mobilities" (Peck 2003a; McCann 2008; Peck and Theodore 2010; McCann forthcoming). The attempt here has been to challenge portrayals of a hegemonic neoliberal economic regime, or "economic tsunami" (Ong 2007, 3), that is giving rise to the accelerating policy transfer process and, instead, to develop finer distinctions regarding the types of mechanisms, processes, and peoples involved in policy changes. Several studies within this vein adopt a post-structural or neo-Foucauldian approach to explore the diverse agents, networks, technical evaluations, and expert "truths" involved in constructing place-specific neoliberal policies, which usefully illustrates the contextualized and contingent "assemblage" of specific market-oriented regulatory projects as they are transported from one environment into another (e.g. Larner 2003; Ward 2006; Ong 2007; McCann 2008; Larner and Laurie 2010; Prince 2010; McCann forthcoming). This works tends to be ethnographic in nature and valuably brings into the analytical lens the influence of an expanded range of actors beyond classical policy-makers, documenting the ways that transnational "policy objects" are reconstituted in different places as they involve the
translation of ideas and an alignment of divergent political motives at particular moments and places (Larner and Le Heron 2005; England and Ward 2007; Prince 2010). However, by virtue of paying detailed attention to the particularities of policy transfer as a “technical system” that comes together in policy-making locales in unique and disjunctive ways, this analytical approach tends to neglect the macro-spatial mechanisms that produce enduring institutional geometries and the inter-jurisdictional relations that shape the context in which new policies and regulatory experiments are introduced (Peck and Theodore 2010).

In other words, while we may gain greater insight into the particular conditions and practices that contribute to the development of specific market-driven policy calculations, our understanding of the ways in which institutions influence one another at the macro-scale, shaping what Brenner et al (2010b, 24) refer to as the “context of context,” or the interconnected institutional landscape that creates the parameters and patterns within which policies travel and become conditioned and reconstituted – whether neoliberal or not – fades to the analytical background. In contrast, then, this paper argues for renewed attention to the broader relationships between jurisdictions and the different logics that underpin their interactions, as proposed with a diffusionist approach, to help us gain insight into the ways that the introduction of common policy diffusions may be a result of states competing with and responding to one another.

The second approach shaping this chapter’s conceptual framework comes from the call within economic geography for greater recognition of the role that institutions play in producing geographically distinctive economic structures (Martin 2000; Amin 2001; Gertler 2004; Peck and Theodore 2007; Gertler 2010). This analytical approach advocates

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9 Peck and Theodore (2010) characterize these two different streams in policy studies as governmental approaches and institutional political economy approaches and suggest that the ability to reconcile their ontological differences remain an open question.
considering how variations in national and regional institutional architectures, with their
distinctive practices and ‘cultures,’ shape capitalist activities and political-economic
dynamics. As Gertler (2010, 11) writes, an institutionalist approach “is considerably more
sensitive to the documentation and understanding of institutional variegation at a number
of different spatial scales.” Such a perspective has close analytical parallels with the
“varieties of capitalism” literature from comparative international political economy, which
(among other substantive and theoretical contributions) provides empirically rich accounts
of the continued differences among national forms of capitalism, despite common shifts in
political-economic tendencies, because of the path-dependent, non-converging nature of
various national institutions (e.g. Hall and Soskice 2001; Thelen 2004; see Peck and
Theodore 2007, for a critical review). While the shortcomings of the varieties approach are
well known – inter alia for fetishizing the national scale and presenting a static portrayal of
institutional coherence – the approach usefully illustrates the potential mediating role, or
continued significance, of national and regional institutions, regulatory structures, and
traditions against common political-economic changes, which as suggested above, have the
tendency to lead to homogenizing or converging policy initiatives (Hay 2000; Skogstad
2005). Economic geographers seek to rectify the weaknesses of the varieties approach by
bringing a multi-scalar and dynamic lens, as well as sensitivity to the power dynamics of
relational geographies to understandings of cross-border phenomena (Peck and Theodore
2007; Gertler 2010).

I posit, then, that these two approaches – diffusionist and institutionalist – are
analytically complementary and usefully combine to understand both the similarities in
direction as well as continued differences involved in international student policies. On one
hand, the diffusionist approach seeks to challenge simplifying portrayals of a hegemonic
neoliberal economic globalization process and develop greater analytical precision around
the forces contributing to widespread policy transfer through sensitivity to exogenous factors and external incentives in the policy-making process. On the other hand, the institutionalist approach recognizes the socio-spatial and institutional embeddedness of policy-making, underlining that “context matters,” not only with respect to the constitutive roles of historical and geographical institutional landscapes have in shaping the reception of mobile policies, but also in the ways in which problems are defined in particular environments. The challenge is to balance considerations of the mobility of policies with recognizing the slowly changing nature of institutional legacies and persistence of geographic difference. This chapter employs this framework to ask the following questions: What has shaped the development and implementation of policies to attract and retain international students in Canada and the UK? To what extent are policy ideas being borrowed, copied, or developed in reaction to external changes? What has enabled the adoption of certain policies, or amongst whom has there been an alignment of interests, and what have been the critical moments? And lastly, what differences remain between the implemented policies in both cases?

Selection of case studies and methods: Seeking to attract and retain international students in Canada and the UK

A comparative case methodology provides the opportunity to document policy trends and to discern the potentially differing effect of geographic variation in regulatory and institutional cultures (see Saxenian 1994; Gertler 2004, 2010). I argue that Canada and the UK are important cases to consider the similarity of initiatives regarding international students for several reasons. First, both countries have been identified as having a rising interest in increasing their international student market share, as well as in the potential contributions international (post)graduate students can make to the national innovation
agenda (Findlay 2006; Gera and Songsakul 2007; Kemp et al. 2008; Vincent-Lancrin 2008). Second, on this last point, both countries already attract a large number of students as the (post)graduate level and are currently among the top three in the world in terms of having the highest proportion of international students among all doctoral students; Switzerland is highest at 41.1 per cent, followed by the UK at 36.8 per cent Canada at 27.3 per cent (Vincent-Lancrin 2008, 111).10 Third, Canada and the UK have broadly comparable systems of higher education, in that education remains largely publicly funded (supplemented by student-paid tuition fees) and enrolment levels are rising, with universities in both countries concerned about decreasing state contributions. And fourth, the funding context for international students is similar, in that the governments in both countries also stopped providing funds to HEIs to support enrolled overseas student in the 1990s, causing tuition-fee levels to become differentiated and much higher for international students. Around this time, both countries also generally disallowed overseas students to receive individual state-funded research council scholarships for graduate studies, although overseas students can be funded through grants received by their supervisors.11

Nonetheless, there are also important differences between the two cases that are useful in order to advance our understanding of which factors and processes may, or may not, lead to continued differences in policy development. First, the UK and Canada currently hold different positions in the global market for international students. The UK is considered a “major player” in the field of international education (along with the USA and...

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10 The United States is a near fourth at 24.5 per cent. The UK figure includes the proportion of EU students.
11 Exceptions include the Overseas Research Student Award Scheme (ORSAS) in the UK and the recent Vanier Scholarship in Canada, as discussed later. In the UK, EU students are entitled by law to be treated on a like basis with UK home applicants, meaning they have equal access to UK HE places and pay the same fees; however, one remaining difference is that EU students do not have same access to UK government student financial supports (e.g. students loans and bursaries), although this issue is presently in the courts. In 2007-2008, there were 1,964,315 UK domiciled students, 112,150 EU students and 229,640 non-EU (overseas) students enrolled in UK HEIs (HESA 2010).
Australia), receiving in 2006 roughly 330,000 students, or 11.3 per cent of the global market; in contrast, Canada has been labelled an “emerging player” by the OBHE (along with Japan and New Zealand), receiving just 5 per cent of the total flow of mobile students, which translates into approximately 75,000 initial student visas being awarded each year (OBHE 2007; CIC 2008a, 78). Second, they can be contrasted in terms of their “offer” for international students, meaning that there are qualitative differences in their general attractiveness as perceived by potential students. For example, many consider UK HEIs to carry a reputation of top quality in multiple geographic contexts (especially in its former colonies), while the cost of living and tuition fees levels are very high. In Canada, the reputation of its HEIs is generally less well known, and tuition fee levels for international students are generally considered lower in Canada (OBHE 2007, 38). Third, while both countries receive students from a very diverse mix of national origins, the main source countries differ. In the UK, the top-five source countries have tended to be China, India, Ireland, the United States, and Germany (in descending order), while for Canada they are China, South Korea, France, the United States, and Japan (see Figures 1.1 and 1.2). There is considerable further variation of these trends along regional, institutional, level of education, and program lines within each country. Note, for example, the different top source countries for all university-level students to the UK compared to the top source countries for postgraduate students in London (Figures 1.2 and 1.3). Lastly, while the university and college levels have tended to be the focus of international education policies

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12 According to the OBHE (2007), between the “major” and “emerging” players are the “middle powers,” comprising Germany and France.
13 There are contradictory effects with high tuition fees. Some students consider high fees to be a mark of high quality; for other students, high fees are a deterrent.
14 Although nominal tuition fees have increased quickly in Canada in recent years, and the Canadian dollar has risen in comparison to the British pound, Canadian tuition is still generally considered moderate compared to tuition in countries such as the United Kingdom and the United States.
15 Canada’s official policy is to not set quotas on student visa allocations. The UK does officially set quotas (in terms of total numbers, and presumably by national origin, although it is difficult to obtain these figures.)
in both countries, there is also a difference in terms of the considerable interest in the secondary level of education, as well as in language training and university quality programs in Canada (see Figure 1.4).

Figure 1.1: Foreign students present in Canada, by top source countries (1999-2008)

Source: CIC 2008: note that figures relate to total number of students on temporary student permits at all levels of education\(^{16}\)

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\(^{16}\) As a significant proportion of international students in Canada obtain permanent residence status during the course of their studies, these figures likely under-represent the number of individuals who have come to Canada primarily for study purposes.
Figure 1.2: International student enrollment figures in the UK, by top source countries (2006-2009)

Source: Author’s compilations, based on UKCISA 2010, using HESA data.\(^{17}\)

Figure 1.3: International postgraduate research students in the UK, by source country, select years (2002-2007)

Source: Kemp et al. 2008, Annex 2: 4

\(^{17}\) Note that the figures for 2007/08 do not include students “writing up,” who were included in previous years, and therefore the data are not directly comparable.
In terms of the policy context, the UK is more centralized than Canada, although higher education was devolved in 1999, resulting in England, Wales, Scotland, and Northern Ireland having their own responsibility over universities and colleges. Nonetheless, the central UK government retains authority over spheres relevant to international student mobility such as science and innovation, foreign affairs, and immigration and visas. Moreover, the UK is a participant in the on-going creation of European Higher Education and Research Areas, meaning that the country’s higher education landscape and its involvement in international student mobility issues is influenced to a certain extent by

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18 ‘Secondary or less’ refers to primary or secondary institutions in Canada; ‘Trade’ refers to technical and vocational institutions and colleges (non-university); ‘University’ refers to undergraduate and graduate level studies; ‘Other post-secondary’ refers to post-secondary study not at the university or trade level (e.g. language institutions, private institutions and university qualifying programs); ‘Other’ refers to foreign students not classified in any of the above levels of study (CIC 2009).
regional European collective developments. There are no comparable continental reforms occurring in North America. In Canada by contrast, as a federation, the provinces have full authority for education and share authority with the federal governments over immigration, while science and research and foreign affairs remain federal responsibilities, similarly to the UK. Therefore, the constitutional and institutional frameworks in Canada and the UK differ, although both involve overlapping scales of government, a diverse range of state departments, and a variety of stakeholder organizations that continue to shape the complex and dynamic institutional context for international students. However, this lack of perfect equivalence provides the opportunity to work from “contextualized comparisons,” or a detailed understanding of how particular challenges have been translated into policies in various state settings, thus providing the opportunity to gain insight into similar processes taking place in different contexts while recognizing important institutional differences that remain (Locke and Thelen 1998).

The discussion that follows highlights noteworthy government-led initiatives intended to influence both the patterns of attraction and retention of international students and the motives for their implementation in Canada and the UK. The analysis draws primarily on 29 semi-structured interviews conducted with senior policy-makers and advocates in government departments and representative organizations in the spheres of higher education, immigration, and economic development in both countries between October 2007 and December 2008 (see Table 1.1). This methodology follows the examples of Peck and Theodore (2001) and Cook (2008), who illustrate the value of drawing on interviews with policy-makers to examine the motives and processes involved in multi-sited policy changes. My interview goal was to determine how relevant organizations were involved in setting policy priorities or implementing initiatives to attract and retain students, and what were their reasons for pursuing these changes. In addition, I also sought
to understand the evolving informal and formal relationships between various policy organizations and the ways in which they communicate and interact with each other in order to under changing institutional geometries and the development of policies that cross over traditional policy spheres. In some cases, interviews were conducted with multiple people within the same organization or unit to corroborate responses, and all lasted between 45 minutes and two and half hours. At the outset of interviews, participants were given the choice whether to speak anonymously or on-the-record, and two-thirds of interviewees chose to speak anonymously as they preferred to retain their privacy and speak more openly and freely about colleagues or related departments without concerns of potential reprimand. Given this constraint, I chose to protect the identity of all informants in what follows, only making reference to the organizations where interviewees worked. I supplemented these discussions with a review of public and internal policy documents and briefing notes of the various organizations and departments, pre-submission lobby documents, state budgets, and media reports from 2005-2009 to further contextualize the research and to validate findings from the interviews. I analyzed the interviews and secondary sources iteratively with the theoretical literature to determine the rationales and possible processes at work within these policy changes.

Table 1.1: List of organizations interviewed

In Canada:

- Association of Universities and College of Canada (AUCC)
- CEC Network
- Citizenship and Immigration Canada (CIC)
- City of Toronto, Economic Development
- Council of Ministers of Education, Canada (CMEC)
- Department of Foreign Affairs and International Trade, Canada (DFAIT)
- Province of Manitoba, International Education Department
- University of Toronto
In the UK/Europe:

- Association of Graduate Careers Advisory Services, UK (AGCAS)
- British Council, Education UK Marketing
- Department of Universities, Innovation and Skills, UK (DUIS)
- European Research Council (ERC)
- European University Association (EUA)
- Greater London Authority, Mayor of London's Office (GLA)
- Imperial College London
- InnovationRCA
- London Development Agency
- London Higher/ Study London
- Royal College of Art
- UK Council for International Student Affairs (UKCISA)
- Universities UK
- University of London, School of Advanced Studies
- University of the Arts, London

Shaping the terrain: (im)migration, marketing and scholarships

Case one – Examples from the United Kingdom

The Prime Minister’s Initiative and “Education UK”: overseas educational marketing

The UK is regarded as exemplary in national coordinated overseas education marketing activities in the eyes of many countries. Its significant involvement began in 1999 as part of a five-year project launched by then-Prime Minister Tony Blair with the “Prime Minister’s Initiative to Attract More International Students to the UK,” or more simply, the “PMI.” As the name suggests, this initiative’s primary objective was to increase enrolment of international students in UK universities and colleges by 75,000 (50,000 in higher education; 25,000 in further education). The rationale was that increasingly the number of fee-paying overseas students would provide valuable financial contributions to the UK’s HEIs and strengthen education as a service export industry. This reason was augmented with the contention that attracting more “top” students from around the world would also serve to maintain and enhance the UK’s reputation as a quality education and research
destination, and also potentially to enrich national research activities in an innovation-based economy. In addition, the UK could establish longer-term influence and association with foreign students who were expected to become future political, business, and research leaders in the home countries. Therefore, the rationale underpinning the PMI was to promote UK education internationally to increase the UK’s international education market size, improve global perceptions of its expertise and authority in higher education and research, as well as increase the UK’s ‘soft power’ through students.

To meet the PMI’s objectives, a multi-departmental Strategy Group was created to oversee the activities that crossed traditional departmental boundaries. The activities were coordinated by the then-Department for Education and Skills (DfES) and the British Council and included creating an “Education UK” umbrella brand and managing a corresponding overseas marketing strategy to promote the UK’s national educational offer. In addition, the PMI sought to increase the number of Chevening scholarships to overseas students to attract more “top” students (i.e. future leaders) and streamline visa entry procedures and work conditions for international students (issues to which I return in the following

19 A respondent involved in the development of the PMI recounted one of the original motivators accordingly: “...[the PMI] came about as a result of a trip which Tony Blair, our then-PM, made to China. In the course of meeting various dignitaries he met the mayor of Shanghai [who] was very well disposed to the UK and everything that it offered. And it transpired that the reason why he was well disposed to the UK was because he had studied there. And so a light bulb appeared before Blair’s head and he thought this is good, this is good for relations for the UK, this is something that we should encourage.”

20 Notably, this program was developed around the time that the Research Assessment Exercise (RAE) was introduced in the UK, which fundamentally changed the funding framework for UK HEIs, and required many institutions to find new sources of external funds as the monies that they received from the research funding councils was reduced. This was also the era of ‘New Labour’ and ‘Cool Britannia.’
sections). The PMI target inflow numbers were quickly exceeded, and the five-year project was considered a government success.

However, rather than conclude the PMI activities after the initial objectives had been reached, Blair launched a second phase of the project in April 2006, known as the “PMI-2,” which even more clearly articulated the market benefits and potential longer-term economic and political significance of international student mobility to the UK. Government press releases and British Council publications at the time justified the follow-up five-year project as responding to increased competition in the global market for international students. One British Council report (2007, 4) stated, “With an ever increasing number of countries active in the international education market, students have more choice in courses and study destinations than at any time in the past.” An interviewee involved in the PMI-2 developments was more explicit in naming the competitor countries:

I think it’s still the case that we are second after the US in terms of destination for international students, but, you know, we’ve got close competition from places like Germany, which are increasingly offering courses in English, and as a result of Bologna, they’re also shortening their degrees considerably. And Australia is obviously, and New Zealand to a lesser extent because New Zealand is a smaller place, but Australia is also a major competitor... So we needed to renew our efforts to remain competitive against the changes made in these countries.

Generally, this heightened competition in the market was described as coming from multiple factors, which included traditional sending countries of international students.

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21 The British Chevening Scholarships scheme provides scholarships for young “highly-flying” international postgraduates from all countries to study in the UK. Its aim is “to attract future leaders, decision-makers and opinion-formers to the UK for a period of postgraduate study at a formative stage in their careers” (BIS 2006, 26). The scheme is funded by the Foreign Commonwealth Office (FCO) and managed by the British Council. Roughly 1000 awards are allocated each year.

22 Universities also generally supported the project, as many welcomed government assistance to enhance the general reputation of UK institutions, especially because of the financial dependence of many UK HEIs on overseas student fees for their operating budget; furthermore, the concern about potential faculty “talent wars,” the way in which international students can feed into a supply chain for academic staff, and the contribution international students make to providing adequate student numbers in departments less popular with UK students generally brought university leaders onboard for this initiative (UUK 2007).
improving their domestic education provision, continued problems with the UK’s restrictive immigration regimes acting as a deterrent for incoming students, unfavourable movements in the GBP exchange rate that made the UK (and London in particular) an ever-more expensive place to live and study, and other national governments investing in their own marketing campaigns that emphasized their different advantages (e.g. lower or no fees, climate, attractive culture, etc.) (British Council 2007). In other words, PMI-2 was formed, in part, in reaction to the perceived threat of creeping competition from other countries adopting the UK’s own strategies and a general weakening of the UK’s established top-rank position.

To better compete and maintain the UK’s global standing, the PMI-2 comprised four main strands of activity: (a) continuing the “Education UK” branding activities, with a narrower focus on marketing themes that alternately emphasize students’ post-graduation employability potential and the “value” of a UK education around the world, the innovation of UK teaching and research, and the UK’s English-language strength; (b) identifying priority countries to “diversify” and “consolidate” the UK export market, as it was feared that the UK was becoming overly reliant on a small number of source countries; (c) developing strategic partnerships and alliances through ministerial policy dialogues and funding HEI-driven teaching and research partnerships; and (d) working with non-governmental agencies to benchmark students’ quality of experience. Despite the more varied set of activities in PMI-2, the principal targets continued to be set in terms of net student immigration, seeking both to increase international student enrolment by an additional 70,000

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23 The priority countries are Australia, Bangladesh, Brazil, Canada, China and Hong Kong, Ghana, Gulf states, India, Indonesia, Japan, Korea, Malaysia, Mexico, Nigeria, Pakistan, Russia, Singapore, Sri Lanka, Taiwan, Thailand, Turkey, USA, Vietnam (British Council 2007, 3).
24 One policy-maker described the need to diversify the source countries as also partly due to the leveling off of interest from Chinese students, and the need for the UK “to make sure that all eggs aren’t in one basket.”
students in higher education and 30,000 in further education and to double the number of countries sending more than 10,000 students each year by 2011 (British Council 2007). The activities also continued to be governed through a cross-government and sectoral organization, with the various partners contributing to a budget of £7 million per annum.

Changes to migration regulation and work permits for international student and routes to long-term residency in the UK

Concurrent with the introduction of the PMI initiative, the UK has also introduced a broad range of major reforms within the sphere of immigration regulation. Since 1997, again under then-PM Tony Blair, the UK has had a fundamental reorientation of its immigration policy away from previous administrations’ “zero immigration” stance towards a new “managed migration” approach that framed migration as a key element to meeting the labour needs and skills shortages for the UK economy (Flynn 2005). In the ten years that followed, there were no less than five new immigration acts and numerous policy strategies and parliamentary bills, with international students receiving a significant share of the attention (Sommerville 2007). While an entirely new immigration system based on a points-based admission system was announced in 2005 and continues to be implemented in stages in the UK, this section focuses on the rash of student-related immigration initiatives in the mid-2000s.

The partners involved are these: Department for Innovation, Universities, and Skills; British Council; UKvisas; Home Office; UK Trade & Investment; Scottish Executive; Welsh Assembly; Department for Employment and Learning, Northern Ireland; Higher Education Funding Council for England; Learning and Skills Council; Universities UK: Association of Colleges; English UK; GuildHE; UK Council for International Student Affairs; Association of Graduate Careers Advisory Services; Higher Education Careers Services Unit; Graduate Prospects; and National Association of Student Employment Services (British Council, 2007, 13). The number involved in strategic decision-making was later reduced to a smaller number of state departments as a result of the challenges in working with so many partners.
The primary area of policy change regarding international students in the UK was post-graduation work permits for international students, although the motives behind these initiatives have proved complex, somewhat contradictory, and controversial. To begin, in 2004, a new initiative called the “Science and Engineering Graduates Scheme” (SEGS) was introduced to allow graduates of science and engineering programs, or what the government considered potentially innovation-related academic fields, to remain in the UK after graduation on a one-year work permits. This scheme was introduced as part of the Science & Innovation Investment Framework by HM Treasury as part of a strategy to encourage greater numbers of scientists around the world to establish links with the UK, and it illustrated a first step towards viewing international students as a potential source of highly skilled labour that should be encouraged to remain in the country to the benefit of the national economy after their studies (Findlay 2002; King et al. 2004). Not long afterwards, the Scottish Parliament introduced a corresponding initiative called the “Fresh Talent” scheme (2005), a broad program that sought to address Scotland’s labour market shortages and demographic concerns, including the offer of a post-graduation work permit to encourage international students to remain in Scotland after their studies, as in the words of one policy-maker, “following the lead of countries like Australia, Canada, and New Zealand.”

However, immigration and work permit regulations are not fully devolved responsibilities in the UK, so other UK regions found the Fresh Talent initiative inappropriate in the UK context. Moreover, because UK HEIs have become dependent upon fee-paying overseas students and compete amongst each other for their enrolment, several

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26 In addition to encouraging overseas students to remain post-graduation, the initiative also sought to encourage Scots to remain in the region and for Scots living overseas to return “home,” as well as to provide additional scholarships for overseas students at the Masters and PhD level. Another policy-maker stated: “Scotland is competing with other nations for highly-skilled migrants, and a number of these countries, such as Canada, the United States, Australia and New Zealand, have much more experience in attracting skilled migrants.”
institutions deemed this initiative to be giving an unfair market advantage to Scottish universities. Arguably, the subsequent UK “International Graduate Scheme” (2007), which offered post-graduation work permits for up to two years to all overseas nationals graduating from a recognized UK institution, regardless of region or discipline, was introduced to level the recruitment field for institutions across the UK, while also enhancing the UK’s overall attractiveness with regard to other major student-receiving countries (Findlay 2006). At the same time, stakeholders arguing on behalf of international students contend that allowing them to stay in the UK after their studies contributes to their general educational experience (UKCOSA 2004), also making the UK a more attractive educational destination at the outset. Therefore, while it would be overstating the case the suggest that the UK has adopted a deliberate strategy to retain overseas students for the long-term migration potential – clearly the focus remains on gaining direct short-term fee payments – nearly all policy-makers interviewed acknowledged that a movement has begun towards recognizing the potential intellectual contributions these students can make to science and innovation-based economic development strategies and the creation of policies to enable them to remain after graduation. Yet nearly all informants also explained that an explicit tactic to recruit international students as part of a skilled migration strategy would not be publicly acceptable because of an unfavourable climate regarding augmented migration levels (particularly from EU accession countries) and continued fears of migrant students as a potential security threat.27

27 One policy-maker frequently interacting with the UK Home Office explained the tensions around changing student migration policies accordingly: "...with our colleagues in the Home Office because there is a tension there between welcoming genuine students and not making it too complicated for [prospective students] because they can always go somewhere else, pointing out the economic benefits to the economy at large, not just to the institutions... obviously since Sept 11th and the bombs in London, [the Home Office] is looking at students as potentially an awkward category as migrant."
Overarching these direct student-oriented initiatives has been the introduction of large-scale immigration reforms in the UK, which, in the words of the UK Border Agency (2008b, 4), represents “the biggest shake-up of our immigration system for 45 years.” Making reference to the new system that draws directly from the Australian and Canadian models, the UK has unveiled plans to create a new elaborate points-based system that aims to quicken the entry of highly skilled migrants (Flynn 2005). This points system seeks to set out “objective and transparent criteria to produce a structured decision-making process,” dividing applicants into five tiers, compared to the previous 80 different categories, oriented primarily towards meeting labour market objectives (UK Border Agency 2008a). Students as Tier 4 represent the largest category. While rectifying the complicated and generally unpredictable process of the previous system, the program also aims to clarity the “eventual ‘integration’ and attainment of citizenship” (Flynn 2005, 463). In other words, the UK has illustrated that it seeks to link routes of entry, including for students, to potential offers of citizenship to “advance national interests under conditions of accelerated global competition” for talent (Shachar 2006, 144).

Taken together, these changes represent a significant shift in the UK government’s use of controlled immigration to meet competitive brainpower and workforce concerns. Particularly relating to international students, the PMI programs represented high-level central commitment to adjust regulations to improve visa entry procedures for foreign students and the potential for them to remain after graduation, spurning communication and cooperation across different government agencies and stakeholders. Formally, it led to

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28 UK Home Secretary Jacqui Smith announced in February 2008, “The introduction of our Australian-style points system will ensure that only those with skills the country needs can come” (UK Border Agency 2008a). Another interview respondent also described the new system as “modeled on the Canadian system.” Originally designed to target highly skilled migrants, it now also encompasses low- and middle-skilled migrants.
the creation of the Joint Education Taskforce in 2005, as a consultative/advisory body to try
to ensure that the development and delivery of the UK Border Agency’s work supported
other education-related government initiatives.\(^2^9\) However, despite these communication
and coordination efforts, early reports have indicated many problems with the new system,
with universities concerned that the new system places a heavy burden on them to provide
and implement institutional supports to their various “sponsorship” requirements under
the new legislation.

“\textit{Study London}: marketing London as the “knowledge capital”

Concurrent to these national initiatives, a few UK regional governments also
developed international education marketing campaigns. London’s campaign is particularly
noteworthy for representing the emergence of a city-level initiative, based on the
recognition of the economic value that international students bring to the area in which
they are studying (Oxford Economics 2007). London’s involvement began to take form in
the early 2000s as part of the institutional restructuring occurring in the UK under the
Labour Government’s program of Devolution and Constitutional Change (1997-1999),
which involved the creation of regional development agencies (RDAs). London situation’s
was unique by being the only region to have a newly established elected assembly,
consisting of a Mayor of London’s Office and a corresponding but separate Greater London
Authority (GLA) and London Development Agency (LDA).\(^3^0\) During this period of change,

\(^2^9\) This taskforce involved Universities UK, UKCOSA, the Home Office, and DfES as the main forum to
discuss immigration and visa issues for students.

\(^3^0\) The LDA was established almost 18 months after the other RDAs in relation to the re-
establishment of the London Mayor’s Office. The LDA reports to the Mayor, who is elected through
local elections; the LDA gets some of its funds from central government, but nearly 90 per cent of its
funding comes from local government. In contrast, the other RDAs get their money from and report
to the Department for Industry.
higher and further education representatives were brought together to contribute to an interim body directing local economic development activities before the LDA was established.\textsuperscript{31} Prior to this period, no organization existed to collectively represent London’s universities. This interim body encouraged institutional leaders from London’s 42 HEIs to come together to establish a legitimate voice to represent the sector within regional politics and resulted in the creation of London Higher. A subsequent structure of collective regional HE agencies that generally overlap the RDA boundaries has also been established across the UK, although each agency has had different initial experiences as each has been involved in different regional activities with differing budgets.

One of London Higher’s earliest initiatives was to establish a program that sought to collectively assist the city’s universities in attracting more international students to their campuses. This program evolved into “Study London” in 2002, a shared-cost initiative managed by London Higher with matching funds from the LDA. Despite its relatively small budget and staff, the Study London program aims to collectively market London as an “educational destination” and a global “knowledge capital,” in an effort to increase the overall number of students coming to attend the city’s institutions. While the impetus for Study London comes from the collective university organization, it is strongly aligned with the other promotional and entrepreneurial activities of the Mayor that are brought together under the “London Unlimited” umbrella, which unites the work of Visit London, the agency intended to promote London’s tourism offer, with Think London, the city’s foreign direct investment agency, along with Film London, London’s film and media agency.

\textsuperscript{31} The FE and HEIs were brought together with the London Chamber of Commerce and London First (London’s business organization) to create the London Development Partnership, an interim body without power or money. The London Development Partnership formed the basis for the subsequent LDA.
In this context, the Study London campaign targets other cities as its rival contenders, primarily Sydney and New York City, unlike the Education UK campaign that views other national governments as its competition. Accordingly, Study London’s marketing campaign seeks to promote London as an attractive urban environment in which to conduct one’s studies and highlights London’s professional opportunities, its cultural institutions and the multicultural nature of the city (or its “breadth, depth, and diversity,” in the campaign’s language). The marketing products and activities include these: the production of glossy brochures that are made available in London’s foreign trade offices in Mumbai, Shanghai, Delhi and Moscow; a website and newsletter, with on-line promotional games; and a map using a stylized tube system to illustrate where the various institutions are in London.32 Most on-line information is also translated into Chinese, Urdu, and Hindi to match the key economic markets identified by the Mayor. Study London was also involved in Mayoral trips to India and China in 2006 and 2007.

Study London’s case illustrates the transfer of international marketing ideas by national governments and HEIs to the municipal government level. For example, one interviewee involved in its development stated, “Our task is similar to what EducationUK does, but our emphasis is on citywide collaboration in marketing the [London] universities.” As with the national UK authorities and HEIs, the focus in London’s case is on international education as a service market (estimated to be worth £1.5 billion per annum to London’s economy) (Oxford Economics 2007).33 Moreover, the program emphasizes the potential

32 See [http://www.studylondon.ac.uk/](http://www.studylondon.ac.uk/). The map initiative arose after Study London managers conducted focus groups with international students in the competitor cities of Sydney and New York who felt the “complexity” of London was a barrier.

33 This figure is based upon the value of international student tuition fees, subsistence spending, and visits from friends and relatives.
relationships the city can establish with its former overseas students. In the words of an interviewee involved with the London initiative:

[Study London believes] your relationship with London is just starting here. You might think it finishes with your degree, but actually that’s when it starts. We want you to think of London as the place to come back and visit when you’ve grown up, or to come back to London with your company to do collaborative research, stem-cell research or whatever. We want that long-term relationship.

As with central government officials, however, Study London representatives were careful to state their intention was not to encourage students to remain after their studies, as they believed that would be viewed as politically unacceptable. Study London’s campaign also did not seek to align its efforts to shape inward student mobility patterns to match local industrial skills needs nor to couple students’ research fields with targeted innovation strategies for the city. Therefore, Study London’s primary focus is not to further advance the developing local brainpower strength but to out-do competitor cities in terms of attracting higher quantities of fee-paying overseas students, and on developing future alumni support for the HEIs and city’s business community.

**Scholarships for overseas students: resting on past laurels?**

Despite the critical role that funding plays in influencing where international students choose to pursue their studies, especially at the (post)graduate level (UKCOSA 2004), the UK government makes relatively little state funding available to international students, and informants indicated that this is not a priority issue for the government. Currently, less than 10 per cent of international postgraduate research students in the UK receive funding from UK government sources (Kemp et al. 2008, 76). The remainder fund their tuition and living expenses through scholarships from their institutions (roughly one-quarter), or personal sources (e.g. part-time employment, family, loans) and scholarships
from their home countries. The funding that is available ranges from scholarships like the Overseas Research Student Awards Scheme (ORSAS), which covers the difference between domestic and international student fee levels, to the Dorothy Hodgkin Postgraduate Awards (since 2003), which offer a small number of generous number of scholarships co-sponsored by the UK research councils and private sectors companies to students from select countries, to the UK Research Councils’ extending of their scholarship programs to EU nationals (although they currently receive less than 4 per cent of the total granted) (Kemp et al. 2008, 51). Other funding aimed at Masters level students, namely the Chevening scholarships or various other scholarships administered through the Association of Commonwealth Universities (ACU), were established as elite programs to serve diplomatic purposes and often do not allow Masters students to progress with their studies to Doctoral level programs, illustrating the continued prioritization of diplomatic and market aims of international education policies in the UK. However, interviews with policy-makers did suggest that there is a growing interest in new programs seeking to emulate high profile programs in other countries for early career scientists as part of the UK’s Global Science and Innovation Forum (BIS 2006). One respondent described one such idea accordingly:

“[We’re developing] a new sort of scholarship scheme... there was something in Germany called... the Humboldt scholar? Once you’re one of those it’s sort of stamped on your forehead forever ([laughs]), and after that they will try to keep in touch with you. The idea was to do something a little bit similar.”

Nonetheless, despite looking to models in peer countries, such proposals largely remain in their infancy in the UK.

34 The allocation for theses awards in competitive between students and between institutions, with the exception of the ORSAS awards that allocated to each institution according to a HEFCE formula. The Dorothy Hodgkin Awards are available to students from India, China, Hong Kong, South Africa, Brazil, Russia only. Roughly 100, worth £45,000 per year are awarded annually. http://www.rcuk.ac.uk/hodgkin/default.htm
Case two – Examples from Canada

*Developing a national education brand for Canada: “Education in-au Canada”*

For Canada’s federal and provincial governments, the overseas promotion of their educational systems is a recent and much less extensive initiative than in the UK. Rather, Canada’s federal state involvement in international education has principally entailed participating in the post-WWII Colombo Plan, a collaborative program to provide sponsored education to select elite students of the predominantly developing countries of the British Commonwealth, or in other bilateral agreements to enhance international relations.

Thus, it was not until the mid-1990s that the potential economic value of international student mobility began to be raised among various interested parties at the federal level. According to interviewees at Canada’s Department of Foreign Affairs and International Affairs (DFAIT), their interest in the commercial trade value of international education provision was piqued at this time through requests for information about Canadian education received at embassies (particularly in the Asia-Pacific), while Canadian trade officials at the time, as one interviewee said, also reported concerns of “having to organize ourselves better because we’re falling behind the British and the Australians, and so on and so on” (emphasis added). Perhaps to avoid directly exerting federal spending power on education-related issues, which is under provincial jurisdiction, a tender was called for a not-for-profit organization to promote Canadian education overseas. In 1994 the Vancouver-based Asia-Pacific Foundation of Canada won the contract, establishing the CEC Network. The CEC Network’s mandate was to broadly market and promote Canadian
education and provide educational counselling through Canadian embassies and their own overseas offices with a budget of roughly $10 million over 10 years.\textsuperscript{35}

Nevertheless, a major turning point occurred in the mid-2000s for establishing a coordinated international education strategy at the federal level. To begin, a provision for post-secondary education was included for the first time in a federal budget under then-Liberal Prime Minister Paul Martin in 2005, which included funds designated for “international education.” DFAIT immediately responded to this budget line by developing a plan to use these limited funds for a coordinated marketing campaign to promote Canadian education internationally. However, the Liberal Government soon fell to Stephen Harper’s Conservatives and the education-related expenditures were removed from the budget. Yet the new Harper Government’s adopted broad social and economic governance objectives were based on developing a competitive workforce and encouraging the inward mobility of top international students and scholars as part of this agenda. These priorities have been evidenced in several recent Speeches from the Throne and various budget statements, where the sitting government’s priorities are publicly stated. Moreover, the Conservative Government’s “Advantage Canada” (2006), which defines the government’s economic strategy, explicitly cited international students as an important component of national science and technology plans. This report included commitments to “[encourage] the best foreign students to attend Canadian colleges and universities” and “to make it easier for Canadian-educated foreign students... to stay in Canada and become Canadian citizens” as part of an effort to create “the best-educated, most-skilled and most flexible workforce in the world” (Canada 2006, 51, 50, 53).

\textsuperscript{35} Funds were provided through contribution agreements with CIDA and in-kind support from DFAIT, such as office space in embassies. DFAIT also continued a small Education Marketing Group in the late 1990s to assist embassies with their own country-specific marketing initiatives, but this was simply the allocation of small funds and did not comprise a national marketing strategy.
Several initiatives by federal-level government departments and education-sector representative organizations have sought to capitalize on this international student mobility promotion by the PM’s Office. One of the most notable of initiatives has been the creation of Edu-Canada, a project developed by DFAIT with the collaboration of the Council of Ministers of Education Canada (CMEC), the body that seeks to bring together the provincial Ministers of Education for national and international representation. DFAIT proposed this international education initiative under its Global Commerce Strategy (2007), proposing a “four pillar” strategy with the following elements: first, create a Canadian brand for education; second, develop an education marketing campaign focused on priority markets; third, improve Canada’s presence at major international education trade fairs (e.g. NAFSA, EAIE); and fourth, provide better service to DFAIT’s industry clients, namely Canadian universities and colleges seeking to recruit in overseas markets.36 The parallels of the Edu-Canada program with activities of the UK PMI-2 are evident, as well as with similar recent initiatives also undertaken in France and Australia. The motivation to introduce initiatives that “keep up” with these competitor countries is illustrated in the words of one senior Canadian policy-maker:

...I mean that’s why Australia comes out with these huge pavilions and BC, I mean the British Council, France, they’ve got these huge pavilions [at education trade fairs]. I mean, this is why they do this. They build linkages in academic exchanges and research and development... R&D, S&T linkages... so [our Edu-Canada strategy] all ties into that.

36 The federal priority countries were established by asking each of the provinces to compile a list of their own priority markets. The result was a list of nine priority countries (in order of highest to lowest: China, India, USA, Japan, South Korea, Mexico, Germany, Brazil, and France) and four regional priority markets where the individual country size is small, but which are still considered important source regions (North Africa, the Middle East, the Caribbean, and ASEAN).
However, while temporary funding was received in support of this initiative, the budget was $2 million (CAD) for two years, a striking difference to the British Council’s budget of £77 million ($150 million CAD).

DFAIT encountered both support and resistance as it sought to move ahead with this initiative. The Association of Universities and Colleges of Canada (AUCC), as the representative body for universities and colleges in Canada, generally supports government initiatives to recruit international students as the organization argues it enriches the academic experience of all Canadian students and enables universities to “play a central role in providing Canadians with connections to highly qualified people and ideas from around the world” (AUCC 2009, 4). A senior director at AUCC also emphasized, however, its support of the new promotional activities were developed in response to signals from other orders of government, and in response to changes taking place in other jurisdictions:

You’re seeing [the Conservative government’s] federal S&T strategies, you’re reading their budgets and seeing where they’re putting their emphasis and trying to show where universities can contribute. At the same time, also doing your own work to see where the needs are. And we’re also benchmarking to see what other countries are doing as well. We’re seeing how they’re framing their policy frameworks… so you want to make sure that you’re on a level playing field. ...It’s keeping tabs on where other countries are taking their policies and making sure Canada’s competitive (emphasis added, see also AUCC 2009).

In contrast, the provinces and territories have launched more serious challenges to DFAIT’s proposals, largely based on the concern that these initiatives infringe on their jurisdiction and relegate them to consultative stakeholder status on a policy initiative where they hold governmental authority and responsibility. The CMEC found there was considerable variation among provinces in terms of the priority that international education and student mobility plays in their current policy agenda. Some provinces had already been involved in international promotional activity for some time and were
interested in developing complementary campaigns (e.g. BC and Alberta), while others expressed concern about initiating a market-based rationale to international education or considered it a low priority. However, DFAIT's initiative seems to have served as a catalyst for the provinces to collaborate amongst themselves on international promotion matters, and it reinvigorated a joint committee to establish cooperation between the federal and provincial orders of government.\(^{37}\) The result was that a more collaborative, consensus-based structure has been implemented to oversee the international marketing campaign. The challenge remains, however, that the motivation for involvement in international education differs by province. For instance, Alberta’s strategy tends to emphasize attracting top graduate students, researchers, and post-docs and early career scientists to develop a strong research sector that can help the provincial innovation agenda. Nova Scotia’s interest stems from demographic concerns and the wish for international students to tie in with immigration objectives; in contrast, Manitoba tends to view international education as a service industry, while Quebec emphasizes the role of culture and language promotion through cross-border educational activities. While these motives are not necessarily mutually exclusive, their range makes it difficult to establish a single national brand that encompasses these various needs. Moreover, the nature of a target market in terms of level of education (i.e. K-12, technical colleges, undergraduate, graduate university) and the difference in regional priorities becomes difficult to establish when one body is seeking to satisfy the diversity in a federation like Canada. Nonetheless, many felt the brand that was launched in the fall of 2008 represents a significant attempt for the different orders of government and multiple stakeholders to cooperate on the issue of international education policies in Canada, even if its continued funding and mode of governance seems precarious.

\(^{37}\) This joint committee named the Federal-Provincial Consultative Committee on Education-Related International Activities (FPCCERIA) was originally created in 1986 and reports to the Chair of CMEC and the Minister of DFAIT. Both groups disparagingly refer to the committee as F-Pizzeria.
Study and work permit regulations for international students in Canada, and a new student-oriented “Canadian Experience Class”

Unlike the UK, where the alignment of immigration policy with employer-driven labour force needs represents a fundamental reorientation in state strategy, policies to link immigration with national labour market needs are certainly not new in Canada. Since the inception of the points system in the late 1960s, Canada’s immigration admission policies have in part sought to align the attractiveness of individual migrants with the country’s occupational and skills needs (Green and Green 2004). What is relatively new in Canada, however, is the emphasis in economic development policy discourse on the importance of having a pool of highly educated workers for economic competitiveness in the knowledge-based economy and the attempts to attract and retain international students as part of the process. Furthermore, international students represent the archetype of what some commentators have referred to as the blurring of boundaries between temporary and permanent migration streams (Stasiulis 2008). Below, I review a number of changes to immigration regulation shaping international students’ experiences and options in Canada, related to work permits (during and after their studies), to study permits, and to new routes to permanent residency and citizenship.

As an initial point of comparison, in the early 2000s, a non-Canadian citizen or resident wishing to study at a Canadian post-secondary institution for more than six months was required to obtain a study permit, which in part required proving the intention to come for study-only purposes, meaning that an applicant who expressed a desire to remain after graduation would be refused on the basis of having “dual-intent.” During his or her studies, an international student in a full-time program could not work, except “on-campus” for up to 20 hours a week. Upon graduation, this student had three months to leave the country,
unless he or she was able to obtain a work permit, which required obtaining a written job offer from an employer who was also willing to submit paperwork to confirm that no eligible Canadian citizen or permanent resident could be found for the position and that the work was related to the student’s field of study. International students who wanted to apply for permanent resident status were required to leave the country and apply through foreign consulates, an approval process that could take years.

Looking first at changes to conditions while studying, in 2006, regulation was introduced to permit international students to work off-campus during their studies. The rationale, according to CIC, was not only that this would enable foreign students to help self-finance their studies, but also that it may also help them contribute to the local economy and possibly establish lasting professional linkages in Canada, as well as, to a certain extent, address local employers’ labour market needs.

Second, a series of changes were made to ease and even encourage international students to remain in the country after graduation. Beginning in 2006, an internal policy directive was released to “lower the bar” set by Human Resources and Skills Development Canada (HRSDC) that required employers to demonstrate that a foreign-national was the only person able to provide a particular expertise or service, known as a “labour market opinion,” making it easier for international students to obtain a work permit. That same year, a program designed specifically for international students, called the “Post-Graduation Work Permit” (PGWP) (2006), was introduced. That permit allowed foreign graduates to remain with an open permit immediately after their studies. It was originally valid for one year in Canada’s major cities (Toronto, Montreal or Vancouver) and for two years elsewhere in the country, demonstrating the strategic intent to regionally disperse the labour benefit of international students beyond the major immigrant receiving cities, also making its offer,
as one interviewee said, “more generous than the programs in the UK and New Zealand.”

Two years later, in 2008, the PGWP was extended to a three-year period for all students who had spent two years in Canada as a full-time student at a recognized post-secondary institution on a study visa, regardless of place of education, destination or program of study. The explanation given by Minister of Immigration Diane Finley in CIC’s press release regarding the new PGWP makes the desired long-term economic benefits as well as the perceived need to compete for these students unambiguous:

Open and longer work permits provide international students with more opportunities for Canadian work experience and skills development. This will, in turn, help make Canada a destination of choice, and help us keep international students already studying in Canada... Our ability to retain international graduates with Canadian qualifications, work experience and familiarity with Canadian society will help increase our competitiveness and benefit Canada as a whole (CIC 2008b).

Third, the most fundamental regulatory change intended to encourage the retention of foreign students and scholars in Canada after their studies came in late 2008 with the introduction of the “Canadian Experience Class” (CEC). Like the existing immigration points-based system, this new program evaluates applicants on a range of criteria; however, unlike the traditional economic class route, this stream makes work or study experience in Canada a key factor in gaining admission. The CEC program now enables international students to enter a fast-tracked stream for permanent residency after studying for two years and working one year in Canada, and it allows them to apply for landed immigrant status from within the country, so they no longer need to leave after their studies to join the overseas queues of other economic class immigration applicants. The program also represents a rare initiative in Canada to link temporary worker and permanent resident migration streams, which have traditionally been treated as discrete and serving different goals in Canadian
immigration policy. Many interviewees described this as a significant change in CIC’s perceived role, from one which in the past has been likened to a migrant gatekeeper to one seeking to entice desirable immigrants in a competitive framework, where potentially desired immigrants need to be attracted against the pull of other immigrant-receiving nations. A quote from a CIC spokesperson illustrates this new framing regarding international students and the CEC program: “Canada is revamping its approach because rival destinations such as Australia and the United Kingdom already have similar programs” (Chase 2008, emphasis added).

Parallel to these changes occurring at the federal level, many Canadian provincial governments have also sought to include international students in existing Provincial Nominee Programs (PNP), another initiative that enables Canadian provinces and territories to nominate immigrants with desired skills to be fast-tracked through federal immigration procedures. Several provinces, including Ontario and Manitoba, introduced “international student streams” to enable recent graduates of Canadian colleges or universities with a job offer on hand for a professional, managerial or skilled trade occupation to qualify for this nomination in their province. At the public announcement for inclusion of students in Ontario, the Ontario Minister of Citizenship and Immigration, Michael Chan, said,

There’s a global competition for talent. International students are highly skilled, have Canadian credentials and are familiar with Canadian society. Our province will benefit from their talent for years to come (Ontario 2008).

38 Similar options are not available for those who enter Canada through the Temporary Foreign Worker Program or the Seasonal Agricultural Worker Program and whose skills are not deemed professional or managerial. The Live-In Caregiver’s Program was the first temporary program to begin allowing migrants to apply for permanent resident status after 24 to 36 months in Canada, a change that was only introduced after considerable lobbying.
This is yet another example of regulatory changes that aspire to encourage jurisdictional advantage as part of a global competition in skills, by building on streams of international students.

Lastly, concerning the period prior to entering Canada, CIC informants have stated that changes are underway to make admission clearance procedures for study permits more "competitively efficient" (i.e. as quick or quicker than other popular receiving states) by including a clarification for overseas agents that they should not refuse students' admission on the basis of dual-intent, as this contradicts the objective of new initiatives such as the CEC program.

These changes that have occurred in concert with one another represent an evident shift towards the increased emphasis placed on the long-term labour value that international students can provide to the national as well as more targeted provincial jurisdictions, and the need for Canada’s regulatory environment to be viewed at least as, or more, attractive than other states in the eyes of prospective international students/migrants. Interviewed CIC officials said that these changes do not form part of a coordinated strategy regarding international students, as each initiative has been developed in response to their research on domestic labour needs and the current challenge of immigrant skill underutilization, while also reacting to a national government objective to be more competitive and aggressive in brainpower competition. However, much in-house research also involves contrasting the comparative attractiveness and success of Canada’s immigration policies against those of other countries, especially Australia (e.g. Hawthorne 2007). As one respondent said, “Our main competitor for international education is definitely Australia. They’re the leaders, ahead of everybody, and we can learn from their actual recruitment process.” It is worth mentioning that the United States was rarely
discussed, as most Canadian policy-makers perceived that they were unable to compete directly with this first-choice destination for many international students, and hence sought to battle amongst nations like Australia that may be second choice.

It is also worth noting that Toronto, as the largest destination city-region in Canada, has not developed a program similar to London, UK. However, several provinces continue their marketing programs and the Atlantic Provinces have begun collaborating in their “region” to attract more students.

**Attracting through funds: scholarships in Canada**

As with the UK, funding from the national level research councils comprise a major source of monies available to support (post)graduate level studies in Canadian universities. To varying extents, provinces also offer scholarship money for (post)graduate students and research projects. In the past, international students have generally had very restricted access to state money to support their studies. For example, international students have not been allowed to directly apply to national research granting agencies, although they could access funds as a research assistant from their supervisors who hold grants from the federal bodies. However, the federal government launched a recent initiative to attract top graduate students to Canada through the Vanier Scholarships (2008). With an initial $25 million investment, the scholarship aims to annually fund 500 domestic and international students, each receiving $50,000 per year to bring Canada up to a comparable level with scholarship offers in other countries. One senior policy-maker in Canadian research described the motivation for the Vanier Scholarship accordingly:

...recognizing that we need to have some flagship scholarships that market Canada abroad... and *we’re seeing what other countries are doing*. We’re seeing how they’re
Chad Gaffield, the President of the Social Sciences and Humanities Research Council (SSHRC), provides a similar rationale in a public statement accompanying their launch:

The value and prestige of the Vanier Canada Graduate Scholarships puts them on par with such highly renowned scholarships as the Rhodes scholarships in the United Kingdom and the Fulbright scholarships in the United States.

Discussion and conclusions

This chapter began with the assertion that there has been a rise in interest among policy-makers in several countries regarding international student mobility, both for the short-term contributions that fee-paying international students make to higher education systems and local economies and for meeting longer-term brainpower and labour force development objectives. This research sought to examine the process by which these changes were introduced into policy and regulatory frameworks in Canada and the UK. The findings presented here illustrate a series of rapid changes within each country in an effort to attract a greater number of international students and to ease the conditions enabling or even encouraging these students to remain after their studies to join the local labour force, either for a short or extended period. The reasons given by state departments and relevant stakeholder organizers concerning their motivations for supporting or implementing new regulations or strategies were multifarious and complex, but often revealed that the ideas and incentives to introduce policy changes often came from other states.

The staggered timing of programs introduced and the justification given by informants illustrated that changes from competitor jurisdictions were important sources of inspiration, motivation, or justification for change. For example, the UK led the way with
policies that sought to expand international student mobility as an export industry, initiating several activities that soon became popular among other countries, such as marketing and branding. However, the UK primarily followed the example of other jurisdictions in terms of adopting economic development or brainpower-driven policies. Canada, in contrast, has served as one of the principal examples of countries using immigration policies to encourage international students to remain after graduation, either by easing work permits requirements or quickening routes to permanent residency. However, Canada has lagged behind other countries in seeking to stake a claim in the international student ‘market,’ only recently introducing branding campaigns, and introduced lucrative new scholarships in an explicit attempt to lure top students (domestic and foreign) away from competitor countries. The lesson to take from these examples is that policy ideas flow back-and-forth between jurisdictions, shaping the general direction of policy trends. The mechanisms underpinning these particular cases were often “emulation” when entirely new programs were introduced as policy-makers seek to re-establish the so-called ‘playing field.’ For example, it took the introduction of marketing campaigns in Britain and Australia – countries that the Canadian federal government considers cultural peers – for Canadian policy-makers to deem that it was acceptable to market international education as an industry. Once programs were established and ideologically accepted, the main mechanism for on-going policy changes was “competition” as each jurisdiction sought to maintain their competitive advantage, or position, vis-à-vis other countries. An example of competitive-led policy transfer was found with policies relating to the period of time required to gain permanent residency or the time that graduates can remain on work permits, as each jurisdiction sought to make their offer sweeter and thus more attractive than that of other jurisdictions.
Nonetheless, despite the similar direction of policy changes and the evidence of exogenous factors shaping the policy-making process in both countries, there remain substantial differences in the programs adopted. I argue that the reasons for these continued dissimilarities relate predominantly to the influence of endogenous domestic forces in shaping policy developments. The theoretical tension between mobile policies and fixed institutional frameworks has been identified within the literature on “policy mobilities,” but the ways in which the geographically specific socio-spatial and institutional embeddedness of policy-making affects policy outcomes in comparative settings remains largely underexplored empirically. This research suggests the continued significance of domestic institutions and politics in three ways.

First, institutional frameworks outlining the constitutional division of power, governance and funding act as important mediating forces against common stimuli. In the cases of Canada and the UK, the governance and funding frameworks for higher education and research in both countries had established paths that either facilitated or hindered the development of the overseas marketing international education marketing campaigns. In the case of the UK’s PMI projects, it was the financial and political support from central government (the PM’s office) that was instrumental in enabling a new multi-departmental governance board to work with the British Council in bringing this initiative to fruition, eventually exceeding its targets and generating sufficient support to continue with a second phase. The prior existence and historical mandate of the British Council seemed to lessen the challenge of having trust in an arms-length body to undertake the various tasks and communicate with the multiple agencies and stakeholders involved. As well, the support for this initiative from the UK’s university sector was driven by the historical disinvestment of the state in HEIs and their growing financial dependence on attracting international students for the maintenance of their operating budgets. In contrast, the similar Edu-
Canada initiative that the Canadian DFAIT sought to introduce struggled to establish a manageable working body to direct the various aspects of its strategy because of both its lack of authority to address higher education issues at the federal level of government and the resistance by provincial governments to allow the federal authorities to make decisions on an issue of their jurisdiction and responsibility. Moreover, while the Canadian PM has made direct strategic comments regarding this desire to support brainpower competition and attract top international students and scholars to Canada, he does not wish to challenge an issue of provincial jurisdiction and has not been willing to dedicate significant funds, aside from the Vanier Scholarship, comparable to the amount available for UK initiatives. As well, education strategies among provincial governments are often grouped from the primary through to tertiary levels, resulting in educational promotion strategies that aim to satisfy such a wide group of potential students (kindergarten to post-graduate) as to dilute the marketing message. Therefore, while Canada has joined the ranks of countries involved in branding and marketing their education overseas, the pre-existing governance structures and funding frameworks have limited the scope and speed of this initiative.

Second, domestic politics and public attitudes towards higher education and immigration have shaped the form of initiatives introduced by state authorities seeking to encourage international students to remain after their studies vis-à-vis competitor jurisdictions. For example, in the Canadian case, the historical orientation of immigration policies towards labour force development has meant that the discourse of encouraging international students to remain and contribute to the country tends to be publicly viewed as an acceptable and appropriate means to meet continued domestic demographic and labour force expansion needs and remain competitive with other immigrant-receiving countries, such as Australia and New Zealand. In comparison, despite the rise of discourse in the UK emphasizing the role of international connections and attracting top scholars and
migrants for economic competitiveness and interest in several elements of the immigration policy framework in Canada and Australia, all UK informants suggested that it would not be publicly acceptable in the UK for the government to adopt an explicitly pro-migration strategy involving students. Public officials explained that the shift towards encouraging highly skilled immigration under the Blair administration (culminating in the launch of the new point system) was based on the anticipated benefit of circulating skills within the national economy; the idea to allow students to remain to work for a short period could be viewed as filling this mandate. Yet the critical UK public opinion in recent years of the rise in migrant labour, particularly from EU accession countries, led policy-makers to believe that proposals that encouraged overseas international students to remain long-term would be viewed as an unwelcome threat to British workers. Therefore, the general lack of comparable public support in the UK for embracing inward migration tempered the extent to which international student-based brainpower competition strategies have been translated into the realm of immigration policy.

Third, the timing of initiatives and the occurrence of wider institutional restructuring were instrumental in creating conditions that led to the London initiatives in marketing. The creation of a collective sectoral organization like London Higher was spurred by institutional changes occurring during the devolution of regional economic development responsibilities that began in 1997, generating a context wherein new multi-stakeholder initiatives such as Study London could be conceived. Comparatively, such an initiative has not been developed in Toronto or other Canadian cities, nor is there a collective body to represent the higher education sector in regional development issues. The City of Toronto may have recently established formal dialogue with the local HEIs through a blue-ribbon committee and acknowledges the importance of higher education for local economic development in its economic development plan, but it does not feel it has
access to funds nor the mandate to undertake projects in collaboration with universities.

To conclude, this chapter has argued that policies to attract and retain international students are “mobile.” While there are similarities in the type and direction of policy changes taking place in Canada and the UK, which are commonly underpinned by a broad economic logic and informed by policy changes in competitor jurisdictions, there also remain key differences in their specific elements and actual implementation. These differences indicate that alternative paths to competitive-driven policy trends are possible given the continued relevance of different socio-spatial and institutional frameworks in shaping the policy environment.

Lastly, while this chapter has provided a snapshot of recent policy changes in two countries, the extent to which governments are seeking to exert an influence in the global competition for students seems to be just beginning. There are many worrisome trends and potential implications of these changes to caution against. First, while it should be noted that the effect of these policy changes on global mobility patterns remain speculative at this point, both in terms of shaping where students choose to study and their post-graduation decisions, there is reason to be concerned about the global social equity of attracting the top students from less developed countries to support the national economies of more developed countries such as Canada and the UK. Commentators on several recent studies have altered the language regarding this phenomenon from one of “brain drain” and “brain gain” to a more neutral discussion of “brain circulation,” suggesting that the free movement of students and skilled migrants may be beneficial for both sending and receiving countries, as these individuals often retain intellectual ties with their home country and/or return home after several years abroad (Meyer and Brown 1999; Meyer 2001; Saxenian 2002b, 2006). However, until the impact of state strategies to shape student mobility patterns are better known over a longer period, there is a need to consider ways to ensure equitable
sharing of the risks and rewards of the mobility of highly educated individuals with both sending and receiving states. Moreover, there is urgent need to make certain adequate institutional services are established to support international students with the academic and social challenges that they face, as well as support for academics responding to the changing dynamics in the classroom or laboratories with increased numbers of overseas students. Along these lines, there is clearly scope for jurisdictions to learn from one another not only in seeking to out-bid each other in attracting and retaining international students, but also in terms of learning about past successes and failures in creating a supportive and equitable environment in which students of all backgrounds can participate in the institutions where they study and be valued members of the communities in which they live.
Chapter 2

When the world is your oyster: Foreign science and engineering students’ post-graduation migration and career plans

Introduction

In recent years, considerable policy and academic attention has been placed on the role an educated labour force plays in developing economic prospects within a knowledge-based economy and on the ability to attract and retain highly skilled migrants as a central element to developing and maintaining regional competitiveness. An increasingly prominent element of this competition focuses on internationally mobile students and the ways that universities can act as “anchors” or “IQ magnets” for such desired individuals (Gertler and Vinodrai 2005, 20; Shachar 2006; OECD 2008b). The argument put forth is that international students are no longer primarily valued for the financial contributions that they make through foreign student fees or for their contributions to the intellectual life of their host institutions, but increasingly also for their role in meeting regional and national research agendas and as future skilled migrants (Kuptsch 2006; Kuptsch and Pang 2006; Vincent-Lancrin 2008). Particular attention is placed on students at the (post)graduate level in the fields of science, technology, engineering and mathematics (STEM) because it is expected that these students can most directly contribute to regional innovation agendas and to the international strength of national higher education and research systems during their studies as well as afterwards, if they remain (Stephan and Levin 2001; HM Treasury 2002; Kemp et al. 2008; Douglass and Edelstein 2009). However, while reasonably accurate information is available on incoming flows of international students at the country level, there is little scholarship on the subsequent
movements and long-term career plans of these individuals. In particular, the limited research on international students’ post-graduation activities tends to examine general migration intentions, overlooking the details of how specific career strategies and transnational ties and relationships inform these decisions and how students’ experiences in a given environment may shape their plans.

This article seeks to contribute to this topic in two ways. First, it draws upon and contributes to the transnational literature by exploring how the agency of these increasingly sought-after students, while informed by their individual situatedness as transmigrants with life worlds that span diverse political-economic and cultural contexts, can be shaped by their experience in the place where they study. By comparing groups of foreign science and engineering students from diverse national origins in two cities – Toronto, Canada, and London, UK – I illustrate the ways that students are influenced by and are responding to place-specific institutional regulatory frameworks, which affect their perceived realm of career and residence opportunities.

Second, it explores the nature of decision-making undertaken by international students in science and engineering upon completion of their studies by investigating the range of factors and processes that shape their individual plans and strategies with respect to where they seek employment and residency. I argue that graduation from an overseas degree program is a significant and transitional life-stage moment, in terms of both career and migration trajectories, and involves a complex intermingling of issues related to professional aspirations, personal considerations, and migration/immigration regulation. Understanding

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As noted earlier, international statistics on student mobility should be viewed with caution. When referring to OECD statistics, I employ their “international” student data (as opposed to “foreign” student data, which is based on citizenship, rather than country of residence status).
the relative importance or weighting of these issues is best understood through international students' voices and their expression of perceptions and intentions.

This chapter begins by providing contextual information on the rapidly developing interest in international students as future skilled migrants and on the corresponding policy changes in Canada and the UK. It then reviews the extant literature on student mobility and draws on the transnational migration literature to propose a conceptual framework to investigate the decision-making process for students upon graduation. Following this, I present findings from comparative studies in London and Toronto of graduating international students in science and engineering programs, discussing the commonalities and differences in both cities across the range of factors shaping students' decisions, as well as illustrating the influence of multiple institutional scales in shaping students' subjectivity and plans for the future. I also argue that a broadened geographic framework is necessary to understand adequately the realm of students' perceived options, moving beyond the assumed binary “stay or return” framework suggested in most of the literature. By way of conclusion, I offer summary comments and identify issues for further research.

The internationalization of higher education, skilled migration, and the race for talent

The OECD estimated that in 2006 there were 2.9 million international students worldwide, a remarkable 480% increase from the 1975 estimate of 600,000 (OECD 2008a). This growth in international student numbers coincides with an expansion of motives from the perspective of governments and higher education institutions to promote student and researcher mobility. While early academic exchange and study programs were developed in the post-World War II era to encourage international diplomacy and development aid (Megarry
2007), a significant shift occurred in many countries in the 1990s towards incorporating explicitly economic aims in the sphere of international educational mobility. Governments began seeking to attract international students as a source of income generation (to contribute financially to national educational systems), for local labour force and research capacity building, and as a strategy for skilled migration (Vinokur et al. 2006; Ziguras and Law 2006; Vincent-Lancrin 2008). Universities and other educational institutions also viewed international students as a source of much-needed additional income, often to compensate for declining state contributions, as well as to strengthen components of internationalization agendas and to encourage diversity of campuses. The result has been a rapidly changing geographic context in the last ten years, within which mobility patterns are highly uneven but also changing. Countries are increasingly portrayed as jockeying to improve their position, in terms of attracting their share of fee-paying international students (“market”) or for attracting the greatest number of top research scholars (“minds”), as issues of geopolitical and economic importance with significant long-term implications in terms of the relative strength of jurisdictions in the global knowledge-based economy (OBHE 2007; Robertson and Keeling 2008).

Within this competitive higher education landscape, the interest in foreign students pursuing advanced research or postgraduate level training, especially in the STEM disciplines, has recently received particular policy attention (OECD 2007; Kemp et al. 2008; OECD 2008b; Douglass and Edelstein 2009). Drawing on the historical example of the United States as the world’s “IQ magnet” for top scientists, the rationale put forth is that foreign graduate students enhance the intellectual activities and strength of research output in universities, can become valued future academic staff and scientific leaders, and make important contributions to local industrial spin-off activities and economic growth (Stephan and Levin 2001; Kuptsch 2006; Shachar 2006; Universities UK 2007). The emphasis is thereby placed more on students’ long-
term contributions through their skills and less on their short-term tuition fee payments.

Additionally, international students who remain after graduation can contribute to the development of a diverse and educated labour force, which many economic development theorists argue is a necessary condition for sustained economic vitality in the knowledge-based economy (Gertler and Vinodrai 2005). Moreover, foreign students often bring different academic and cultural traditions as well as transnational research and social networks to their new region, likely enhancing tacit knowledge circulation and the influx of new ideas and information, or both “local buzz” and “global pipelines,” which are suggested to be particularly valuable for establishing dynamic local economies (Bathelt, Malmberg, and Maskell 2004).

Currently, the US receives the largest global share of foreign postgraduate students, at roughly 540,000 students, comprising 24% of the country’s graduate student body (IIE 2007). In comparison, although the absolute numbers are lower, the proportion of international students in the total national postgraduate population is higher in the UK (41%, or roughly 50,000 students) and Switzerland (44%). Other countries with a significant proportion of international students at the graduate level include France (35%), New Zealand (22%), Canada (21%), and Australia (19%) (Kemp et al. 2008, 1; OECD 2008a, 366). While source country patterns vary in each national context (where data is available), it is widely found that the proportion of international students is highest in the STEM disciplines at the graduate level (OECD 2008a).

It certainly is not the case that all countries have explicit strategies coordinated by national governments to expand or maintain international postgraduate enrollment figures, but there is growing evidence that several countries have a policy landscape that increasingly

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40 The OECD (2008a) defines “advanced research qualifications” through the International Standard Classification of Education (ISCED 6), referring to tertiary programs that are devoted to advanced study and original research, and lead directly to the award of an advanced research qualification, e.g., Ph.D.
emphasizes these students as future skilled migrants or for their potential labour market contributions. The countries commonly identified as encouraging such an approach are Canada, France, Germany, the United Kingdom, and the United States (Tremblay 2005; Findlay 2006; Suter and Jandl 2006; Gera and Songsakul 2007; Universities UK 2007; Suter and Jandl 2008; Vincent-Lancrin 2008). Within these countries, a flurry of regulatory changes and initiatives that cross over multiple policy spheres have been implemented in the past five years, including initiatives such as overseas educational marketing campaigns, new scholarship programs seeking to attract top students, and easing visa or immigration regulation for target groups (prior, during, and after graduation). The following are examples from Canada and the UK that are germane to this chapter. In 1999 the UK introduced the Prime Minister’s Initiative for International Education, which was managed by the Department for Education and Skills and the British Council, in cooperation with the UK Trade and Investment, Foreign and Commonwealth Office, and Home Office departments, seeking to increase the number of international students coming to the UK. PMI activities included developing the “Education UK” brand, carrying out marketing campaigns in target countries, as well as expanding the Chevening scholarships for foreign students; this initiative was extended with a second phase (PMI2) in 2006 with an annual budget of £7 billion/a. In a comparable vein, albeit with a much smaller budget of $2 million, Canada recently launched its first international education marketing campaign through the collaboration of the Department of Foreign Affairs and International Trade (DFAIT) and the Council of Ministers of Education in Canada (CMEC) under the “Education in/au Canada” brand (2008), with plans to unveil targeted marketing in select countries as well. Canada also introduced the Vanier Canada Graduate Scholarship (2009) through the collaboration of the three main federal research-funding agencies, which provides

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41 These changes form part of large state immigration regimes that increasingly seek to encourage the inward mobility of capital-bearing subjects while limiting the entry of unskilled labour.
generous funding for 500 domestic and international graduate students a year as a way to “attract and retain world-class doctoral students.” Similarly, both countries have also made changes to their (im)migration regulations to ease access to post-graduation work permits and to encourage students to remain immediately after their studies. In the UK, this has been achieved successively through the Science and Engineering Graduate Scheme (2004), Fresh Talent (2005), and International Graduate Scheme (2007) (Findlay 2006). In Canada, the Post-Graduation Work Permit program was recently extended from one year to three years in duration (2008). Moreover, in 2008, the Canadian government introduced the Canadian Experience Class as a new immigrant stream that will fast-track graduates of Canadian universities and colleges through its points-based immigration admission system.

Despite the clear intentions of these policy changes and the acknowledged importance of international graduate flows for intellectual vitality within higher educational institutions and for local economic prospects, little is actually known about the outcomes and subsequent activities of students that study abroad. Based on the limited data available, much research has focused on students’ declared migration intentions as a useful indicator of future decisions (Li et al. 1996; Johnson and Regets 1998; Baker and Finn 2003; OECD 2008b) or has used tax records to calculate how many join the labour force after graduation to establish their subsequent economic success (Regets 2001; Finn 2005; Hawthorne 2007; see Suter and Jandl 2008, for national comparisons; CIC 2009). For example, Finn (2005) finds that 71% of foreign students who received PhDs in science and engineering in the US remained in the country two years after graduation, whereas most estimates for Canada and the UK set the long-term figure

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For more information on the Vanier CGS, see: [http://www.vanier.gc.ca/unbg-unfi-eng.shtml](http://www.vanier.gc.ca/unbg-unfi-eng.shtml). In contrast, there have been discussions in the UK regarding the need to support financially better international postgraduate students if the UK is to continue to attract top students. As Kemp et al (2009: 54) write, “the funding of international PGR students in the UK is complex, lacks coherence, is less generous than competitor countries and depends on considerable investment by students themselves.”
closer to 15-35% (Suter and Jandl 2006; CBIE 2007). Yet, while such research usefully suggests stay rate patterns, it does not illuminate the factors that shape the decision-making process at the moment of graduation from the perspective of students.

**Transnational theories on student mobility and labour migration**

Among geographers and social scientists, there has been a growing interest in the changing global education landscape in recent years (Thiem 2008), particularly in the relationship between international education and student mobility at the high school or undergraduate university level. Approaches differ, with some research exploring the original motives of individuals to study abroad, which are suggested to range from pursuits for personal experience, cultural enrichment or travel goals, to seeking specific skill acquisition such as language abilities (Maiworm and Teichler 1996; King and Ruiz-Gelices 2003), while other studies adopt a broader lens to investigate household strategies to accumulate cultural and symbolic capital through a Western university degree for social and economic mobility in a transnational context (Ong 1999; Huang and Yeoh 2005; Waters 2005, 2006b). Indeed, there is growing recognition of the extent to which international academic experiences pay a significant role in the construction and (re)production of social and class inequalities in both sending and receiving societies (Mitchell 2003; Waters 2006a), with some studies suggesting that former institutional students will be able to translate their new competences and skills into improved social and economic positions at home (Baláz and Williams 2004; Waters 2006b) or intimating that the experience of studying abroad will translate into improved future overseas employment opportunities and a greater likelihood of becoming skilled migrants at a later date (Li et al. 1996; Meyer 2001; Vertovec 2002), contributing to the construction of what Sklair has termed the “transnational capitalist class” (Sklair 2001). Despite this expanding literature on
different motives underpinning international student patterns, the related growth of transnational livelihood formations and the potential effect of students’ overseas education on their future employment, there is a general lack of research on the multiple options that student may face prior to their return home and on the decision-making involved at the moment of graduation. Hazen and Alberts (2006; see also Alberts and Hazen 2005; Szelenyi 2006) provide a valuable exception with their research that examines the preferences and intentions cited by a group of international students at the University of Minnesota, USA. They suggest that there are multiple factors affecting international students’ post-graduation migration intentions, but that professional factors tend to act as a strong incentive to remain in the United States, while family and social factors “pull” students back to their home country. This research usefully illustrates the complexity of decision-making and the multiplicity of issues under consideration, but it assumes a remarkably simple binary stay-or-return-home framework, as do nearly all other studies (e.g. Baláz and Williams 2004; Alberts and Hazen 2005; Fontes 2007; Thorn and Holm-Nielsen 2008). Moreover, while it indicates the importance of professional considerations for students, it leaves unexplored how these concerns differ along level of education and discipline. This is a distinction particularly worth exploring as the career concerns of students with different academic interest and intellectual training are likely to vary to a considerable extent. In particular, Fox and Stephan (2001) suggest science and engineering postgraduate students hold strong commitments to their disciplines after the sustained educational investment made to reach their advanced level of study. Lastly, there remains a gap in our understanding of how to disentangle the reasoning used in the process of weighing these multiple factors, particularly as it may change over time, and to the potential role that geographically specific structural characteristics may have in shaping students’ perceptions and options.
These issues resonate with debates within the international migration literature on what theoretical and methodological approaches are appropriate for understanding the migration process. Silvey and Lawson (1999), for example, argue that to advance migration theory, we need approach migrants as *subjects* or interpreters of their own mobility, challenging the conventional perspective in much migration research that views migrants as *objects* of our analysis that emphasizes the effect of structural factors or assumes economic reasoning for understanding migration patterns. Instead, by conducting research through migrants’ own voices (Lawson 2000), we can recognize migrants as strategic actors (Ong 1999; Ley 2005) and develop a more nuanced understanding of the logics and reasoning underpinning mobility experiences and decisions.

These ontological considerations also correspond with the explicitly transnational perspective adopted by many geographers theorizing about migration and its consequences (e.g. Jackson, Crang, and Dwyer 2005). A transnational approach seeks to recognize the “multi-stranded social relations” and activities that migrants maintain in their home and host societies (Basch, Glick-Schiller, and Blanc-Szanton 1994). Here, research shifts attention away from the places between which migrants travel, to a broader investigation of the different social and economic ties and cultural values shaping migrants’ movements and practices (Levitt and Glick-Schiller 2004). Such an approach recognizes that migrants are multiply situated, with relations stretched across space, affecting their individual structures of opportunity and their realm of reference regarding professional aspirations, strategic goals and economic choices (Olwig and Sørensen 2005). Focusing on the ways that migrants remain grounded in different environments enables us to acknowledge that migrants’ individual agency does not occur in a vacuum, nor do the migrants solely operate footloose at a global scale (Ley 2004). Instead, their actions and choices are shaped and constrained by the place-specific cultural, political-
economic, and policy contexts framing their lives (Silvey 2004). As McDowell (2005, 20) writes:

[A transnational perspective] usefully challenges conventional distinctions between structure and agency, between political economy and forms of individualist explanation, as well as the binary division between global processes and local lives, which tends to be mapped onto these binary distinctions.

Arguably, a transnational lens is necessary to adequately understand international students and their everyday movements and practices, as many maintain strong cross-border economic and social networks and frequently communicate with and travel back to home during their studies abroad (Waters 2005; Collins 2008; 2009).

There is also growing recognition that many migratory movements are temporary, with moves occurring several times over a lifespan, as the experience of living transitionally usually improves migrants’ awareness of, and access to, different sets of professional and personal opportunities. For example, several science and engineering immigrant professionals who have lived in the United States for many years are returning to the countries of their birth with enhanced abilities to benefit from changing entrepreneurial opportunities back home (Saxenian 2002b, 2006; Chacko 2007; Harvey 2009), and Hong Kong business migrants in Vancouver are shown to return home because of frustration with economic struggles in Canada to re-establish their more profitable companies there, with some returning to Canada later in life for their retirement (Ley and Kobayashi 2005). In a complementary literature, feminist migration scholars have shown that migration is a period during which migrants can redefine their social position and identity, emphasizing how subjectivities evolve as a result of transnational practices and living in different environments (Yeoh and Huang 2000; Nagar et al. 2002; Pessar and Mahler 2003; Silvey 2004). While this work tends to emphasize how gender relations and power hierarchies are renegotiated in different social fields, I propose
that the conception of one’s position within a field as *dynamic* over time and place has much broader purchase, particularly for understanding the social and cultural embeddedness of decisions regarding future mobility and employment. In short, the experience of living in a different environment and maintaining transnational relations can influence both migrants’ tangible access to and awareness of new economic and social opportunities and constraints, as well as their subjectivity and sense of values, preferences, and abilities. Despite the interest in students as transmigrants and the range of environments in which they study, such a perspective has not yet been applied to understanding how the experience of studying abroad in particular institutional geographies shapes international students’ perceived choices and strategic intentions upon graduation.

Taken together, these studies suggest that a wide variety of forces and issues are at play. International science and engineering graduates have made investments in advanced educational training and thus face considerable career decisions; yet, as migrants, international students are operating in a transnational field, so understanding their strategies requires recognizing the particular political economic framework and social and cultural ties that constrain and shape their options. However, based on this review, there remains a dearth of scholarship on how such students weigh the various factors and choices before them upon graduation and on how these decisions may vary, given the place where they have studied. This article addresses this gap by posing two questions: First, from the perspective of international (post)graduate STEM students, what are the factors and considerations that shape their career and settlement plans? Second, given the breadth of students’ backgrounds and transnational connections, does the decision-making differ according to the place where they have studied, and if so, how?
To answer these questions, this project takes a somewhat novel approach to research on transnational migrants. Instead of focusing on a single community that creates a transnational social field through activities that simultaneously connect commonly shared home and host sites (e.g. Basch, Glick-Schiller, and Blanc-Szanton 1994; Faist 2004; Levitt and Glick-Schiller 2004; Rouse 2005), this chapter focuses on specific universities and the range of students with diverse transnational ties collectively spending time there. In other words, rather than defining the community in question by shared geographic or ethnic origins, I alternatively follow Marcus’s (1995) call to focus on a strategically chosen destination as a method to study multi-sited populations. This research, therefore, focuses on a group of international (post)graduate students at a common time and place (upon graduation from science and engineering programs in a chosen university), but as much as possible it also seeks to acknowledge that their human agency cannot be viewed as separate from political-economic and cultural forces, which differ for each student given his or her various geographic relations and experiences. Then, by comparing findings from two sites, I can begin to identify what concerns are commonly shared by the international students at a similar life-stage and level and field of education, as well as where differences may be attributed to the place-specific institutional and political-economic framework. While this further complicates the already messy nature of drawing upon individual biographies to theorize about migration processes, it also potentially enables new issues to be identified and yields insight into how the experience of certain places may similarly affect individuals who differ across a range of axes, such as cultural and ethnic background, race, gender and class.
Case studies: Toronto, Canada and London, UK

This article draws on 47 in-depth semi-structured interviews conducted with international (post)graduate students in science and engineering programs upon completion of their degrees, as well as interviews with over 30 policy-makers and institutional leaders involved in regulating the graduation options for international students in two sites: Toronto, Canada, and London, UK. Toronto and London provide valuable case sites for understanding international student post-graduation decisions because they both receive the largest and consistently growing number of international students in their country from a wide range of national backgrounds (21,750 and 97,150 in 2008-09 respectively) (London Higher 2010), they comprise notably multicultural and multiracial populations (with 49% of Toronto’s local population born outside Canada and 31% of London’s population born outside the UK), and they offer instruction in English (see Figure 2.1). The two cities also host universities widely regarded as top science-research institutions in their countries, namely Imperial College London and the University of Toronto (hereinafter referred to as ICL and UofT), which are the focus institutions in this study. Both cities are also the largest metropolitan economic centres in their countries, with a diverse mix of service industries, many company headquarters, and urban economic development strategies that emphasize the growth of life science sectors as key drivers (TED 2000; LDA 2007). However, important qualitative differences between their industrial structures include the depth and power of London’s financial services, which likely have a much greater capacity to absorb workers with a wide range of skills sets.
Interviews were conducted between October 2007 and December 2008 on the ICL or UofT campuses or in public coffee shops and lasted on average an hour and a half. They were designed to encourage students to reflect on their decision to study abroad, to discuss why they eventually made the decision to go to ICL or UofT, and to discuss their preferences, plans, and perceived prospects for the future. By encouraging students to explain the rationales underpinning their sequence of movements, I was able to gain a sense of the respective cultural, political and economic logics that have brought them to Toronto or London and which continue to shape their situated present-day transnationality (see Ong 1999). The sample of students was thus intentionally and appropriately heterogeneous, given the wide range of

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43 The Toronto estimate is based on student permit data from CIC 2006, 2009, and the assumption that the 54 per cent national average of study permit holders at the university level (refer to Figure 1.4) holds true for the total number of student permit holders in Toronto. These figures do not include students who have become permanent residents during the course of their studies; therefore these numbers are likely an underrepresentation of ‘international’ students in Toronto. London Higher figures include EU and overseas students (ie non-UK domiciled students).
national backgrounds, financial situations, and experiences of the incoming international students in both cities and institutions.\textsuperscript{44} However, I make no claims to representativeness, and this chapter does not explore many other differences that might shape students’ experiences, such as questions of ethnicity, social class, and cultural background.

All international students interviewed were in the final year of (post)graduate research degrees (32 PhD, 15 MSc/MASc), with a relative split between sites (27 at ICL, 20 at UofT), and genders (21 women, 26 men). Students differed in national backgrounds, came from a variety of disciplines across engineering and the physical, natural, life and medical sciences, and held a variety of different legal residency statuses in the country (i.e. some held temporary study permits or work permits, while others were permanent residents or EU citizens) with some changing their in-country status during the course of their studies abroad. (See Tables 2.1 and 2.2.) Students also differed in terms of the amount of the time they had spent in London or Toronto (ranging from 1.5 years to 10 years for those who had conducted all of their university studies there), in financial backgrounds, and in current funding situations; all students at the UofT received guaranteed graduate funding, while the funding situations were much more variegated at ICL.\textsuperscript{45} In what follows, all students were given pseudonyms, and I refer to broad discipline areas rather than departments (e.g. life sciences) to protect their identity.

\textsuperscript{44} At the UofT (2006-7), there were 12,000 students enrolled in graduate studies coming from 130 different countries of origins (author’s calculations). Of these, 14.6% held study or work permits, and 14.4% were permanent residents (many obtaining this status during their studies). The latest data available at ICL (2004-5) indicates that 26.5% of all 11,000 attending students were either EU or non-EU/overseas students (i.e. not domestic UK residents). At the postgraduate level (taught and research), 33% of the 3,309 full-time students were from non-EU countries (1089/3309). A distinction between UK and EU students that comprise the remaining 66% of postgraduate students is not available (ICL 2005).

\textsuperscript{45} Three non-EU students at ICL were working part-time as laboratory assistants while doing full-time PhDs to avoid paying full international student fees (full-time employed students were charged domestic fees). All other students had received external funding, but the sources ranged from winning external state scholarships (ORS, Marie Curie), being funded through their advisor’s external grants, or by receiving individual scholarships from industry.
Table 2.1: Characteristics of science and engineering student interview participants

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>Enrolled degree</th>
<th>Migration status</th>
<th>Citizenship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toronto</td>
<td>n=20</td>
<td>7 women 13 men</td>
<td>10 PhD 6 MASC 3 MSc 1 MEng</td>
<td>Chile China (4) Cyprus Dominica Egypt Germany Greece India (4) Indonesia Iran (2) Iran/ America Lebanon (2)</td>
</tr>
<tr>
<td>London</td>
<td>n=27</td>
<td>13 women 14 men</td>
<td>22 PhD 5 MSc</td>
<td>Canada/Taiwan China (5) France France/Peru Germany Germany/New Zealand PR India (2) Israel Japan Malaysia (2) Nigeria Serbia South Africa/China Spain Taiwan (2) Thailand (2) USA (2) USA/China/UK</td>
</tr>
<tr>
<td>Combined</td>
<td>n=47</td>
<td>21 women 26 men</td>
<td>32 PhD 15 MASC/MSc/MEng</td>
<td>33 student permits 5 permanent residents or EU citizens 4 work permits</td>
</tr>
</tbody>
</table>

Lastly, it should be noted that investigation of the demand side of labour market entrance, such as employers’ perspectives and preferences and the availability of jobs in academia or in various local industries, was beyond the scope of this project. Moreover, although all students were in the final year of their studies, some interviews occurred in the fall, when the business cycle is often at a low period, and all took place before the financial crisis of 2008. Therefore, the extent to which this study considers the influence of regulatory environments was restricted to the issues that arose in interviews at particular times and places and should be understood as a limited investigation. Nonetheless, students’ reported plans upon completion of their programs at the graduate level are often reasonably reflective of

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Count</th>
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<tbody>
<tr>
<td>advanced computing</td>
<td>1</td>
</tr>
<tr>
<td>aeronautics, composites</td>
<td>2</td>
</tr>
<tr>
<td>applied math</td>
<td>1</td>
</tr>
<tr>
<td>astronomy and astrophysics</td>
<td>1</td>
</tr>
<tr>
<td>biochemistry</td>
<td>2</td>
</tr>
<tr>
<td>cell biology, medicine</td>
<td>1</td>
</tr>
<tr>
<td>chemical biology</td>
<td>1</td>
</tr>
<tr>
<td>chemical engineering</td>
<td>7</td>
</tr>
<tr>
<td>chemistry</td>
<td>4</td>
</tr>
<tr>
<td>chemistry/chemical engineering</td>
<td>2</td>
</tr>
<tr>
<td>electrical and computer engineering</td>
<td>5</td>
</tr>
<tr>
<td>genetics and development</td>
<td>1</td>
</tr>
<tr>
<td>haematology</td>
<td>1</td>
</tr>
<tr>
<td>laboratory medicine and pathobiology</td>
<td>1</td>
</tr>
<tr>
<td>material engineering</td>
<td>1</td>
</tr>
<tr>
<td>material engineering, biomedical</td>
<td>1</td>
</tr>
<tr>
<td>mechanical engineering</td>
<td>2</td>
</tr>
<tr>
<td>molecular cardiology</td>
<td>1</td>
</tr>
<tr>
<td>molecular genetics</td>
<td>6</td>
</tr>
<tr>
<td>optics and photonics</td>
<td>1</td>
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</tbody>
</table>
their actual experiences (Fox and Stephan 2001) and help us to understand the ways in which international students strive to exercise control over and set limits on their own destinies.

**Post-graduation plans and strategies**

As discussed, the literature focusing on international students' mobility decisions suggests many factors are involved, but the role of careers within the science field has not been explored. This chapter argues that professional strategies are paramount to international student’s next steps, but also that this issue is fundamentally interrelated with two other main factors, namely personal and social concerns, as well as political and regulation considerations and influences. For most students, discussion about their post-graduation plans involved their talking interchangeably about all three issues – professional, personal, political – rendering perceptions and strategies at the critical moment of graduation extraordinarily complex. However, before considering each of these in turn, I emphasize that these categories are far from discrete, with interviewees expressing complicated and nuanced preferences, often describing how the relative weight attributed to certain factors was contingent on a particular scenario, making a clear prioritization of factors impossible. For example, a student’s preference for a certain type of job might differ depending on whether or not this was in the context of having returned home to be with his or her parents or having moved elsewhere to join a partner. While several patterns emerged on this issues based on various axes of differences (e.g. gender, ethnicity, age, citizenship), in this chapter, I emphasize the commonalities and differences found between the two case studies, Toronto and London.
Professional considerations

Breadth of career options

As with domestic graduates of science and engineering programs (Vitae 2009), nearly all international students interviewed in both sites perceived that they had a broad range of potential careers from which to choose upon graduation. While 15% of respondents were solely committed to pursuing academic careers, the majority was considering several options in the wide spectrum of employment paths they saw before them. Students frequently cited potential prospects to include pursuing professorships, research careers at universities or companies in industries similar or complementary to their research fields, management or sales careers in science or engineering-related companies, working as a laboratory technician in a hospital, or running clinical trials for pharmaceutical companies. To add to this list, several ICL students cited further options: starting their own company based on work from their research or engaging in other science-related (non-research) jobs such as patent law, science policy or popular science writing. While preferences seemed to vary with personalities, and discussions were largely hypothetical at this point (only 10% had received job offers, and some with offers were still considering other options), it was the intellectual excitement associated with proposed projects, the interest and possibility for career development within a company, as well as the expected job conditions (pay, requirement to work weekends) that seemed to have the most influence over many students in one direction over another.

Non-science related options were also discussed in both sites, although much more frequently at Imperial. While few students had experience in business, nearly half of all students felt their quantitative and analytic capacities would hold them in good stead to enter into more lucrative and faster-paced fields like business consultancy. Only Imperial students, however, also mentioned being interested in working at investment finance, banking, or
accounting firms. Notably, with the exception of just two Masters-level students, this option had only became an interest during the course of their ICL studies and had not been anticipated as an option when they were beginning their studies.

The wider and more flexible range of career options cited by ICL students seems to be largely attributable to the training and career guidance provided by Imperial’s career services and graduate schools, as well as wider governmental effects of Imperial as an institution. For instance, throughout the school term, many interviewees had attended courses targeted to science and engineering researchers on issues such as intellectual property considerations, commercialization opportunities, and science and the media. These sessions give students the awareness and confidence to speak about the transferability of their skills, as well as the high-quality recognition associated with a degree from ICL not only in the UK but also around the world. A quote from Frederika, a German PhD natural sciences student, is particularly emblematic of how her time at Imperial has expanded her sense of opportunities (and capabilities) outside formal science careers:

I’ve sort of learned through Imperial I can do anything! No honestly, because before, before I started the PhD, I was very, well, narrow-minded in the sense of a scientist. I thought I could just do scientific jobs, you know, either stay in academia or go in industry and just be a scientist, be in research and development, or whatever... or going into teaching, but always something to do with chemistry. But here, they show you, oh my god, you can do everything. You know, you can work in the City, in business and in banking because all of those qualities that you have, that you sort of gain as being a PhD student, they value those skills... like your analytical skills, or working under pressure, or working in a team, all of those sorts of things. I mean they really shape you. (emphasis added)

In addition to the formal advice provided through the university’s career support services, students also made comments about their relying on the advice of their supervisors and

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46 During my fieldwork, I was a participating observer at Graduate School sessions on IP considerations and “finishing up and moving on.” These courses are open to all students, and as popular with UK as with international students.
learning about possible options from their local networks of former classmates and friends. As well, the presence of a large number of consulting and finance companies at Imperial’s career fairs left a lasting impression on many international students of potential employment options given their education. Kenneth, a soon-to-be PhD graduate of a program on composite materials in aeronautics, confidently says:

I could work for an airline company, manufacturing... I could work for a whole host of people. I could work for banks, accounting firms. The only people I can’t work for are the electronic or IT companies because basically I won’t compare in terms of programming... I could do a lot of other things though. If you take [Imperial’s] careers fair and a list of companies [that attended], I could probably do 70-80% of the companies there, any of them, because of the degree.

Many more students at Imperial also spoke of having longer-term entrepreneurial plans, learning from the direct advice and general culture at the university, including the prominent work of Imperial College Innovations Ltd., a technology development company wholly owned by the university, known for creating companies at the rate of one per month.47 For example, Paresh, a PhD student in engineering from India at ICL, comments:

And being in the lab I’ve seen how entrepreneurial some of these [professors] can be. My own advisor, for example, he has spun out full companies from the lab... it’s something worthy of emulation I think.

Although the University of Toronto similarly offers university-wide and some departmental career services, such as the non-credit “Entrepreneurship 101” course that provides lectures for the university community on strategies to open a business, the overall breadth of programs

47 Imperial College Innovations Ltd. (IC Innovations) is organized into two divisions to cover biosciences, and science and engineering, and representatives spoke to students at several of the graduate school sessions. Web site at: www.icinnovations.co.uk
for science graduates is not comparable, and students at UofT do not seem to have participated or been affected to the same degree.\textsuperscript{48}

The differences in students’ perceptions of economic and career opportunities in Toronto and London suggests that students’ subjectivity and their sense of their career prospects and capabilities can be shaped by the institutional environment in which they are studying as part of the process through which educational systems contribute to the production of ‘global’ or ‘cosmopolitan’ subjects and flexible workers (Mitchell 2003). As the strikingly triumphalist tone in many of these narratives imply, students in both institutions by-and-large had confidence in their ability to transfer their skills into a variety of different industrial sectors and potential career paths.\textsuperscript{49} By the nature of being international graduate students, these students likely represent the elite of their home schooling environments and societies, and one can expect that their current career aspirations and expectations are informed by their past experiences and educations. However, the frequent references to valorizing entrepreneurial activities, the ability to unproblematically transfer between different kinds of jobs, or to access elite financial service employment, suggests that international students at ICL began to internalize messages regarding global privilege, flexibility, and reputation, suggesting that Imperial has a productive role in (re)shaping students’ expectations. These findings suggest that the institutional environment where students study has a significant influence on constructing certain kinds of subjects equipped with the confidence as well as the social and cultural capital to aspire to enter into elite labour markets.

\textsuperscript{48} For more information on Entrepreneurship 101, see: http://www.marsdd.com/mars/Events/Event-Calendar/Ent101.html
\textsuperscript{49} While the celebratory tone of students’ employment prospects may also be due to students wishing to frame themselves in an optimistic or positive light during the interviews, the consistency of this message through the interviews despite having discussions of other challenges and difficulties leads me to believe that many believed in these favourable prospects.
The differences between employment expectations held by these STEM (post)graduate international students at Imperial and Toronto may also be attributed to several factors beyond the regulatory and governmental effect that each institution has played. Unfortunately, this research is not able to assess the differences that exist in the particular set of local and non-local opportunities available to the students, nor their individual potential to obtain work in these fields because of differences in their academic preparation. Nevertheless, the extent to which ICL grads were aware of and interested in opportunities in the City of London firms suggests the strong local tradition for City firms to target graduates with advanced science and math degrees from select institutions also involves international graduates. Moreover, differences in the financial and social status of the students attending ICL and Toronto are worth considering in relation to the different institutional fee-paying structures at each university. Because UofT guarantees funding for all graduate students, international students are assured from the outset that they can be relatively financially independent while conducting their studies; in contrast, ICL international students face higher fees and often do not have clear funding arrangements for the duration of their studies prior to commencing or accepting their offer of admission. Being able to entertain postgraduate study offers that require considerably individual financial contributions or risk, as is the case at ICL, suggest that, on the whole, students able to pursue studies at Imperial likely have greater access to substantial financial resources if need be.

In terms of students wishing to pursue an academic career, clear parallels exist between students’ strategies in both cities, such as striving to achieve strong publication standards. Students in both sites felt they had a full knowledge of possible academic positions through postings circulated through international email listservs and their professional networks. The perceived role that post-doctoral fellowships played as a steppingstone to academic careers did differ, however. Students in Toronto tended to describe doing a post-
doctoral degree as a requisite next step to keep an academic career possible in Canada, usually suggesting that this meant that they would need to change labs, cities, or even countries to be able to return as a candidate for an academic post in Canada. As Kristina, a Greek PhD student in Toronto, says:

...if I am to do a full post-doc, it’s good for me to move on in another university or another town... because in our field they say that you have to convince everybody that you can work out your way in every system that you will meet. So different countries have totally different systems. But they say at least a different town.

This supports Musselin’s (2004) finding that many early career researchers pursue foreign post-doctoral degrees as a strategy to improve their chances for an academic post in their own home country, not because they wish to remain abroad, although in this case, the international students in my sample were discussing Canada as “home.” Because most international PhD students in Toronto will already have international experience on their CV, going outside Toronto was primarily an interest for those wishing to return to Canada. In comparison, PhD students in London tended to describe post-doctoral degrees as the “easy” choice that could be arranged by just “calling up someone and arranging something” or by accepting the offer many had received to remain in their current lab. In this context, post-doctoral degrees were a strategy either to further specialize or expand research competencies and thus enhance the student’s industry prospects or as a tactic to delay making career decisions immediately after completion of the PhD. ICL students were likely more interested in gaining time to explore their options before needing to make serious career choices because their PhD program was shorter in duration (three years, with varying funding arrangements) than their Toronto counterparts’ (four years, funded). Unlike the international students in Toronto, and as expected, interviewees in London never described remaining in a London or UK university as a potential detracting factor in their candidature for positions in the UK or elsewhere – a finding that is not
surprising given the long standing perceived power, centrality, and quality of higher education and research in the UK, particularly among students from former British colonies.

**Perceived geographic labour market horizons**

Given the breadth of their career options, not surprisingly most students in both sites felt they had broad geographic horizons in terms of potential work environments and sought to find an optimal combination of work conditions with an attractive quality of life. However, what students considered desirable in different living and work environments varied considerably. Considering academic jobs first, three students (two in London, one in Toronto) held job offers back home in hand prior to embarking on their PhD overseas (funded by their employer or national government), but most others were considering jobs in a variety of countries and felt this was necessary given the nature of their field and the context of the tight job market internationally. Some students expressly did not wish to return to their home countries to work in universities because they felt conditions were unfavourable for women (Iran) or for junior scholars because of perceived nepotism (Greece). While preferences for national research systems differed, many said they would target positions in the USA, Canada, the UK, as well as Australia, Germany, Switzerland, and France. The students focused on the prestige of the lab or institution, the research resources available, and the vitality of the academic community although some students were concerned about life outside the lab in non-English countries.

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50 The students who had received full scholarships from the national governments were from Thailand and Egypt and felt a strong sense of loyalty to their countries for the opportunities they had been given. These students were highly cognizant of the extent to which their studies were a status enhancing moment and they wished to “give back” to their communities some of the benefits they would be receiving.
This perception of an almost limitless geographic boundary to potential labour markets was comparable to discussions of non-academic jobs as well, either because they believed in the portability of science skills and the global recognition of their advanced degrees from Anglo-American institutions or because living overseas had imbued many international students with the feeling that they could now live and work globally. As Nerea, a Spanish life sciences student in London, says:

One thing that you gain from the experience of being abroad is that you are actually exposed to the big world. (...) You just start thinking on a little bit bigger scale. You’re here and so suddenly it’s like there are almost no boundaries. It’s like you can go anywhere in the world.

Such “world is my oyster” sentiments invoke the footloose portrayals of privileged elite transnational migrants, cosmopolitan capitalists or global businessmen (e.g. Hamilton 1999; Ong 1999; Sklair 2001), and match the self-assured tone with regard to the breadth of prospective career opportunities. However, students were aware, when pushed, that actual job opportunities were limited to certain environments. Most simply did not feel intellectual or institutional barriers to the transferability of their academic competencies (although other factors come into play, as discussed in the next two sections). For most students, their knowledge of the geography of employment opportunities tended to be drawn from information available on the Internet about relevant companies, known industrial clusters related to their field, and potential jobs back home.

Some theories of job search behaviour in the new economy, especially in knowledge-intensive or cultural industries, suggest that workers consciously situate themselves geographically in a labour market thick with multiple potential employers as a strategy to mediate against the risk of potential job loss. However, while many international students expressed having targeted job search preferences – for example, those interested in careers in
biotechnology were targeting companies in Cambridge-Oxford-London and Boston, and those interested in software or IT companies spoke of the near inevitability of moving to Silicon Valley after graduation – few associated this choice with a deliberate attempt to protect themselves against job risk. Instead, they explained that this is “simply where the jobs are.” One interesting exception was with Marianne, an American PhD student in London who had lost her job while working at a research centre in a small German university town prior to beginning at Imperial. She explains how this experience influences her consideration of locations for future employment:

So when we were told the company closed, I immediately realized as a foreign national I will have more difficulty getting a replacement than other individuals from the EU maybe there. But in London if... let’s say if this whole side closed down there still would be a lot of opportunity just because there’s a critical mass here. ... we’re told the average lifetime of a biotech is four years. The next day [after] the market crashes, your job is over. If I were in a little town somewhere, I would actually have to physically move to get another job. But being in London I could probably find another job quite quickly. So I think in London you could take riskier jobs if you were inclined to do that, with in mind that you could find something new relatively quickly without having to move.

Other students considered the geography of the job search strategies in the context of where their degree would have its strongest value. Particularly among Indian, Chinese, and Taiwanese students in both sites, the sense was that they were internationally competitive with their skills, but believed their overseas degree would have greatest purchase in the context of the labour market back home where the likelihood of peers having had been able to accrue similar symbolic capital was lower. For some, it was the combination of having abundant work opportunities and being able to regain linguistic and cultural comfort that makes returning home an attractive option. As Susan, a mechanical engineering student from China at the University of Toronto, explains:

I’m not quite sure about this feeling to go back to China during these two years... how to say that... even though I have lots of friends in Toronto now... China is booming now so
I think you can find lots of chances to develop your career there, I think so. (...) Another thing is I think I have an advantage in China, language... no matter what you do you have to communicate and that would be quite easy for me in China rather than other countries. I would be more confident there.

Several Indian students also spoke of the expanding work opportunities in private and public research labs in their home country, as well as the possibility to easily combine an academic career with business opportunities, as particularly appealing. Samar, a student in natural sciences, describes his strategic reasoning accordingly:

... just like software was outsourced to India, just like manufacturing was outsourced to China, I also foresee that research will be outsourced to these countries. It's already being done. It will be done more in the future because it’s a cheap way to do research. Big companies want their research done cheaply, or at a less cost to them. If they have to go to MIT or Stanford or Imperial or the University of Toronto always, they are going to have holes in their pockets. On the other hand, if I am someone who can set up a competitive group in India which will deliver well-classed research, I can be a person who can attract some of the funds (...) On the other hand, Indian investing is developing as well at the same time, and they do our investing in research. It’s a good time to be there.

Notwithstanding this confidence, several of these students were also conscious that the economic and educational growth in their countries also meant the labour market was highly competitive. In relation to the Chinese market, Fannie quips, “There are tons of jobs but tons of people as well, so it’s not easy.” As a result, many students hoped to eventually return home but wished to delay this move by gaining overseas work experience after their studies to better their starting position back home. Cindy, a Taiwanese PhD student in medicine in London, states:

I think at this stage all the Taiwanese [employers] tend to look for someone more international. and I’m in a good position to be international to find jobs throughout the world [from London] and I think that gives me a better position than if I go back to Taiwan. So I’m not saying that I don’t want to go back, but I want to go back with a desired post so that I can live there with a better life.
This quote illustrates the long-term and deliberate planning undertaken by some students to combine an international degree with a work portfolio that would position them for global careers, as well as make them attractive with employers in a competitive back home.

Lastly, some students also spoke of targeting their job search to the city in which they had studied, knowing that local employers would likely recognize their credentials. This was especially true for the soon-to-be graduates in London, who wanted to remain after graduation because they felt their employment prospects were good in a range of fields, and staying in London would give them a chance to enjoy the cultural attractions and explore the city for a year or two once free from the demands of graduate school. This sentiment was especially true for those keen to leave the field of science to make considerable money in the City. In comparison, some students wishing to stay in Toronto felt they could employ personal networks to gain research positions affiliated with MaRS or the local network of hospitals in Toronto, but many felt there were simply insufficient research funds available for many students to envisage staying in the city for a long-term research career.

Taken together, the international graduates of STEM programs in Toronto and London felt they had an extraordinarily wide set of potential job types and locations where they could apply their skills. However, their sense of what options they had and the strategies that they would adopt had been shaped by their experiences within the different institutional and urban cultures, with students at Imperial discussing the greatest attraction to entrepreneurial and non-science opportunities, and illustrating the strongest tendency to represent themselves as privileged and on the cusp of global careers.
Personal: balancing relationships, dual careers, and familial concerns

Personal issues and relationships were also highly significant for international students’ post-graduation plans. In both Toronto and London, graduating students spoke of considering their partner’s careers, their parents, future family plans, and the value of cultural ties and feeling a part of a cultural community. Given that all respondents were in their mid-20s to early-30s, it is perhaps not surprising that students were mindful of this as a transitional period in their lives. Longer-term family planning – with respect to partners, possible future offspring, or their aging parents – was not far behind professional considerations, underlining the life-stage-specific nature of career and migration processes (Kobayashi and Preston 2007).

Indeed, despite being aware and accepting of the international mobility expectations in science and academic careers (Ackers 2004), many viewed their future mobility as temporary, as something to pursue for another few years to advance their careers before settling down and assuming familial responsibilities.

Family and social issues were raised in both sites, and there were only slight differences in the number of times these concerns were discussed by male and female respondents. More telling was interviewees’ relationship status; of the 47 interviewees, nine were married, and another 16 considered themselves to be in “significant relationships;” the remaining 22 were either single or described their relationship status as casual. The number of times that “single” respondents spoke of family or social considerations was noticeably lower. As this section should therefore attest, the nature of decision-making often involved varying relations with parents and/or partners (whom they are either living with or who also live abroad), suggesting the need to extend our thinking of social formations beyond the household, or what Hardill (2004) calls the “residential unit of everyday life,” to more informal and transient, albeit still influential social units.
For those students involved in relationships, many spoke of the need to balance dual careers when considering their next steps. Unlike some of the studies on transnational households, this was often not a scenario of there being a trailing partner (e.g. Green 1997; Yeoh and Willis 2005). Instead, many respondents described both partners as having equally powerful careers and as being at a critical stage in their development, meaning that finding career-relevant employment in the same place was a particularly challenging prospect (Costa and Kahn 2000). Padina, a recent PhD graduate in medicine at UofT from Greece, describes the difficulty in balancing her career with that of her husband, who is also a scientist:

We don't know. That is something that we are trying to work out. Probably he won't be able to move right away. Maybe he can do a sabbatical, but I don't think we can both move and then come back. It's just because we are in different points in our careers, so that's actually a problem. And if we do decide to have kids, it becomes really difficult, so it is a problem. We do talk a lot about it.

As Ackers describes (2004, 196), dual science partnerships is an unusual scenario where “male and female partners are in careers which demand both a level of skill and mobility.” The challenges faced by partners who are both academics to find satisfying employment in the same city have been well-documented elsewhere, also known as the “dual-body problem” (e.g. Wolf-Wendel, Twombly, and Rice 2003), yet the ensuing difficulty that such arrangements create for couples already pursuing international educational experiences is further heightened.

When the other partner does not have similar scientific mobility expectations, the challenge becomes one of finding a location where there are sufficient but different employment opportunities for both partners. For this reason, many of the international students acknowledged that they were trying to accommodate their partners’ careers; thus their job search was limited to major cities where a sufficient depth of employment opportunities could be found. This consideration also involved discussing whose career was
“more flexible,” and it was more often than not the female respondents who expected to defer to their partner's career limitations. For example, Frederika, a German PhD student at Imperial on a prestigious Marie Curie Fellowship, says, “I’ve already got a lot of places in mind because I need to find a place together with my boyfriend. Otherwise, this relationship is just not happening.” This sentiment supports the findings by Shihadeh (1991) and Ackers (2004) that women are more likely to defer to their male partner’s career because they are socialized to put relationships and family first. Still, because many graduates’ partners were also still pursuing their studies, many also expected that the next move might not be permanent and that the issue of negotiating ideal jobs and location for both partners could be revisited in the future.

The choice of location was also influenced by the fact that many couples were already in transnational relationships. Unlike the common suggestion that personal concerns pull students “back home,” many of the respondents in this survey held geographically diverse personal ties. Some students had partners from different countries whom they met while studying in London or Toronto, or from previous overseas study or work experiences; others had partners back home, while others yet had partners from home but who were also studying or working abroad in a third location. For example, Kenneth, a Malyasian PhD student in applied science at ICL whose wife (also from Malaysia) was pursuing (post)graduate studies at a university in Boston, USA, suspected that they would both try to find work in the United States or Australia upon completion of their studies because his wife’s work opportunities were better in those countries. The result of such situations was that many students felt pulled in multiple geographic directions for various personal and professional reasons, a far cry from the binary “return home or stay” scenario often depicted in the literature.
Given the life-stage of many of these graduate students, locational preferences were not limited to dual career considerations, but also revealed changing priorities and a new appreciation for places that would enable work-life balance for those considering future family life. Factors such as state maternity leave provisions, the likelihood of at-work child-minder services being available, and the quality of the education system for children weighed into the consideration for quality of place for these science and engineering students. For example, Xiang, a medical PhD student from China in a relationship with an Irish student that she met at UofT, explains that they might stay for future family reasons:

As for being a parent, I hadn’t really considered seriously having a kid... But now I’m 30 and sometimes I think maybe I will start to think of having a kid at 35. In that case, one thing is that Canada is really a great place for having a kid. You have great care for a year’s maternity leave, so it’s really great and both parents can take it.

This quote also illustrates the multiple scales of institutional influence shaping the attractiveness of certain environments for students, in this case the scale of national welfare regulation. While Toronto and London were both generally considered favourably in this regard, municipal level differences, such as the cost of the housing market meant London was often seen as too expensive or hectic to be a welcoming place for a young family.

Parents and siblings were also strongly influential considerations for nearly all students. Many felt a responsibility to return home to take care of their parents as they aged and to repay them for the investment they had made to enable them to study abroad. For some, there was no question of their need to return. Sabal, a Masters student from India, says, “I know I have to go back. It’s how it happens in India. Children take care of their parents, so...” In comparison, Hilary, a PhD student spoke of possibly staying in Canada because she could earn more money and send it back to her parents in China, instead of moving back to China and working there. She says, “I just feel that my parents spent so much money on my tuition... and if
I go back and get a job that can never allow me to pay my parents back, that doesn’t make it an option for me.” A different option expressed by several respondents in Toronto (but none in London) who felt a strong responsibility to take care of their parents was to bring their parents to stay with them in Canada so that they could care for them as they aged. In comparison, for some Chinese students in London, Singapore was becoming a compromise option because it would offer a lifestyle similar to the one they had become accustomed to in London, but would also be more culturally and linguistically comfortable for their parents. As Fannie says:

The last time [my parents] came over here, they have this problem of English, so I can’t leave them alone. So if I could live in a country somewhere like Singapore where people speak Chinese or is Chinese-based, it’s also easier for my family to move so we don’t have this problem of communication.

Regardless of these various scenarios contemplated, it was evident that choosing a path that might entail not returning home was often fraught with emotions, and students felt torn between their choices (Alberts and Hazen 2005). Even those who described themselves as independently minded and career-driven described their choice as difficult. Icarus, a Cypriot PhD student in Toronto, stated:

I always have the push from my parents that you come back... But it’s something that I’m trying to fight with myself... I’m trying to find otherwise, like for example to be able to visit Cyprus more often instead of going and staying there.

Many were finding that these feelings were intensifying the longer their time abroad and as parents aged. Kaeda, a Japanese PhD student in skin sciences in London, explains how this is the case for her:

Because if I decide to stay in this country or another country, obviously it’s not so easy to see them often. And they’re getting older and then they need some help or somebody needs to look after them. But if I would be staying here or if I decide not to go back, who would look after them? But also maybe I may regret it because my parents pay for me, all my education, that’s why I’m here. (...) That’s why I cannot really decide whether I really want to stay in this country or go back.
As these quotes illustrate, the scope of personal considerations facing international graduate students is closely related to their age and life-stage, as several try to negotiate transnational partnerships, as well as parental and child-raising strategies, leaving many students feeling pulled in more than one geographic direction. For many students, their relationships had changed while living abroad, as had their sense of priorities and responsibilities, often as a result of their new awareness of institutional supports and different cultural norms. The students indicated that their desire to stay or move elsewhere for personal reasons had been shaped somewhat by their experience in Toronto or London, not just because of the general "attractiveness" of each city.

**Migration regulation and citizenship considerations**

In addition to career and relationship factors, many international students also expressed concerns and pondered strategies regarding their migration status, residency or citizenship upon completion of their studies. Because I adopted a broad notion of international students, requiring only that they had moved to either Toronto or London from another country expressly for their studies, there was diversity in terms of students' status and their legal entitlements to work. Most had temporary permits – study or work visas – and would have to change or re-establish their status after graduation, but some in London were EU citizens (5/27) or in Toronto had become permanent residents of Canada (5/20) during their studies and would not face similar pressures. Moreover, 15% held citizenship or permanent residency in more than one country, and another 15% changed their migration status during the course of their studies – from student visas to either work permits or to permanent residency status – illustrating the need to not assume all international students face similar regulatory contexts. When coupled with the obvious fact that the political-economic conditions
in the countries for which students held passports affected their residency and citizenship considerations, there was considerable diversity of perceptions and strategies regarding legal migration and work status. Nonetheless, patterns emerged between the two sites, especially regarding the parallel introduction of more flexible work permits and changes to highly skilled immigration programs.

Some commentators have suggested that many would-be immigrants are using the acquisition of a study permit as the first step of a “two-tier” immigration strategy, with the ultimate goal of receiving permanent residency in countries such as the US, Canada, and Australia (Borjas 2002; Hawthorne 2007). Few studies that explore where and why students study abroad support this as a widespread original impetus. Instead, many believe that the incentive to remain in a country after graduating often comes after establishing professional and personal ties there (Hazen and Alberts 2006). However, as an increasing number of states are changing their regulation to make staying more attractive to students through strategies such as easing post-graduation work permit regulation and routes to permanent residency and citizenship (Lowell 2001; Findlay 2006; Kuptsch 2006; Shachar 2006), little is known about how regulatory frameworks play into students’ post-graduation plans.

Generally speaking, this research found that students with temporary status who expressed an interest in staying for a year or two after graduation to gain work experience were concerned about the ability to obtain a temporary work permit. They expected employers to prefer hiring candidates with long-term residency status or citizenship in the country so they perceived themselves to be at a relative disadvantage in an already competitive local labour market. However, there were differences in these perceptions in the two cities.

51 EU students in London and PR students in Toronto would not require a working visa if they choose to remain.
At the time of my interviews in London, the UK had just launched the International Graduate Scheme (IGS) to allow students from outside the UK and Europe to stay for up to one year on a work permit, regardless of academic discipline and without requiring a formal job offer.\textsuperscript{52} It replaced the Science and Engineering Graduates Scheme (SEGS), which, as the name suggests, restricted potential applicants by academic discipline. Despite the trend of loosening requirements by the government, few students were aware of the specifics of the changing framework, and they widely regarded the programs as confusing and changing too often to master the details. Moreover, several students believed that employers would still consider hiring them on for a short-term basis to be too much trouble. The regulatory deterrents especially were considered to be significant among small or start-up biotech companies; in contrast, the widely held impression was that large international banks had the capacity and willingness to deal with work permit issues for recent graduates and would be willing to hire international graduates. Therefore, the IGS did not seem to alter these advanced STEM students’ post-graduation intentions, one way or the other.

In Toronto, the regulation also changed during the course of my fieldwork when the Canadian government expanded the Post-Graduation Work Permit (PGWP) program. This program previously allowed graduates to remain for one or two years (depending on the city) and required a formal job offer; it now offers a three-year work permit program to all applicants and no longer requires a formal job offer.\textsuperscript{53} Previously, students were also required to find an employer to sponsor their work permit application before their study permit expired,

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\textsuperscript{52} The IGS has since been replaced with the Tier 1 Post-Study Work scheme. For more information, see “Post-Study Work”, workpermit.com. URL: \url{http://www.workpermit.com/uk/uk-immigration-tier-system/tier-1/graduate-students-post-study-work.htm}. Last accessed 12 October 2009.
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\textsuperscript{53} One year was granted to students wishing to work in Toronto, Vancouver, or Montreal, and two years was granted to students wishing to work elsewhere in the country because the government sought to geographically disperse valued graduates’ to meet labour market needs across the country. The old regulation also required the applicant to have a job offer, coupled with a “labour market opinion,” which stated that no other Canadian or PR could been found for the advertised position.
\end{flushright}
often meaning they were scrambling to make contacts, do interviews, and submit paperwork for the permit during the final and busy stage of their studies. Permitting international students to apply for a work permit without a formal job offer and giving them several years to find work that they considered relevant not only made many feel much more at ease with the prospect of staying but also increased their confidence in dealing with prospective employers. Jahan, an Indian student finishing his degree in chemical engineering in Toronto, explains how this regulatory change had influenced his work strategy:

...the main difference would be the work permit. Like oil companies, they ask if I am eligible to work here. Previously I wouldn’t be able to say yes, like, truthfully. After I get my job offer I could get my work permit, but all the applications they are online so you don’t get to explain that (...). But now probably I can say, ‘Yes, I can apply legally.’ Like, the work permit - they give open work permit now for three years, so, ...I can just say to the company that I have a work permit.

Put differently, for those already interested in remaining after graduation, the easing of the requirements in Canada made the option of staying to find work more attractive; for many not previously considering this option, it sparked an interest in their staying. To what extent this influenced strategies is difficult to ascertain, given the range of other factors already being considered and the recentness of this policy.

The differences between students’ perceptions regarding work permits in Toronto and London can in part be explained by the differences in the regulation itself. The Canadian offer of three years was more generous than the UK’s offer of one year. However, the dissimilar public framing and the institutional guidance may also have been influential. For example, coverage of the work permit changes in the Canadian media framed this as a “new opportunity” for foreign students to establish stronger ties and to gain work experience while being beneficial to the Canadian economy, and many emails, brochures and information sessions on the changes were organized by International Student Centre at the UofT. At one information
A session held on campus to explain the new rules in fall 2008, over 300 students attended. In comparison, awareness of the details was lower among students in the UK, and the accompanying language in the UK tended to describe the changes as “permitting” or “allowing” students to remain for a short period. When coupled with the frequent negative tone of migrants taking British jobs or of foreign students as essentially “cash cows,” few international students in London believed the British public and government desired that they stay.

In addition to changes to temporary work visa regulations, significant permanent immigration regulations were being introduced during the time of this research, providing new avenues to “permanent resident” or “indefinite leave to remain” status in Canada and the UK respectively. These changes even more strongly influenced the shaping of students’ post-graduation strategies than the work permit changes did. And yet again, the effect was stronger among students in Toronto than in London. While only one student in Toronto acknowledged that the potential to migrate played into his original motivation to come to Canada – this student from Lebanon received a comparable PhD offer from a top institute in Switzerland but “chose Toronto because of the possibility to settle there more easily in the longer term” – several students from the Middle East region acknowledged that the economic and political security available to immigrants in Canada made pursuing the traditional immigration routes an obvious strategy once here. For most other students from other regions, there was more variegated interest. However, the introduction of a new entry “class” for immigration during my fieldwork called the “Canadian Experience Class” (2008) seems to have dramatically altered the way many students evaluated their future options. Like the previously existing immigration points-based system, this new program evaluates applicants on a range of criteria, but unlike the traditional economic class route, this stream makes previous work or study experience in

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54 Tier 1 of the UK’s new national immigration scheme that began begin rolled out in 2009 has since subsumed the Highly Skilled Worker Program.
Canada a key factor in gaining admission. Now international students, along with workers in select skilled occupations and professions who have studied or worked for two years in the country, may apply to become landed immigrants from within the country, thereby fast-tracking their application and meaning that, to apply, they no longer need to leave the country and join the overseas queues after their studies.

For many students in Toronto, these changes affected their post-graduation strategies immediately and significantly. For instance, interviewees spoke of this new offer of permanent residency as being “too attractive an opportunity to miss,” or that given the time already spent in the country, that “it would be a waste if you don’t.” Permanent residency in Canada (commonly described as “PR status”), they explained, would provide greater economic opportunities, would increase or ease their global mobility rights, and would give them the option to stay in Canada or return home when most convenient for them, not according to work permit limit durations. However, many also acknowledged that this reasoning formed part of their long-term strategic planning to better their positioning and increase the range of options for them upon graduation, and was not necessarily based on a wish to remain permanently or to settle in Canada. In other words, permanent residency would provide them with greater immediate security and mobility from which they could then reassess their personal and professional aspirations. Hilary’s explanation of how the change in regulation with the Canadian Experience Class strengthened her interest to remain illustrates this frequent reasoning:

... I think another reason that I’m leaning towards staying here is because of the new immigration. I feel it’s a waste if I don’t because you can get this right after you graduate if I stay here. If I go back now and want to come back later, it will be a lot harder. So staying here is a smarter choice for now. If I get my PR, then I can go anywhere. I can always go back and then come back. It doesn’t matter. But if I just go back after graduation, I lose this opportunity and it will be a lot harder to apply in China. (emphasis added)
This high valuation of the new fast-tracked immigration route affected how many of the students prioritized their next steps in different ways. Because the details of the CEC program require two-years of study and one year of Canadian work experience, some considered altering their plans to meet this employment requirement as quickly as possible. Sabal explained he might forego an academic career route that would likely take his candidature outside the country and refocus on industry positions in Canada to gain the one year of work experience. Susan, a Chinese MSc student admitted to a PhD program, describes possibly delaying her studies for similar reasons:

One thing that’s kind of stopping me from considering a PhD is my immigration status. To be able to get a permanent residency in Canada, I have to have at least one year of work experience. But if I just keep staying at school, I can never get that one-year experience. I can never apply for being a PR, and it’s just not convenient. I can always stay here as a visa student, but every time I go back to China, I have to apply for a Canadian re-entry visa just to come back. So definitely I want to solve that problem.

These examples illustrate the extent to which the easing of permanent residency requirements was changing immediate career preferences and strategies for many international students at UofT.

Some students also felt that obtaining PR status would better their career opportunities within Canada because it would remove the requirement to apply for work visas to access the Canadian labour market and would thus ease employers’ wariness of dealing with foreign applicants. This concern was particularly strong for students working in sensitive fields, like energy or defense materials. Nathan, a Malaysian Masters student at UofT, explains:

...my Masters research is related to the nuclear energy field, and I want to work in the energy industry, but I think there’s lots of restrictions because a lot of things are confidential and they prefer Canadian citizens, especially if they are politically sensitive [like] nuclear. So I have this huge barrier to get into this industry.
Others sought PR status because it would enable them to be eligible for state-funded research grants (e.g. National Sciences and Engineering Research Council, the Canadian Institutes of Health Research) as a principal investigator, which is often restricted to permanent residents and citizens.

When several students were strategizing about the potential benefit of remaining in the country and obtaining PR status, they also were thinking ahead to the rights and privileges they would be able to bestow on their future children.\textsuperscript{55} For example, when asked why she had recently submitted her PR application, Kristina, a Greek PhD student, explains that her reasoning was based on a combination of career and familial considerations:

\begin{quote}
First of all, I wanted to open as many doors as I could. Second, I thought that if in the future any of my children would like to come back to Canada and I was holding a Canadian passport, it would be good for them because I think it’s a great country to have as a first or second country. It’s a great country to have their passport. Also for [research] funding opportunities. I realized very soon that the funding opportunities for international students are either low or not there, so I wanted to meet the competition.
\end{quote}

As Kristina’s quote suggests, some students’ permanent residency aspirations were followed closely by potential citizenship strategies and the related right to hold a second passport. Many such interviewees who discussed wanting a Canadian passport were interested in possibly staying long-term and becoming full and active citizens, but others admitted that they desired a Canadian passport because it would place them in better stead to access a wider set of national labour markets. Particularly for students from the Middle East, their perception was that they would be treated better or have improved access to the USA through a J1 visa or NAFTA visa if they could gain Canadian citizenship. Abdi, a PhD student in mechanical engineering, explains: “US has better, actually, opportunity to find a better job, but not always it’s easy, especially for Iranians to go to US. Unless you have some, maybe, Canadian citizenship as well.” Several

\textsuperscript{55} A permanent resident of Canada can apply for citizenship after three years of residency in the country.
explained, however, that it would be valuable more generally for opening future employment opportunities because it would ease the regulatory obstacles they face with their current passports; such thinking parallels the types of calculations that Ong (1999, 112) describes as “flexible citizenship” wherein migrants seek to both “circumvent and benefit from different nation-state regimes” for work and family reasons.

For students in London, the route to long-term status or “indefinite leave to remain” in the UK was through the Highly Skilled Migrant Program, which similarly evaluated students on a point system and credited applicants for their (high) level of education, (young) age, and previous experience studying or working in the UK. ICL also held information sessions on the different “business immigration schemes” at which students were introduced to the rules and requirements for applying and heard statements like this: “You’re exactly who we’re trying to attract.” Despite such encouragements, the level of interest in such schemes was considerably lower among visa-holding students in London, presumably because the requirements were more demanding: students would have to re-apply for the permit after two years and would need to work for five years before receiving permanent status. Still, some students were planning to look for work in the UK after graduation expressly in pursuit of this status. Liora, an Israeli PhD student at Imperial describes why she and her husband hope to stay long enough to get a UK passport:

... it might make our lives a bit easier for a job application (...) I definitely don’t want to stay here permanently. That I know for sure. I’ll never stay here in order to raise my kids until they are 18. It’s not for us, rather than more for our kids or future possibilities. And also I think if we come back to Israel, when you have a foreign passport, it can open other options of work. Because if you have a job that needs you to go abroad, or whatever... I think it just opens up for us more possibilities. I think there are a lot of limitations. That’s why it might open a few more doors.

Waters (2006a) has highlighted students’ use of education abroad as part of a strategy to acquire symbolic capital that will facilitate social and economic mobility and cultural
acceptance in different geographic sites. However, the problem of having legal access to the labour market remains. The case of students in Toronto and London illustrates that, for some students, multiple passports provide both convenience and confidence for professional and personal reasons and form part of pragmatic strategies to best position themselves for the future (Ong 1999; Ley 2005). For students such as Liora, the passport becomes less a symbol of loyalty to the nation-state and more about claims to participate in certain labour markets. As Benedict Anderson writes (1994, 324), “The segregated queues that all of us experience at airport immigration barricades mark economic status far more than any political attachments.” Nonetheless, despite the attractiveness of a UK or Canadian passport, students did describe a strong attachment and sense of identity and belonging to their nationality and the passport that they carry, and they were conflicted or uninterested in pursuing citizenship, especially if gaining a second passport was not permitted or was viewed unfavourably by their home.

Conclusions

The regulatory effects of particular cultural institutions, projects, regimes, and markets that shape people’s motivations, desires, and struggles and make them particular kinds of subjects in the world should be identified (Ong 1999, 5-6).

This chapter began with the observation that competition for international graduate students in science and engineering disciplines is a burgeoning element of talent-based economic development strategies in several advanced economies. Retaining these students is an important component of creating jurisdictional competitive economic advantage, either in the short term through the students’ intellectual contributions, or over a longer term if they become skilled migrants. While there is recognition of the significance of where these students find employment in terms of the differentiated abilities for regions and countries to thrive in
the knowledge-based economy, there is little empirical research to inform our understanding of the decision-making process engaged in by these students when they complete their studies. I propose that a comparative approach that explores students’ considerations in a transnational framework is necessary to begin developing a nuanced understanding of the factors and processes that commonly influence students based on their life-stage and disciplinary training, while also exploring how these processes might vary by place. This paper has offered insight into this process in two ways.

First, unlike most studies that vaguely suggest professional factors influence students’ post-graduation plans, this paper explored the particular career options and intellectual aspirations of international students with advanced degrees in science and engineering. The findings reveal that students considered themselves to have a strikingly broad range of possible careers before them. Feeling confidence in their analytical and research capabilities, students shared the expectation that their skills and knowledge will be valued in many different academic or science-based industrial contexts, as well as to a certain extent in business consultancy and finance. In short, students perceived few industrial or geographic boundaries based on their education. However, occupational strategies also tightly intermingled with residency considerations related to relationships, familial and social concerns that are significant for students at this life-stage, as well as practical citizenship or immigration regulation matters. The decision-making process is thus complex, for international students seek to balance intellectual drive, career ambition, financial considerations, and lifestyle preferences with managing relationships and migratory constraints. The confluence of these factors also tends to pull students in different geographic directions, indicating that the conventional ‘stay or return’ construct is too simplistic as a framework for understanding students’ future movements. Given that these findings are drawn from the individual case
histories of students with science and engineering training, the extent to which they may apply to students in other disciplines remains an important question for future research.

Second, this paper considered international graduate students as transmigrants with diverse political-economic constraints conditioning their individual agency. The findings of this study indicate that the multi-scalar institutional framework that circumscribes the lives of students while studying abroad does shape their sense of opportunities before them. There were multiple scales of regulatory influence shaping and constraining the choices made by students in these two sites (e.g. university, regional, national, supranational) and, while it was beyond the scope of this study to discern particular scalar influences, the findings here suggest that the multi-layered social space and institutional geographies affected students’ individual agency, and did so in different ways in both sites. In other words, the places in which students study are not mere backdrops to their career development and migration processes, but become constitutive to a certain extent of the possible work and broader life opportunities available to them. In other words, and as Ong (1999) suggests, these findings indicate the significant influence of place-specific regulatory ‘architectures’ on students’ perceptions of the career and mobility opportunities before them. To be clear, these findings do not suggest a deterministic relationship between social structures and individual behaviour, as students’ intentions varied with their individual inclinations and conditioned expectations as informed by their diverse backgrounds, but this paper indicates the need to give greater attention to the influence of place-specific institutional geographies in forming students as certain kinds of subjects and shaping their future trajectories. Given the continually increasingly level of attention placed on international students and their migration patterns, geographers clearly have significant contributions to make in understanding this important process.
Chapter 3

Capitalizing on knowledge bases: labour market considerations among international postgraduates in London, UK

Introduction

At a time when considerable importance is placed on the role that an educated labour force plays in the development of strong prospects within the “knowledge economy,” the international mobility of students and scholars appears to be emerging as a key issue for the competitiveness of nation-states, regions, and individual higher education institutions (HEIs) within advanced economies (OECD 2007; Kemp et al. 2008; OECD 2008b; Douglass and Edelstein 2009). The argument put forth is that the long-standing motivations to attract international students remain valid – namely to establish diplomatic ties, encourage academic diversity on university campuses, and gain tuition-fee payments – but a longer-term economic rationale to attract and potentially retain these individuals has gained currency. The reasoning is that top international graduate students are able to contribute to the intellectual activities of their institutions, thereby contributing to the role that universities can play in local processes of innovation (Kemp et al. 2008). If they choose to remain after their students, they may also become highly productive researchers – or ‘star scientists’ – who make exceptional contributions to scientific intellectual property production and stimulate the growth of local spin-off firms, or may simply become valued members of a diverse local labour force and community (Zucker and Darby 1996; Stephan and Levin 2001; Gertler and Vinodrai 2005; Saxenian 2006). Yet while considerable policy attention has been given to this issue, the retention rate patterns of international students upon completion of their studies remain poorly understood and largely based on estimates because of the lack of reliable comparable data (e.g. Johnson and Regets 1998; Regets 2001; Baker and Finn 2003; Finn 2005). Moreover,
as discussed in Chapter 2, only a limited number of studies have begun to explore the complex nature of decision-making for international students, with preliminary findings suggesting a mix of multifaceted professional, personal, social, and regulatory issues shaping their migration and career strategies upon the transitional moment of graduation (Alberts and Hazen 2005; Hazen and Alberts 2006; Szelenyi 2006).

Despite this burgeoning interest in the interplay of factors and scales shaping international students’ perceived choices and subsequent actions upon graduation, the ways in which their strategies may differ according to academic discipline has received less attention. This is surprising given the propensity for graduates with different academic training and skills to transition into very different types of career fields where the knowledge requirements, related work organizational norms, and labour market dynamics are likely to vary to a considerable extent. As a first step towards addressing this gap, this chapter seeks to develop our understanding of how the career development strategies and concerns of international students differ according to broad disciplinary divisions. In particular, drawing upon research conducted with international students from art and design as well as science and engineering programs in London, UK, it addresses the following questions: What are international postgraduate students’ career strategies, and do these differ according to their academic fields? What concerns, if any, do students have with regard to the transferability of their training and knowledge into different sectoral and geographic contexts? And, given students’ different academic knowledge bases, what importance do they place on entering specific local labour markets?

This chapter examines these questions by drawing upon the literature on labour market dynamics within science- and design-based industries as well as the differentiated knowledge-bases approach for highlighting how labour market dynamics and production
processes vary both socially and spatially across different sectors of the economy. I then introduce the case study and discuss key methodological considerations. The fourth and fifth sections present the comparative findings from interviews with international postgraduate students completing various programs, suggesting categorical differences in their socio-spatial considerations in line with the existing knowledge-bases framework. My findings reveal that the graduates of art and design programs are much more focused on remaining in certain metropolitan labour markets, and London in particular, because of the importance they place on being within a local cultural industry network in which the know-who of peers is a highly valuable asset when searching for and producing work. They also draw on particular attributes of the city’s social and institutional infrastructure to support their creative endeavours. In contrast, science and engineering graduates are much less concerned about place-specific labour market characteristics and expect their knowledge to be transferred easily into a wide range of sectoral and geographic contexts. Finally, I conclude by considering the implications of these findings in terms of the likelihood that postgraduate international students will remain in a given city after their studies, as well as inferring new insights to extant theories on highly skilled labour mobility.

**Geographies of higher education, labour market entrance, and knowledge bases**

Economic geographers have had a long-standing interest in the ways in which formal research and learning in higher education institutions can shape local economic processes. This research has tended to focus on local labour force training, research spin-off activities, and the general capacity of universities to enhance learning and innovation at the regional scale (Goddard and Chatterton 2003; Harloe and Perry 2004; Benneworth and Charles 2005; Lawton Smith 2006; Lundvall 2006). Only recently has a literature begun to emerge that explores
particular educational institutions and programs and the multiple types of knowledge or ways of knowing that they impart to their students. Here, attention has been paid predominantly to global MBA programs (Olds and Thrift 2005; Thrift 2005; Hall 2008) and regulated professions such as law and investment banking (Faulconbridge and Hall 2009a), suggesting taught curricula have a tangible impact on business practices. However, despite the recognized importance of the ways in which educational institutions and degree programs influence worlds of work, precious little research has explored the transitional period of entering highly skilled labour markets on the completion of one’s studies. Exceptions include McDowell’s (1997) illustration of the importance employers place on elite educational backgrounds as recent graduates seek to gain access to consulting and finance work in the City of London, or Waters’ (2007) suggestion that a North American overseas education contributes to the constructed worldview, or ‘habitus,’ required to join the ranks of Hong Kong’s network of transnational finance professionals. However, aside from these studies that document how select credentials and educational experiences can provide or limit access to finance and consulting careers, geographers have given surprisingly little attention to the process by which graduates enter into particular occupational and geographical labour markets. Moreover, little is known about how this process may differ for graduates of diverse disciplinary fields armed with different types of knowledge and skills, and the related geographies that this process may entail.

**Highly skilled labour market dynamics and career development**

In comparison, local labour market dynamics, changing modes of work organization, and the impact of production changes on employment structures in advanced economies have been central topics of research within economic geography over the past few decades (Storper
and Walker 1989; Storper and Scott 1990; Peck 1996; Herod 2001; Peck 2003b). Much of this work has tended to explore select sectoral or occupational groupings. For example, early work focused on flexible forms of production within high-technology agglomerations and the associated inter-firm mobility of science and engineering workers (Angel 1989; Storper and Scott 1990). Within these industrial clusters, workers’ tenure with any one employer was often relatively short in duration, a situation that was identified as an effective means of circulating knowledge across firms and of enabling efficient and collective social learning within clusters (Angel 1991; Saxenian 1994; Henry and Pinch 2000), but also was recognized as introducing tenuous employment relations and potential vulnerability among workers to labour market shocks (Benner 2002). Research illustrated that scientists and engineers were mobile throughout their careers, transferring between firms within a particular production complex or cluster (Angel 1989; Benner 2002) or occasionally internationally between key industry epicenters, such as the ‘Motorsport Valley’ (Henry and Pinch 2000) or Cambridge in the UK (Keeble et al. 1998; Lawton Smith and Waters 2005). However, despite the attention to workers as mobile agents, little research has explicitly considered the beginning of careers in science and engineering or the transition from university into particular labour markets, although several studies suggest that it is often the domestic and foreign graduate students who provide valued labour as they enter local industry clusters upon their graduation, as in cases such as Stanford’s graduates in Silicon Valley or MIT graduates in Boston’s biotechnology cluster (Saxenian 1994; Best 2001; Huffman and Quigley 2002; Saxenian 2006).

More recently, geographers’ interest in labour market dynamics has shifted to a considerable extent to work within cultural industries, such as advertising, architecture, fashion, film, music, and design, partly because of their dramatic growth in many urban economies (Scott 2001). A central strand of inquiry here has been on the project nature of work and on the implications of these organizational practices and production forms for the
nature of learning and knowledge flows within and across creative sectors and the resultant implications of the labour practices of cultural industry workers (Grabher 2002a, 2002b, 2004). It is widely established that workers with diverse and complementary professional profiles frequently collaborate on a temporary basis, crossing over firm and industry boundaries in ephemeral work relations and a series of short-term contracts (Christopherson 2002; Perrons 2004). Despite the attention to labour practices and the increasingly recurrent mobility of workers between firms, several scholars have recently called for more work that explores in greater detail the experiences and conditions within careers, seeking to understand how creative workers cobble together a series of self-employment and non-traditional work arrangements in establishing a career over time (Rantisi, Leslie, and Christopherson 2006; Vinodrai 2006; Scott 2007; Reimer 2008). For many cultural industry workers, the geographic context has heightened importance, as it is through face-to-face interactions arising from strong social networks and spatial proximity that workers are able to learn about the reputation and skills of their peers, to keep abreast of which firms or potential clients are hiring, as well as to remain tapped into the continuous circulation of new information about trends, techniques, and innovations (Ekinsmyth 2002; Grabher 2004). Moreover, the geographic context or the characteristics of certain urban environments provide some workers with an important stimulus for creative work, informal sites of production and collaboration, and social and institutional support structures, elements Scott (2001) calls the “creative milieu” (see also Vinodrai 2006; Edensor et al. 2010). Implied in this research is the importance of educational institutions in contributing to the construction and functioning of local creative industry labour markets. However, the relationship between formal education and labour market entrance remains largely under-examined.
The knowledge-base conceptual framework

The previous section indicated that we have a growing understanding of the changing socio-spatial production patterns and labour dynamics in select industries, but we know little about how individuals transition from full-time studies into these highly skilled employment fields. To begin addressing this gap, I propose that a framework that conceptualizes core differences in the nature of work organization, production, and labour processes across the economy is a useful place to begin considering broad variations in individual career development upon graduation. The emerging "knowledge bases" literature provides such a framework. This approach seeks to bring together an understanding of key differences in the innovation process for firms and industries by identifying the different "knowledge bases" that underpin the activities most central each sector’s competitiveness (e.g. Asheim and Gertler 2005; Asheim, Coenen, and Vang 2007; Gertler 2008; Moodysson, Coenen, and Asheim 2008). While the lead proponents acknowledge that knowledge involved in innovation is increasingly complex and multidimensional, they nonetheless suggest there are three types or categories of knowledge bases – analytical, synthetic, and symbolic – that predominate in most industrial innovation processes (Asheim, Coenen, and Vang 2007; Gertler 2008). Upon these knowledge bases, they develop a comparative conceptual framework to elucidate differences in the logics of innovation across sectors, including the socio-spatial learning process within firms and industries (referring to the mix of tacit and codified knowledge, and the limits or possibilities of distanced learning), the diversity of skills and competences required of workers, as well as the different modes of work organization for the development of new products and processes. Table 3.1 summarizes several of the taxonomy’s distinctive characteristics.

56 A "knowledge base" refers to “the area of knowledge itself as well as its embodiment in techniques and organizations” (Brink, McKelvey, and Smith 2004; as quoted in Asheim, Coenen, and Vang 2007, 660).
Table 3.1: Knowledge bases: a typology

<table>
<thead>
<tr>
<th>Core question for innovation and type of knowledge created</th>
<th>Analytical (science based)</th>
<th>Synthetic (engineering based)</th>
<th>Symbolic (arts based)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know why: developing new knowledge about natural systems by applying scientific laws</td>
<td>Problem-solving, custom production, inductive</td>
<td>Know who: creating meaning, aesthetic qualities, affect, symbols, images</td>
<td></td>
</tr>
<tr>
<td>Innovation process</td>
<td>Scientific knowledge, models, deductive</td>
<td>Interactive learning with customers, suppliers</td>
<td>Learning process</td>
</tr>
<tr>
<td>Work organization forms and firm learning modes</td>
<td>Collaboration within and between formal research units</td>
<td></td>
<td>Learning-by-doing, in studio, project teams</td>
</tr>
<tr>
<td>Ability to codify knowledge</td>
<td>Strong codified knowledge content; highly abstract, universal</td>
<td>Partially codified knowledge; strong tacit component; more context specific</td>
<td>Strong semiotic content; importance of interpretation and cultural knowledge implies strong context specificity</td>
</tr>
<tr>
<td>Context-dependency of knowledge</td>
<td>Meaning relatively constant between places</td>
<td>Meaning varies substantially between places</td>
<td>Meaning highly variable between places</td>
</tr>
<tr>
<td>Example industries</td>
<td>Drug development</td>
<td>Advanced machinery, mechanical engineering</td>
<td>Advertising, fashion</td>
</tr>
</tbody>
</table>

Sources: Asheim and Gertler 2005; Asheim et al 2007; Gertler 2008

The analytical knowledge base consists of predominantly scientific knowledge with industrial innovation built upon the development of new knowledge about natural systems. It forms the dominant knowledge basis in industries such as pharmaceutical, biotechnology, and information technologies. In these industries, innovation is often based on “the application of widely shared and understood scientific principles and methods” (Asheim and Gertler 2005, 296). Industrial innovation tends to occur through radical breakthroughs, which depend on developing an understanding of the causal mechanisms of natural phenomena; in other words, “know-why” is crucial (Lundvall 1998). For example, in the case of drug development research in Swedish biotechnology companies, Moodysson et al (2008) find that breakthroughs are only identified as valuable if the R&D team is first able to explain their findings through rational scientific models. Therefore, the valuable product in industries based primarily on analytical knowledge is new knowledge. Given the prioritization of scientific research and the importance of replicability of findings, the core mode of work organization is formal, often based in laboratories, both inside individual firms and through collaboration with universities and
research organizations (Asheim and Coenen 2005). Knowledge inputs and outputs tend to be highly codified, described using scientific theories and abstract laws that are accepted by peers in the form of scientific papers or patent descriptions (Gertler 2008). Given this tendency for formal codification and the predominance of natural science, analytical knowledge is suggested to be universal with its meaning varying little by geographic context, as long as all workers involved have comparable scientific training or understand a similar scientific discourse (Kuhn 1970). The understood spatial implications for innovation in such industries, then, tend to be mixed. While this form of highly codified knowledge is easily transferred over space, the capacity to develop new knowledge is not ubiquitous, for competitive advantage comes from being able to develop ideas more quickly than competitor firms (Maskell and Malmberg 1999). The speed of new discoveries by firms can therefore be enhanced by being within clusters where information is transferred first and fastest through social networks (Asheim and Gertler 2005), but knowledge can also be quickly brought in through global knowledge networks and is less sensitive to distance decay or being misinterpreted in different cultural settings than other types of knowledge (Gertler and Levitte 2005).

In contrast, the synthetic knowledge base largely involves the novel application or combination of existing knowledge in context-dependent scenarios or engineering-related problem solving. Example industry cases include advanced industrial machinery and plant engineering. Innovation in synthetic knowledge base industries tends to involve incremental developments, through client and producer interactive learning and applied research to solve specific challenges or improve products or processes with more efficient or user-friendly goods (Asheim and Coenen 2005). While some of the knowledge involved is based on partially codified knowledge, synthetic knowledge tends have a larger tacit component by nature and depends on “know-how,” which draws on experience gained at work through applied testing and on-the-job learning in the creation and diffusion of knowledge (Gertler 2008). As well,
given the importance of frequent producer-user interaction and face-to-face communication, synthetic knowledge tends to be more sensitive to distance and is often created within firm boundaries. Particular engineered solutions that develop may also be limited to local circumstances.

Lastly, the *symbolic* knowledge base underlines those sectors and products focused on creating aesthetic meaning and symbolic value, and it principally involves creative processes within industries for the development of new designs, images, and experiences (Asheim, Coenen, and Vang 2007; Gertler 2008). The cultural industries that draw primarily on symbolic knowledge include film, publishing, music, advertising, design, and fashion (Asheim, Coenen, and Vang 2007). Unlike analytical- and symbolic-based industries that compete primarily on the “use-value” of their products, the economic value of symbolic based industries tends to arise through its “intangible (aesthetic, ‘sign-value’) character” (Lash and Urry 1994; Gertler 2008, 215). Design knowledge tends to be tacit and continually acquired through learning-by-doing and on-the-job training (Wong and Radcliffe 2000), although there has been growth in the provision of formal design education (Design Council 2005). Moreover, as the previous section discussed, production is increasingly realized through short-term projects (Grabher 2002b), and the process of industry-based learning and production has a strong *social* element to it. This process requires workers to be constantly networked with peers or potential team partners who have complementary specializations to achieve results within continually fluid project work conditions (Christopherson 2002), as well as to have access to future clients. In other words, *know-who* is a key component of success in the industry-driven creative process (Gertler 2008). The spatial implication of the professional work organization and learning tendencies within many symbolic knowledge-based industries is that *being in* particular environments is of considerable importance for individual career development and overall industrial success (Vinodrai 2006; Sunley et al. 2008).
In summary, this review points to the growing recognition that formal education plays a considerable role in shaping the employment expectations and practices of graduates and that social and spatial dynamics of labour vary within different sectors of the economy. The knowledge-base literature, while originally developed to understand innovation processes from an industrial development perspective, provides a framework to comparatively understand key differences in the knowledge creation and social-spatial production dynamics by sector. However, missing from this analysis so far is any consideration of the relationship between knowledge that is held and developed in academic versus industrial environments. I suggest that the variance in knowledge creation processes by industry knowledge base (analytical, synthetic, symbolic) corresponds with tendencies of knowledge production within academic disciplines (e.g. science, engineering, arts). My point is not to suggest that all academic research projects should feed into industry innovation processes, but that there are parallels between the different types of knowledge creation processes within academia and with those in industry. Working from this assumption, this chapter explores whether international graduates of different disciplines adopt post-graduation career expectations and behaviours that correspond with the knowledge base framework. Specifically, I ask: Given the different academic knowledge bases of students in art and design as well as science and engineering programs, what expectations and concerns do graduates hold with respect to their career development and the importance of entering specific labour markets? How do students

57 Gibbons et al (1994) argued that academic knowledge tends to be organized and produced in specialized disciplinary networks, while knowledge production in business environments and through industrial R&D tends to be more interdisciplinary and boundary crossing in nature. The differentiated knowledge bases authors account for this distinction by acknowledging that knowledge bases are conceptual typological abstractions and most industrial activities draw from multiple knowledge bases, although one knowledge base usually dominates the core innovative activities of a given industry. Nonetheless, a weakness of the framework may be that it emphasizes a common type of knowledge at the expense of exploring the extent and importance of different knowledge requirements within a given sector or occupation, as well as how these practices may vary geographically.

58 I recognize that this approach does not engage with the performative and socially constructed nature knowledge production (e.g. Callon 1998), nor the extent to which the knowledge produced in departments and schools has varied across time and space.
perceive the transferability of their knowledge to different sectoral and geographic contexts? And do these strategies correspond with sectoral norms according to the knowledge-bases literature?

Case study and methodology: international postgraduate students in London, UK

London provides a valuable site to examine the graduation plans of elite, mobile students from around the world as it currently receives the largest number of international students (i.e. non-UK students) among all English-speaking cities – 97,000 students each year, accounting for nearly one-quarter of all students attending London’s HEIs (London Higher 2010). London is home to 25 per cent of all international students in the UK, and has experienced an average growth rate of 6.9 per cent over the past nine years, compared to an 1.5 per cent growth of domestic students over the same period (see Table 3.2). While much of the attention on international students in the UK has long centred on high fee-paying undergraduate degrees and one-year taught-Masters programs as a source of income to institutional budgets, a recent policy shift towards reasserting the UK’s dominance in the foreign postgraduate student market as a component of national research and innovation competitiveness has been evident in several policy discussions and initiatives (e.g. Universities UK 2007; Kemp et al. 2008), as discussed in Chapter One. Parallel to this interest has been a broad UK government interest to provide funding to encourage and assist greater numbers of PhD graduates transfer their skills to industry settings, initiated with the Sir Gareth Roberts’ Review in 2002 (HM Treasury 2002).

59 New York (state) and Sydney follow London in terms of largest recipients of international students, receiving 74,935 and 49,595 respectively (London Higher 2010).
Table 3.2: Student numbers in London HEIs, by student domicile (2000-2009)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>268,685</td>
<td>274,975</td>
<td>287,830</td>
<td>285,450</td>
<td>295,165</td>
<td>306,085</td>
<td>303,610</td>
<td>304,355</td>
<td>315,135</td>
</tr>
<tr>
<td>Non-UK</td>
<td>56,935</td>
<td>59,700</td>
<td>65,525</td>
<td>73,405</td>
<td>82,660</td>
<td>85,720</td>
<td>89,955</td>
<td>92,670</td>
<td>97,150</td>
</tr>
<tr>
<td>Total</td>
<td>325,620</td>
<td>334,675</td>
<td>353,355</td>
<td>358,860</td>
<td>377,825</td>
<td>391,800</td>
<td>393,565</td>
<td>397,025</td>
<td>412,285</td>
</tr>
</tbody>
</table>


As a receptive local economy for international students, London has a diverse service industries base, with the business services sector representing the largest component; however, the city’s current economic development strategy currently targets the creative industries and the science and technology-driven sectors for economic growth (LDA 2005). Large numbers of international students attend London’s HEIs in academic programs that correspond with these target sectors (London Higher 2007), but initiatives to capitalize on this relationship at the urban scale do not exist. Several recent programs and sources of funding seek to encourage interaction between London’s HEIs and the life sciences and creative industries sectors (e.g. Catalyst), but such initiatives with universities in London have been characterized in the past as “bottom-up and at times uncoordinated” and they do not relate specifically to international postgraduate students (Universities UK 2001, 8).

The research reported here was carried out between October 2007 and July 2008 in London, UK, and comprised two methods. First, 47 interviews were conducted with international graduate students in the final year of their studies at two institutions: the Royal College of Art (RCA) and Imperial College London (ICL). Because this project focuses on the relationship between international postgraduate education and careers, these universities were chosen for sharing institutional missions. Historically, these institutions have emphasized providing an education to students and conducting research to meet industry needs, as they
both have origins in the mid-Victorian era and were established to advance scientific, technical, and design expertise as the foundation for Britain’s industrial and economic development (Argles 1964; Frayling 1987, 1999; Gay 2007). While both institutions have since developed and redefined their missions and orientation since their original inception, both continue to be recognized not only for maintaining strong ties with industry, but also for being internationally renowned and oriented, while also being important contributors to national research agendas in science and technology and in art and design, particularly at the postgraduate level. They have also both long attracted a large international student body that seeks to benefit from the specialized research and applied training that they offer. In 2007-08, over 54 per cent of the RCA student body (all postgraduate) were students coming from outside the UK.\textsuperscript{60} At ICL, 33 per cent of the full-time postgraduate students (taught and research) at ICL were from non-EU countries (1605/3834), representing a growing proportion; it can be assumed that including the number of EU students would substantially heighten the proportion of non-UK students (see Tables 3.3 and 3.4) (ICL 2005, 2009).\textsuperscript{61} Both universities are also located within the same South Kensington neighbourhood in London.

\textit{Table 3.3: Full-time students at Imperial College London (2008-09)}

<table>
<thead>
<tr>
<th></th>
<th>Home/EU</th>
<th>Overseas</th>
<th>Total</th>
<th>New entrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>6,325</td>
<td>2,229</td>
<td>8,554</td>
<td>2,515</td>
</tr>
<tr>
<td>Taught postgraduate</td>
<td>1,282</td>
<td>916</td>
<td>2,198</td>
<td>2,112</td>
</tr>
<tr>
<td>Research postgraduate</td>
<td>1,578</td>
<td>689</td>
<td>2,267</td>
<td>441</td>
</tr>
<tr>
<td>Total full-time students</td>
<td>9,185</td>
<td>3,834</td>
<td>13,019</td>
<td>5,068</td>
</tr>
</tbody>
</table>

Source: ICL 2009

\textsuperscript{60} Unpublished data from the RCA Registrar’s Office. Time series data was not available.

\textsuperscript{61} A distinction is made between EU and non-EU (i.e. overseas) students by ICL because EU laws require that EU students be charged domestic student-level fees.
Table 3.4: Percent change of full-time students at Imperial College over five years (2004-2009)

<table>
<thead>
<tr>
<th></th>
<th>Home/EU</th>
<th>Overseas</th>
<th>Total</th>
<th>New entrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>7.6%</td>
<td>39.0%</td>
<td>14.3%</td>
<td>14.1%</td>
</tr>
<tr>
<td>Taught postgraduate</td>
<td>30.0%</td>
<td>59.9%</td>
<td>41.0%</td>
<td>35.9%</td>
</tr>
<tr>
<td>Research postgraduate</td>
<td>33.5%</td>
<td>38.6%</td>
<td>35.0%</td>
<td>-13.5%</td>
</tr>
<tr>
<td>Total full-time students</td>
<td>14.1%</td>
<td>43.4%</td>
<td>21.4%</td>
<td>18.7%</td>
</tr>
</tbody>
</table>

Source: ICL 2005, 2009

Of the 47 interviews, 19 were conducted with students completing two-year design-related Masters programs at RCA, and 27 were conducted with students finishing Master or PhD level degrees at ICL from a diverse range of disciplines in science and engineering. The nationalities and programs of students involved are shown in Table 3.5. Students were sampled to draw from the breadth of academic fields within the schools, as well as the heterogeneity of incoming students’ national backgrounds coming to London for their graduate studies.

Students also varied by gender and in terms of their legal status and financial situation while in the UK (i.e. EU students paying domestic tuition fee payments, international students paying foreign student fees, or students working part-time at the university as a strategy to be eligible for lower domestic student fees). All students interviewed were in the final year of their programs. The interviews were semi-structured in nature and lasted between 45 minutes and two hours. While the interviews asked students to reflect on the range of factors shaping their post-graduation plans and strategies (including personal, social and regulatory concerns), the discussion presented here is limited to students’ career plans and aspirations as well as their current job search activities.

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62 New entrants include ICL graduates beginning new degree programs.
Second, 20 additional interviews were conducted with institutional representatives from ICL and RCA, as well as from various organizations involved in higher education, economic development policy, and international students support services in London and at the UK level. (See Table 3.6.) These meetings enabled me to supplement information from the

<table>
<thead>
<tr>
<th>Imperial College London</th>
<th>Discipline</th>
<th>Citizenship</th>
<th>Status in the UK</th>
<th>Gender</th>
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<tbody>
<tr>
<td>(n=27) 22 PhD; 5 MSc</td>
<td>advanced computing</td>
<td>Canada/Taiwan</td>
<td>EU student (5)</td>
<td>13 women; 14 men</td>
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<td></td>
<td>aeronautics, composites (2)</td>
<td>China (5)</td>
<td>student visa (19)</td>
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<td></td>
<td>applied math</td>
<td>France</td>
<td>work permit (3)</td>
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<td></td>
<td>biochemistry (2)</td>
<td>France/Peru</td>
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<td></td>
<td>cell biology, medicine</td>
<td>Germany</td>
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<td></td>
<td>chemical biology</td>
<td>Germany/PR in New Zealand</td>
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<td>chemical engineering</td>
<td>India (2)</td>
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<td></td>
<td>chemistry (4)</td>
<td>Israel</td>
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<td></td>
<td>chemistry/chemical engineering (2)</td>
<td>Japan</td>
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<td></td>
<td>genetics and development</td>
<td>Malaysia (2)</td>
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<td></td>
<td>haematology</td>
<td>Nigeria</td>
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<td></td>
<td>material engineering</td>
<td>Serbia</td>
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<td></td>
<td>material engineering/biomedical</td>
<td>South</td>
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<td></td>
<td>mechanical engineering (2)</td>
<td>Africa/China</td>
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<td></td>
<td>molecular cardiology</td>
<td>Spain</td>
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<td>molecular genetics</td>
<td>Taiwan</td>
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<td></td>
<td>optics and photonics</td>
<td>Thailand (2)</td>
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<td></td>
<td>physiological genomics and medicine</td>
<td>USA (2)</td>
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<td></td>
<td>skin sciences</td>
<td>USA/China</td>
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<td></td>
<td>statistics</td>
<td>USA/China/UK</td>
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<tr>
<th>Royal College of Art</th>
<th>Discipline</th>
<th>Citizenship</th>
<th>Status in the UK</th>
<th>Gender</th>
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</thead>
<tbody>
<tr>
<td>(n=19) 1 PhD; 18 MA</td>
<td>communication art &amp; design (8)</td>
<td>Belgium</td>
<td>EU student (12)</td>
<td>12 women; 7 men</td>
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<td></td>
<td>design interactions (3)</td>
<td>Brazil (2)</td>
<td>student visa (6)</td>
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<td></td>
<td>fashion menswear (2)</td>
<td>Canada</td>
<td>work permit (1)</td>
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<td></td>
<td>industrial design engineering (3)</td>
<td>Finland</td>
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<td></td>
<td>vehicle design (3)</td>
<td>France</td>
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<td>Ghana</td>
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<td>Italy (3)</td>
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<td>Lebanon</td>
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<td>Netherlands/PR</td>
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<td>in New Zealand</td>
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<td>Slovenia</td>
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<td>Spain (3)</td>
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<td>Taiwan</td>
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students with knowledge of the evolving institutional framework regarding international students and employment, as well as with institutional programs designed to assist students through the transition from university to the labour force. In what follows, quotes draw exclusively from interviews with students, all of whom have being given pseudonyms. I also alternate between identifying students’ nationality and their program of study to protect their anonymity.

**Table 3.6: UK institutional interviews**

Interviews were conducted with senior representatives from the following organizations. In some instances, interviews with multiple people took place within the same department.

- Association of Graduate Careers Advisory Services (UK)
- British Council, Education UK Marketing
- European Research Council
- European University Association
- Greater London Authority, Mayor of London’s Office
- Imperial College London, Career Services
- Imperial College London, Graduate School of Engineering and Physical Sciences
- Imperial College London, Research and International and European Affairs
- InnovationRCA
- London Development Agency
- London Higher/ Study London
- Royal College of Art, Alumni Relations
- Royal College of Art, Fuel RCA
- Royal College of Art, International Strategy Office
- UK Department of Universities, Innovation and Skills
- UKCISA
- Universities UK
- University of London, School of Advanced Studies

**Art and design graduates: symbolic and synthetic knowledge bases**

The RCA, a well-known and highly regarded college for art and design education, is the only institution in the world to offer solely postgraduate degrees in art and design. It provides two-year Masters courses and PhD programs in departments such as Architecture & Design
(with degree programs in Architecture, Design Interactions, Design Products, Industrial Design Engineering, Vehicle Design), Applied Art (Ceramics & Glass, Goldsmithing, Silversmithing, Metalwork & Jewellery), Communications (Animation, Communication Art & Design), Fashion and Textiles, and Fine Art (Painting, Photography, Sculpture). Its teaching mission is this:

to encourage each of our students to develop their personal brand of imagination and creativity, to help them acquire the knowledge, skills and experience needed to realize personal ambitions and to find their unique voice as an artist or designer... we encourage them to explore contemporary themes that connect all the visual arts and enable them to acquire the basic business skills that success in any career demands (RCA 2008, 20).

This emphasis on applied and theoretical training oriented towards professional development and the strong ties the College maintains with business, industries, and professions is an important element of RCA’s heritage. Since its inception, originally as the Government School of Design in 1837, the College sought to fulfill this goal:

advance learning, knowledge and professional competence particularly in the field of fine arts, in the principles and practices of art and design in their relations to industrial and commercial processes (Frayling 1987, 208).

I suggest that the knowledge and skills that the RCA seeks to impart to all of its graduates corresponds, to a large extent, with the description by Asheim et al (2007, 664) of *symbolic* knowledge as “related to the aesthetic attributes of products, to the creation of designs and images, and to the economic use of various cultural artefacts.” Given the engineering emphasis of some programs (e.g. Industrial Design Engineering, Vehicle Design), I propose that *synthetic* knowledge, as “the application of existing knowledge or through new combinations of knowledge” (Asheim, Coenen, and Vang 2007, 663) may also be relevant in some instances.

In what follows, I highlight the main themes that emerged as students reflected on their career expectations and strategies that build on the experiences and the education they gained...
at the RCA. I begin with an exploration of the strong emphasis that students place on staying in London, and then consider students who are opting instead to target particular design houses or firms irrespective of location. Lastly, I discuss students’ attitudes regarding mobility and the transferability of their design-related knowledge and skills into different geographic contexts.

**London: becoming professionally established in a global design centre**

The RCA students interviewed were finishing a range of programs and tended to have specific artistic skills and targeted interests that they hoped to apply in their work after graduation. However, most were open about the occupation or industrial field into which they would enter. Interviewees mentioned fields ranging from general art direction, web design, illustration, film, product design, fashion design, interior design, furniture design, costume design, vehicle design, advertising, artistic event organization or teaching. Despite this breadth of professional aspirations, the vast majority of students (18/19) that I interviewed intended to stay in London after graduation to benefit from the network that they had established during their studies at RCA and to expand this network more widely within the city. For example, one student simply summarized her priority accordingly: “What I need to do now is get to know more people and start building a network before I graduate.” I begin by discussing why students prioritized establishing their network for career development before I consider how remaining in London was viewed as crucial to this process.

As the literature on production in creative/symbolic knowledge-based industries suggests (Christopherson 2002; Ekinsmyth 2002; Grabher 2002a; Gertler 2008), all students expected project work to be the norm, and many anticipated to be hired by firms that worked on this basis, to offer their independent services as a freelancer, or to establish their own studio within a few years, often in collaboration with other RCA graduates. However, students were
tremendously sensitive to the need for a strong network of collaborators and clients to make any of these scenarios possible as a result of four inter-related career-driven dimensions. First, students frequently described needing contacts to get in the door of different agencies or design houses or to begin developing their own set of clients. As Isabella, a graduate of Vehicle Design, explains, “The idea is you need to know someone because at least you have a person to contact in case you want to try to enter a place.” Second, beyond simply accessing work, those anticipating the freelance or small studio route expected that a strong local network would be essential to generate a sufficiently steady stream of project work and to establish a self-reinforcing cycle of referrals. Eric, a student in Communication Art & Design, explains the importance of having friends and clients who would refer him on to new clients:

So you make friends from school, you make contacts with other studios, other professionals, or your tutors, which then can ask you to do something for them. I've just finished a catalogue for some of my tutors from last year who at some point were just too busy and so asked me if I wanted to do some freelance for them. And this is good because then they introduce you to some other people as well.

Third, a diverse network of contacts with complementary skills was recognized as crucial to know whom to collaborate with to be able to bring projects through to fruition, a finding that supports Christopherson (2002). Several students expected, especially when starting up their own studios or companies, that there would be distinct advantages to being in a city like London where they could establish the necessary network of professional supports. For example, with respect to starting a fashion studio, Siv explains, “I don’t think it’s a good idea to start [outside London] because it doesn’t have the network or trust and PR and people to kind of make it work. That kind of has to happen in this city.” The importance of collaborating with peers seems to have been emphasized in several courses at RCA, where classmates from diverse backgrounds were required to work together on projects under tight timelines using one another's strengths. Some students also described acknowledging that they will never be
able to “master all the technical parts,” so they expected that collaborating with or commissioning the work of others would be a common occurrence in their working lives. This strongly echoes Asheim et al’s (2007, 665) claim regarding symbolic knowledge based industries:

the one-off project-based character of most collaborations and the heavy reliance on the talent, skills, and creativity of the individual people involved (…) makes knowledge about ‘the right people to do the job’ extremely important.

Lastly, many RCA students described being an active member of a local network as an important aspect of developing trust and having a reliable reputation in successful work relationships. Because design projects are intended to develop meaning or aesthetic qualities in a product or its representation, seven students specified the particular importance of meeting face-to-face and communicating with others involved in a project to establish shared understandings, especially with the client. For example, Federico explains,

...if you’re looking for a job and you go to some studio and they’ve already heard about you from people or they’ve already seen you in a place or have been presented, it’s kind of important. And also because we’re having pleasure in that. It’s better to work with someone you already know, [rather] than just showing up [at a client’s studio] and showing your work. Then you have to... not be friends... but you might have to spend the day together and you have to communicate or whatever to learn about the person and work...

As this quote indicates, familiarity and enjoyment of working with others is considered a valuable component of the professional creative process. Knowing the right person means having a long-standing trust in their style of work and their ability to produce work of a certain quality.

The indispensable importance of having a diverse network of trusted contacts to successfully conceive of and complete projects was, for these students, closely associated with staying in London after graduation. This motivation stemmed from many correlated factors. To
begin, students counted heavily on each other, or their tutors, to help develop their network. As well, the major two-week end-of-year exhibition, “Show RCA,” that displayed students’ final projects on an invitation-only basis to select creative professionals and related industry representatives, and later to the public, was often described by students as the crucial moment in making an impression and gaining contacts before leaving RCA. Moreover, given the competitive nature of their fields and the oversupply of available workers, students stressed the importance of being in London to fully capitalize on their contacts originating through RCA. Many believed it was important to be at the “right place and at the right time” and to benefit from the general local “buzz” or circulation of information about where potential jobs were available and which employers best matched their individual interests. Some students expressed that it would be difficult to stay in London while looking for work after graduation because of the expense, but decided that not staying would dangerously impede their access to critically important knowledge about who might be hiring. In the words of Carlotta, a Spanish student, “[if you leave] then I don’t think you can go for interviews as often, you know? And you are not in the thing. I mean you can send emails around but it is not the same as being here” (emphasis added). Furthermore, over half of the students interviewed expressed being cognizant that the period immediately after graduation was critical for capitalizing on the place-specific network of contacts that they had built up during school and at the year-end RCA Show to get their foot in the door at certain companies. As Raita explains,

... it’s not like I want to stay in London only because it offers me things that other places can’t, but for now, at this point of time in my life when I’m graduating from this school in London with all these people that I know in London, [the motivation to stay] is very high.

Lastly, students were aware of the exclusionary nature of social networks, and that not all networks, or positions within networks, are equal, so while the RCA would be recognized
internationally, many students believed that their likelihood of entering esteemed social
circles, or developing what many called “good contacts,” was greatest in London, where
positive RCA association was strongest. As Pavla colourfully, and with some embarrassment,
explains:

This course has such a good reputation so if you apply for anything in London or
England and if you can say you’re from RCA, very sadly you already get ‘Ah! She must
not be totally shit.’ So then you’re kind of already in a privileged position from that.

In addition to providing a crucial opportunity to access key individuals and capitalize
on contacts from RCA, students discussed wishing to stay in London for more general
attributes related to the breadth and calibre of cultural activities occurring there. For example,
despite having confidence in their practical and theoretical training, several students (8/19)
also spoke about recognizing that the nature of work in their creative fields would require
continual skill upgrading and on-the-job learning for their own career development, which
could be best achieved by staying in London. Many considered London as one of the world’s
design epicenters, where the greatest cutting-edge or innovative projects were taking place, or,
as several graduates stated, a place where “everything was happening.” Therefore, part of the
motivation to stay in London upon graduation for these young professionals was to continue to
develop their own abilities and be involved in challenging and ultimately rewarding work. As
Stefanie, a graduate of Design Interactions said,

If I stayed here... I’d get more opportunities to work with bigger companies, not only in
name but... not only size, but also reputation, bigger clients... which is something I think
in [European home country] would be quite hard if you just graduated to be able to
work on accounts like that ... just kind of getting ahead and taking advantage of the fact
that London is kind of in front of other cities.

Being in a city with such depth of relevant employment possibilities and a range of demanding
clients also meant for many students that there would be the space for them to pursue desired
specializations. For example, Carmella, a graduate of the Industrial Design Engineering program whose final project related to the production of “space food,” explained that she wanted to stay in London because she realized that there was room in the labour market for more specialized work and that in the city she had access to a wide range of facilities to make particular projects possible, access to which may not be the case elsewhere. In this students’ words:

Like I have been dealing with – for my project about space – I know that if I wasn’t in London and at RCA, I wouldn't have been able to have access to Virgin Galactic or the Space Technology Council. Because if you say you are from RCA, all the doors open. But also being in London, you have access to everything. Everything is happening here… even one of the biggest companies and food supplies for airlines is here.

In another example, a student in fashion menswear commented that she wanted to stay in London because a colleague of hers who recently moved to New York was finding it difficult to find people with the traditional skills for special treatments of fabric or knitting. In her mind, only a few remaining cities, like London, had the necessary support infrastructure to enable her to produce the detailed designs that she wanted to do.

More generally, over three-quarters of students made reference to wanting to stay in London because of the appreciation for design among city residents and the business community. According to Henry, a student in Communication, Art & Design,

Design is really in the culture here. You can see people are used to design and they know that the design is a practice, you have to pay a designer, you have to call a designer when you open a shop, open a company.

Another student described this as “a higher level of respect for the creative economy here… and that understanding that creators have a high impact on society and the economy, so appreciation for design is higher.” Other students valued what they perceived to be a general interest in innovative contemporary art. One student explained, “There’s a lot more
opportunities and much more market for me, and it's much more accommodating maybe for the kind of stuff that I do.” Generally, students made references to appreciating the openness of the local art community and the number of major cultural institutions, including small and independent galleries or large and established museums (free to public), as well as the variety of design styles that one could find simply on the street with the city's large multicultural population. For several students, this diverse cultural scene was a source of valued stimuli that inspired new ideas and pushed their designs in new directions. As Janna, a Fashion Menswear student, said,

"London is really open. It's really international. So in terms of design it makes things really interesting because you got people and thinking from all over the world, so different backgrounds, different ways to consider design."

In other words, many students believed there was a general sense of openness to the arts, as well as institutional support and stimuli that would provide a positive environment for beginning their careers after graduation. These findings indicate that students have a strong awareness that being in a particular environment is important for their individual career development and learning, as well as to the overall dynamism of symbolic knowledge based industries (Gertler 2008; Sunley et al. 2008). For many RCA students, London offered an incomparable context.

However, despite the strong motivation that most students had to remain in London immediately after graduation, it must be noted that most (15/19) also anticipated staying only a few years, just long enough to “get established” professionally. After this period, some hoped to move back home, usually for personal, preferred lifestyle, or cost of living reasons, but to maintain a professional foothold in London. Vincente, for example, described anticipating that in five years he would be able to spend half his time in London and half his time back home in Italy doing communication designs, travelling to London only during crucial moments in
production, while Chan hoped to establish a strong relationships with an illustration agency and then, after a few years, return to Taiwan, where she would prefer to work and live independently, returning to London only occasionally for shows or exhibitions. Whether or not these students can continue to progress successfully through their artistic careers if they are not located in one of the major centres for their craft is an issue that remains unresolved in the knowledge-base literature, as Asheim et al (2007) note and needs further examining through empirical cases.

**Mobility: wider design influences and limits to transferability?**

Despite the predominant sentiment shared by most international art and design students that remaining in London would be essential to their career progression, many students nevertheless also discussed the benefits of either returning home or moving to another country for a short period in the future. However, considerations of immediately returning home were usually discussed in terms of familial ties and responsibilities, the desire to return to familiar environments, or quality of life preferences among students who expected to be able to work independently in the future. As Chapter Two discussed, international students are juggling a variety of issues and ties to different places in their post-graduation decision-making. Regardless of home country, few felt that there would be a sufficient or comparable depth of professional opportunities and a supportive network of peers to justify the return.

Nonetheless, over two-thirds of students discussed being interested in moving to new places at a later date for various career development reasons. One motivation was the need several felt to expose themselves to diverse creative stimuli to advance their designs. For example, Raita describes how she believes different design influences would strengthen her
work: “I think [moving around] would make me... not wiser but richer somehow.” A second reason was that students felt it was important to be internationally active because it would illustrate their design versatility and ability to work in different environments. As Eric explained, “If you come to someone and you present your work and you can say I've been in this country, I've been in that country, it's much better because people think then that you’re flexible.” Others emphasized that being involved in international collaborations or showing their work in multiple countries would provide them with some credibility on the international design scene.

In addition, some students wished to someday work outside London so they could learn to translate their design skills into different professional environments. For example, Siv, a Fashion student, explains:

...fashion is a very international business, so I think definitely if you've been living in more places you have an advantage, just purely because of the different markets and the different styles of clothing in different parts of the world.

Vincente also echoes awareness of the need to gain familiarity with the accepted norms in different places and cultural environments when he commented that some elements of advertisements that he sees in London would be deemed unacceptable in advertising intended for the public in Rome. He concludes,

...in other countries maybe [a] sort of solution couldn't be applied or there's not a sort of mentality to go for certain solutions. ...But I mean, that is just cultural situation...and slightly different values. And that changes a lot.

From these statements we can infer that many students agreed with the suggestion that symbolic knowledge is “highly context specific” (Gertler 2008, 215). These students expressed both a sensitivity to the potential contextual limitations of their current knowledge and designs and an awareness that they must develop an ability to transfer and translate their knowledge
into various environments. This ability to transpose knowledge and skills requires cultural familiarity that is learned over time through a variety of work experiences. This insight may be particular to international students (as opposed to domestic) who have become cognizant of design and creative production differences while studying abroad, but it meant that many students were cautious about the need to allow time for cultural adjustment in terms of the ability to produce successful work in different environments.

To counter this argument, however, students also occasionally challenged perceptions about the contextual limits to their knowledge. They explained how their courses were “process oriented,” so that their work could be versatile and not based on a limited repertoire of techniques or theories, but rather emphasized the entire process of bringing designs from idea through to fruition. Carmela, a graduate of Industrial Design Engineering, says, “Basically what I’ve learned in the course is that you don’t learn how to make chairs, or how to make a beautiful car, but you learn a process that is [applicable] to everything.” Graduates of programs that drew heavily upon synthetic or engineering knowledge bases more often expressed such sentiments that emphasized their general inductive problem-solving abilities that are less context-dependent, and they had fewer concerns about moving to new environments.

**Outside London: targeting design houses**

In contrast to the majority of international students whose principal intention was to remain in London upon graduation, a handful of students from the Fashion and Vehicle Design courses were instead focusing their post-graduation plans on getting jobs with particular companies or design houses that would offer them the most desirable work experience and potential learning environment, regardless of location. For example, one Dutch Fashion student was intent on gaining professional work experience in the accessories department of an international fashion house and was targeting a range of large designer fashion companies in
London, Milan, New York, and Paris. In comparison, two of the Vehicle Design students were preparing their portfolios to send to a targeted list of companies, primarily in England’s Midlands, northern Italy, Germany, and Japan, basing their application decisions largely on how well they felt that their design style matched what they believed to be the current style trends of the company. In these examples, students felt that they were required to find suitable companies within known industry clusters in order to advance their careers in their fields. To put it another way, some students prioritized developing their know-how through targeted firm experience over general know-who, as the literature on synthetic knowledge fields would suggest. Some of these students that I interviewed around the time of the final RCA show had also received offers from non-vehicle or fashion companies hoping to employ them for their general skills and design sensibilities (e.g. in computer gaming, retail interior design), but only those tempted to remain in London for personal reasons were considering these options.

**Science and engineering graduates: analytical and synthetic knowledge bases**

The Imperial College London, similarly to RCA, originally was established to support industry throughout the British Empire by providing advanced university training and research in science and technology (Gay 2007). This outward-looking orientation remains true today and is clearly stated in the College’s mission:

> Imperial College London embodies and delivers world class scholarship, education and research in science, engineering and medicine with particular regard to their application in industry, commerce and healthcare. We foster interdisciplinary working internally and collaborate widely externally.

At present, it offers undergraduate and postgraduate (taught and research) degrees across the faculties of Engineering (e.g. Aeronautics, Chemical Engineering/Technology, Electrical
Engineering, Civil/Environmental Engineering, Materials), Medicine, and the Natural Sciences (e.g. Chemistry, Life Sciences, Physics, Mathematics). The nature of postgraduate studies in science and engineering is to develop knowledge in the theoretical and applied aspects of fields, often employing formal deductive models and scientific laws to develop new knowledge about natural systems, or to test or extend knowledge into existing products or processes, drawing on inductive models to solve particular problems. I contend that the skills and academic knowledge that students acquire through postgraduate studies at ICL correspond with the analytical industrial knowledge base where “new knowledge creation is normally based on formal deductive models, scientific laws and the highly structured knowledge production and verification processes inherent in the scientific method” (Gertler 2008, 213) and synthetic knowledge bases where knowledge tends to be “created inductively rather than deductively, through a process of design, experimentation, trail-and-error, and testing” (Gertler 2008, 215).

In what follows, I discuss the salient breadth of perceived employment options among the international students at ICL as they expect their knowledge to be smoothly transferable sectorally and geographically. Given this abundance of options, I then turn to consider how students weigh their choices and what their job search behaviour entails. I conclude by discussing the importance students place on career mobility as a mark of competence and versatility, and less as a step for deliberate learning.

**Exploring the breadth of perceived employment options with analytical and symbolic knowledge education**

The majority of international students interviewed at ICL perceived a strikingly wide spectrum of employment paths before them upon graduation. Only four (of 27) respondents
were solely committed to pursuing academic careers. The remainder commonly discussed considering an abundance of potential career options that build on their scientific knowledge, such as research careers within universities or companies based on similar or complementary research fields (especially in pharmaceutical or biotechnology companies), management or sales positions in science- or engineering-related companies, or working as a laboratory technician in a hospital. As well, 13 students made reference to wanting to begin a company based on their own research some day, after gaining more R&D or management experience in larger firms, and a small number of students mentioned other science-based jobs such as patent law, science policy or popular science writing. In addition to these possible jobs that build on students’ scientific knowledge, over two-thirds of all students also described considering non-science related careers, such as business consultancy, investment finance, or accounting as employment options. Among interviewees, it was widely understood that although they were not trained in these fields, employers sought their quantitative and analytical abilities. As Darrell, a student in applied math with an engineering background, explains:

[Finance companies] are very interested in people with a very scientific background, like physics or mathematics, because they’ve got enough commerce people that are not too much into figures and statistics and math. So they are really looking for engineering-type people. It’s really [trendy] to be an engineer and work in finance. (...) They’re looking for people that look differently [at a problem].

Roland, a PhD student in Chemistry, similarly describes how his inductive problem-solving skills can be transferred into a business environment:

I mean, even the consultancy thing. It’s research in another way, isn’t it? It’s like you get a project and you have to research something and you have to come up with a solution to something. It’s very similar to what you do in a PhD project.

By and large, students had a sense of their strong academic competences and their ability to conduct research and work with codified scientific literature. Many felt qualified to move into a
wide range of sectors dominated by analytical and synthetic knowledge, whether directly related to their scientific research field or not.\textsuperscript{63}

There are several possible reasons why students at ICL were particularly cognizant of these business-related options. There is a long tradition of employers from banks and consulting firms in the City of London hiring science graduates from London universities, and several students witnessed many of their colleagues accept such jobs upon graduation. Moreover, the career support services provided at Imperial encourages students to be aware that the research and problem-solving skills they had developed in an academic research setting were desired in such professional service industries. Interestingly, several students thought the option of moving into finance might be London-specific. For example, an Indian PhD student in mechanical engineering states that similar opportunities might not be available in his home country:

...if I decided to quit engineering, then I have banking and finance, and London is the centre for it. Particularly as a PhD, I'll get opportunities in quantitative finance here, not anywhere else.

However, despite the implication in this quote that employers outside London might have limited willingness to appreciate their non-scientific career potential, students generally believed that the analytical and synthetic knowledge developed during their studies had wide sectoral transferability.

In addition to the array of possible careers, international students at ICL perceived few geographic boundaries to their future labour market in terms of their knowledge

\textsuperscript{63} While these comments suggest youthful bravado, and may be in part due to students wishing to present themselves in a positive light during the interview, the consistency of these remarks throughout the interview leads me to conclude that many students believed these were their true competences, although it remains unknown whether employers would make similar evaluations. Given the elite nature of students conducting postgraduate studies in London, this confidence is likely partially also borne of their class position in their host societies and previous educational experiences.
transferability. Students described scientific knowledge as “universal,” and so felt that they could contribute intellectually to industrial activities in many different environments. As Frederika, a chemistry student, says, “You really learn so much in those three years [of your PhD], and you can use that anywhere.” Specifically, the natural science and medicine students sensed few geographic limitations to their analytical knowledge or their ability to find industrial R&D work in many countries, expecting communication to occur through standard codified scientific forms and English to be the lingua franca; many said that their current labs have an international composition and that they imagine this will be the case in future settings. From these sentiments we can infer that students working with analytical knowledge expected context to matter little for their ability to interact with colleagues in order to share and produce new knowledge. The engineering students, by contrast, were more mindful that the knowledge they would employ would need to be translated into local settings. For example, Kenneth, a PhD student in aeronautics, said:

...the engineering field, you’re quite mobile with it. The only problem is that if you move to a different country you have to learn different sets of codes, and how, you know, the way things are done in a particular country.

This comment on the geographic specificity of work in engineering is in accord with the claim that the synthetic knowledge base is “strongly shaped by the surrounding cultural, institutional, and regulatory environment” (Gertler 2008, 215). Nevertheless, the ICL students were on the whole much less concerned about the contextual limitations to their knowledge than the RCA students.

In comparison to the perceived universality of their scientific knowledge and research skills, ICL students were highly sensitive to the geography of their degree’s reputational value. Indeed, many explained that the expectation that their UK degree would be recognized as high quality among employers globally was one of the motivators to study in the UK; exceptions
were French and American students who thought employers back home might view their foreign credentials with scepticism when compared to graduates of known top universities or grandes écoles in their countries (although the French students felt a UK degree would be better recognized than a degree from a French grande école outside France). Despite feeling that UK postgraduate studies have a strong reputation, a few students also believed the institutional recognition for ICL was somewhat more limited. Several students also believed that ICL was better known within professional research circles and may have less symbolic value among the general population than, say, a degree from an American university or Cambridge or Oxford. Others expressed concern that it was better known in Europe but less known in South and East Asia. These perceived geographies of their degree’s reputational value may explain why some students felt their options to transfer into non-science careers were limited to London. Nonetheless, there was a general sense that that their UK/ICL degree would illustrate advanced universal scientific abilities and an aptitude in English that would hold them in good stead with potential employers in a variety of synthetic and analytical based industries in most geographic contexts.

**Strategies upon graduation: weighing options and job search behaviour**

With this breadth of possible employment choices and geographic horizons in mind, ICL students were able to heed greater consideration of non-career factors, such as location preferences that related to caring for parents, work for partners, social infrastructure such as education for future children, citizenship concerns and strategies, as well as quality of place inclinations, as discussed in Chapter 2. However, when limiting their considerations to employment choice, students generally described weighing possible options to find their optimal combination of good pay, career development potential, and intellectual stimulation.
There was, however, considerable variety among students’ predilections along each of these issues. To begin with intellectual preferences, some students enjoyed scientific bench work and placed emphasis on finding an institutional environment that offered intellectually exciting research projects with relatively steady funding and sufficient resources. Other students described wanting “more than a research career,” hoping to move towards management positions that they expected would give a more varied and challenging professional experience.

In terms of quality of place, their preferences again seemed to vary as widely as their personalities. For example, Ryan hoped to find work in a small town, like the college town he grew up in, while Nerea explained that she couldn’t imagine not being in a big city because she enjoys the nightlife and mix of cultures. Most students described their preferences in similarly general terms.

A minority of students intended to remain in London, a strong contrast to the majority of RCA students. For those considering such paths, their attraction to London was primarily based on amenity and lifestyle reasons and was intended at the outset to be a short-term experience. For many students, their motivation to remain stemmed from their interests in the cultural experience of London, which they had been unable to enjoy fully because of a lack of funds and free time as a postgraduate student. In many cases, this interest was coupled with a wish to make a high salary and live relatively comfortably by finding employment in City of London banking or consultancy firms. Nearly all expected eventually to move back home or on to new locations after a few years, once they had made money and gained work experience in London. A few other students were interested in staying in the UK and near London if they were able to find R&D work in the biotechnology or pharmaceutical companies located in the London-Oxford-Cambridge triangle. These students generally felt that their ICL education would hold them in good stead for these careers, but the question was whether or not these firms would be hiring at the moment they needed to find work. This interest was particularly
Notwithstanding the range of potential career paths that ICL students were pursuing, in the main they held similar job search expectations and strategies. Most anticipated that employers would evaluate them almost solely on the basis of their curriculum vitae, including lab experience, science publications, and scholarships, i.e. evidence of their analytical abilities or their demonstrable scientific "know-why" and "know-how." This corresponds with the emphasis placed on codification in analytic knowledge industries. As Asheim and Gertler write (2005, 296), "knowledge generation is based on the application of widely shared and understood scientific principles and methods [and] knowledge processes are more formally organized." In stark contrast to the RCA students, they placed little-to-no emphasis on social contacts or on the importance of developing trust and "know-who" among a network of peers in order to access employment or develop a steady stream of project work. Being located with a particular place-based community that offers complementary skills or services for production, or to mediate against job loss, was a concern mentioned by very few ICL students. While some students acknowledged that social networks might be helpful for their professional reputation and career development, the impression was that these contacts could be anywhere and that a strong network within a particular place-based community was not crucial. Moreover, few students considered context outside the individual firm as important to their individual career development and learning, with the exception of students targeting industrial clusters in Boston or Silicon Valley, where it was felt that being a part of the community where cutting edge work was being done would contribute to their future learning. Generally speaking, however, students described feeling that they already possessed the necessary skills to undertake professional research work, and their search prioritized finding a job that best
suited their current scientific interests and abilities and that would remunerate them well over the need for continued independent learning and collaboration.\textsuperscript{64}

Based on these expectations, students' job search behaviour, therefore, consisted of looking for jobs on-line (either using job search internet databases or by searching for and applying directly to companies that might be of interest to them) or meeting prospective employers at job fairs, although some ICL students lamented that fairs were more popular among local investment banks and consultancy firms than with science or engineering companies.

**Mobility: developing international credibility and experience**

Lastly, unlike the RCA students who considered staying in London a professional necessity, many ICL students felt that moving internationally was a useful strategy for career development, whether they pursued academic or industry careers. Some felt that their experience in London was an important step in differentiating themselves from other graduates back home, as it illustrated not only their “know-why” but also their ability to work in different countries and with people of different backgrounds. As Marianne, a student in medicine, explains regarding academic positions:

\[\text{[Employers] look at your CV to see if you lived in different countries. Basically people (...) who did their undergrad work and did their PhD in the very same city are considered unfavourable to people who have moved around because basically we’ve been told that these people are inflexible.}\]

This perception that international mobility heightens the attractiveness of a candidate resonates with research that suggests many young academics often choose to participate in

\textsuperscript{64} An exception to this rule were students who wished to pursue management careers; many of these students felt they would need to undertake an MBA as a way to gain the “necessary” skills and credentials to access such employment, and that learning business-related skills on-the-job would not be sufficient for the senior positions to which they aspired.
international mobility schemes to better position themselves in academic careers (Musselin 2004; Ackers 2005). Many students oriented more towards industry held similar views. Yet others felt that continued mobility was key to successful career development. Frederika, a chemistry student, says:

I think back in the days it was normal to stay in one place, but now it isn’t. ...I think it’s expected of you to move every five years to somewhere else to try new things. (...) I think someone once told me that if you’ve been in the same company for ten years, then they’ll ask, well, why? Why were you not open to learning new techniques, to widening horizons?

When asked to clarify, Frederika explained that she didn’t believe that it was sufficient to move between companies, but that movement between countries would illustrate sufficient intellectual flexibility and interpersonal skills. These sentiments reinforce the general perception of nearly all ICL students that their analytical and synthetic skills were widely transferable, but demonstrating international competence and flexibility were core strategies to distinguish themselves from their peers and develop successful careers.

**Discussion and conclusions**

This chapter began with the assertion that the ability to attract and retain highly skilled workers has become a key component of economic development strategies in recent years, with international postgraduate students representing a population of significant interest for policy-makers. However, despite this burgeoning interest, our understanding of the individual career strategies of these students upon the completion of their studies remains poorly understood. Moreover, little consideration has been given to the different strategies and intentions that students from various disciplinary backgrounds may hold. This research advances our understanding of this issue by illustrating key differences in terms of the socio-
spatial career concerns held by international students with different disciplinary training in London. While the particularities of the institutional and economic context this study needs to be recognized for shaping students’ perceptions, the findings of this research advance our understanding by pointing to important differences in strategies that correspond with key differences elucidated in the geography of innovation literature according to the three knowledge bases.

First, the students trained in art and design programs illustrated strong awareness of the dominant labour market dynamics and innovation processes in industries that are dominated by symbolic knowledge. As a result, their career considerations prioritize their involvement in creative processes, and illustrate an expectation to continually work in project teams, collaborating and learning throughout their working lives. Given this expectation, students placed great emphasis on maintaining and expanding their personal network, or “know-who,” in order to be able to access new work contracts and clients repeatedly, as well as to have a set of trusted contacts with complementary technical and artistic skills to be able to collaborate and bring diverse projects to fruition. Moreover, while many students spoke of their target design sectors as global industries, such as fashion and advertising, they were cognizant that the aesthetic meanings of their designs were somewhat limited to specific locales and contexts, as was their place-specific understanding of industry operations. For these reasons, graduates with symbolic knowledge academic training generally were strategic and specific about where they lived and worked after graduation. Those graduates placed considerable emphasis on being within communities in major design centres, and particularly London, to be able to establish and advance their careers. Those considering moves outside London did so with prudence as to how it would shape their professional prospects.
Second, students with engineering-related training expected that interactive learning would be a continuing element of their future careers, in line with theories of work within synthetic knowledge based industries. These students emphasized their proven problem-solving skills and abilities, or “know-how,” and often targeted their job search behaviours to find a company at which their skills could be best applied. Students tended to be mindful that certain elements of their synthetic knowledge were context dependent (e.g. engineering codes), but few felt that this would hinder the geographic transferability of their knowledge as these differences could easily be learned, so they placed little importance on remaining within certain labour markets for their career development. Lastly, students from synthetic knowledge training also felt they could apply their process-oriented and quantitative skills in a wide range of industries, which included crossing over into business and finance.

Third, students with academic training in the natural sciences and medicine expressed career strategies that illustrated a strong awareness of their analytical knowledge abilities, expecting careers that would employ their formal research skills, or “know-why,” in the creation of new knowledge. Many students with this training anticipated careers in either laboratories or teaching, but felt their knowledge and quantitative and deductive skills could be easily transposed into many different geographic and sectoral contexts. These students also discussed potentially moving into new fields such as quantitative finance, where their skills would be highly valued (and well remunerated). Similar to the students with predominantly synthetic knowledge training who perceived a wide applicability of their knowledge, students with analytical knowledge training rarely had strategies that involved targeting particular labour markets or relying on a community of peers to find employment; instead, they relied heavily on their credentials, history of publications, and proven research abilities to access desired employment opportunities.
Policy-makers and academics interested in regional economic development and highly skilled labour mobility can draw a number of lessons from this research on the different socio-spatial career considerations of international postgraduate students from diverse academic disciplines. First, this analysis highlights that graduates of disciplines oriented to symbolic knowledge sectors place the greatest emphasis on establishing a network of contacts and on remaining located near particular local labour markets that support their craft after graduation. If there is a dynamic local agglomeration of cultural activities and creative industries where these students graduate, as in the case of London, one can infer that the likelihood that these students will remain in this city immediately after graduation is high. By comparison, graduates with academic training corresponding to synthetic and analytical knowledge bases feel their skills and knowledge provide them with much greater mobility, and they place less importance on entering specific labour markets. Consequently, they may have a lower likelihood of staying in the city in which they have studied for professional reasons; however, these students may be enticed to stay if the job opportunities in fields where students quantitative and analytical skills are lucratively valued, such as the case of investment banking in the City of London. Nevertheless, as Chapter Two indicates, these career-driven strategies must be recognized as just one of many factors that influence international postgraduate students, with other personal, social, and regulatory concerns potentially counterbalancing any individual career preferences.

Lastly, while these findings draw from international students’ career strategies and perceptions, they also speak to a more general debate within economic geography that questions whether the growth of cities and the inward mobility of workers is driven primarily by firm and industry behaviours (Storper and Scott 2009) or individual agency and the prioritization of lifestyle preferences and amenities in shaping labour mobility patterns (Glaeser 2000; Clark et al. 2002; Florida 2002; Florida 2004). Put more simply, do people
follow jobs or do jobs follow people? The findings presented here contribute to this debate in three ways. First, they suggest that students base their location decisions not only on the availability of an immediate job, but on longer-term career prospects, taking a longitudinal perspective to the desired factors that shape the attractiveness of an environment for career advancement, support and security. Second, this chapter supports the finding that is indeed the potential career opportunities – rather than the existence of amenities – that have a strong influence on location strategies after completing one’s studies. After considerable time and financial investment in their advanced studies, students were mindful that their next step was crucial for their career development, and prioritized these concerns accordingly. Third, this paper also revealed that the ways that career considerations shaped location preferences for students differed along knowledge base lines. Students with symbolic knowledge training emphasized the importance of being located in a metropolitan labour market like London that offers substantial creative industry place-specific interdependencies, attributes, and networks that provide them with the greatest prospects for finding desirable work. While many of these urban assets are similar to the quality of place amenities highlighted in the “creative class” literature as being attractive to a wide range of workers (Florida 2004), these findings suggest that these assets are appreciated primarily because they offer professional benefits by those seeking to develop careers in symbolic knowledge base sectors, not because they are lifestyle predilections. In other words, students seeking careers in symbolic knowledge based industries place a premium on being in an environment that offers attributes that support their career development, blurring the distinction between quality of place in terms of professional and lifestyle factors. This finding is also support by Leslie and Brail (2009) and Gertler et al (2010). In contrast, the science and engineering graduates tend to maintain a clearer distinction between the kind of urban environment that is deemed desirable as a place of residence, and a potentially attractive work environment. The particularities of the job and the firm are
considered paramount for career development as these graduates seek to find the right opportunity to apply their analytical and synthetic skills profitably, and a wider scope of quality of place attributes are then able to enter the decision-making process for affecting labour mobility patterns. These conclusions suggest that the type of environment that is considered attractive or desirable for workers differs according to their type of work. More research is needed to establish finer occupational distinctions within the broad knowledge base categories with regard to the varying spatial concerns among different workers in the economy. Economic geographers are particularly well suited to make this important contribution.
**Conclusions: Transnational landscapes of opportunity?**

The fact is, the competition for foreign students has become far more intense. While American campuses are still by far the favorite destination, they have been losing share for years, especially to Canada, Australia and Europe. The European Union is even considering offering citizenship to foreign students who complete doctorates in Europe... Indeed, competition for brains and ideas is where the battle for global influence should be waged. After so many years of America’s near hegemony in this field, it is good for the United States to be reminded that the people banging at the door have other choices.


As the quote above from *The New York Times* indicates, there is a heightened sense of competition among the media and policy-makers with respect to the role that international students can play in talent-based economic development strategies. Despite the evident similarity of policies introduced by governments as they seek to gain competitive advantage in terms of being able to attract and retain 'brainpower,' this thesis has argued that we have little understanding of the policy-making processes contributing to the evolving regulatory framework, nor do we have insight in to the ways that students are responding to these policy changes. The objective of this thesis was to add to our knowledge of the ways that policy ideas regarding international students have been “mobile,” as well as to advance our understanding of the process by which students, as highly skilled transmigrants, develop strategies regarding their future employment and place of residence.

In order to address these issues, I employed two distinct research approaches in comparative case studies in Toronto, Canada, and London, UK. The first approach investigated through interviews the evolving policy and institutional framework shaping the experience of international students during their studies as well as their post-graduation transition into the labour market afterwards with key policy-makers. This approach was supplemented with a review of various types of policy documents and media reports. The second approach involved
in-depth interviews with students at the (post)graduate level in the fields of science and engineering and art and design. Together, these methods sought to address these central questions: What changes are states making to attract and retain international students as part of talent-based economic development strategies, and what do these changes tell us about the mobility of policy ideas regarding highly skilled migrants? What is the nature of decision-making for international students finishing advanced studies in science and engineering, and to what extent does the experience of studying in a particular place shape the post-graduation strategies for these students? And to what extent do the post-graduation strategies held by students differ according to disciplinary field of study?

In answering these questions, this dissertation has made a number of contributions. To begin, Chapter 1 illustrated the value in combining both a diffusionist and institutionalist approach for understanding the evolving policy framework as it relates to international student mobility. Through the interviews and supplementary reports that explored the rationales leading to introduction of strikingly similar initiatives in Canada and the UK, it was revealed that, to a certain extent, external ideas and incentives shaped the policy-making framework in each country. The timing of the programs and the justification given by informants illustrated that changes in other jurisdictions were important sources of inspiration, motivation, or justification for initiatives in Canada and the UK. In some instances, Canada and the UK drew upon each other, while in other cases they drew more widely; however, these findings show that policy ideas are mobile, flowing from one jurisdiction to another. The mechanisms underpinning the transfer of policies related to a sense of competition over mobile brainpower, and a shift in political-economic ideology towards a higher prioritization of market-based rationales in international education activities. The competition-led diffusion was particularly important when countries already had similar policies, such as post-graduation work permits, and sought to out-do each other by making
their offer even more attractive to students. However, this chapter also illustrated the continued influence of institutional legacies in slowing the rate of policy change and contributing to the persistence of geographic difference. The mediating institutional effects illustrated in this chapter relate to governance and funding frameworks, domestic politics and attitudes, and wider processes of institutional reform.

With an eye to the evolving context reviewed in Chapter 1, Chapter 2 changed the perspective to the thoughts and strategies of the international students who are the subjects of these policy changes. By focusing on a heterogeneous group of international students finishing (post)graduate science and engineering programs in Toronto, Canada, and London, UK, Chapter 2 illustrated the value of adopting a transnational framework in order to begin developing a better understanding of the factors and processes that shape the decision-making process for international students. In particular, this chapter revealed the extent to which students’ decisions involve a complex intermingling of factors related to personal relationships and families, (im)migration regulation, and career strategy considerations. Empirically, these students with advanced training in science and engineering exuded considerable confidence in their analytical and research skills, and perceived a broad range of professional options before them in different geographic and industrial contexts. Theoretically, this chapter also illustrated that students, to a certain extent, are shaped by the multi-layered social space where they study; by comparing the ways that students were responding to the different policy changes and perceived career choices in the two sites, this chapter found that the institutional environments in which students study are not mere backdrops to their career development and migration patterns, but are constitutive of the possible work and life opportunities available to them.
Chapter 3 provided an illustration of the ways that the career strategies for international students differ by discipline. Using the knowledge base framework as a springboard, my analysis revealed that there are key differences in terms of the socio-spatial career concerns held by (post)graduate international students with training in art and design, engineering, and science. Students in art and design displayed having strong awareness of labour market dynamics that are characteristic of work in the symbolic knowledge based industries. They emphasized work as a creative process, often on a project basis. As a result, graduates of these fields placed a premium on being located within an environment that had the place-specific assets and networks that provided the greatest prospects for finding desirable work. The engineering and science students, by contrast, were much more open towards the types of environments where they could find employment that would utilize their analytical and synthetic knowledge bases. Many felt their quantitative and deductive skills could be easily transposed into different geographic and sectoral contexts, and thus emphasized finding a job in which they could best apply their skills. Students with academic training in analytical and synthetic knowledge were thus less concerned about the particular labour market and industrial context into which they would be entering, and were open to a wider range of geographic contexts and the various qualities of place.

**Avenues for future research**

This dissertation provides fertile ground for a number of future research avenues. I outline four. To begin, the investigation into the policy-mobility process in Chapter 1 was based largely on the reasoning given by policy-makers and publically available media and policy reports. This approach was useful to investigate both the mechanisms underpinning the transfer of policy ideas in and out (as well as across) Canada and the UK, and the ways in which
institutional legacies contributed to a differentiated policy landscape. However, there is scope to take a much broader approach towards the actors/actants that may be influential in shaping the policy-making process. In particular, several scholars have recognized the particular roles of epistemic communities, policy consultants, supra-national organizations, conferences, think tanks, and policy reports involved in the web of transnational governance networks for contributing to the ways that policy ideas become viewed as legitimate and are disseminated (Larner 2007; Mahon and McBride 2009; Peck 2009; McCann under review). Given the prevalence of inter-national lobby organizations and representative associations within the spheres of higher education and research, a more inclusive investigation of the potential channels, networks, places, and objects involved in the changing policy landscape may provide a more nuanced understanding of mobile policy processes. Moreover, differences in the institutional responses of universities within particular regional or national contexts merits further investigation. Exploring these questions may allow us to gain greater insight into the ways that larger processes of reform in higher education (e.g. the creation of the European Higher Education Area, the ASEAN network) and the stakeholders, agents, and networks involved in this process have bearing on policies relating specifically to international student mobility.

Second, the goal of Chapter 2 was to identify what elements of the decision-making process might be common among a diverse group of international students who were at a similar life-stage with comparable levels and types of education, as well as to investigate how this process varies by place. While this approach enabled new questions to be asked regarding the common experiences of diverse international students in a chosen institution/city, it did not enable me to explore in any great depth the differences in the perceptions held by students along lines of gender, class, race, and nationality due to the size and nature of my sample. Also, this approach led me to remain relatively silent on the multiple dimensions of identity
that contribute to international students’ complex social positions, particularly as transmigrants (McDowell 2008). Two different avenues of research could be employed to explore questions along these lines. The first would be to conduct further qualitative research with a group of international students who are chosen for sharing relatively similar geographic and cultural backgrounds to explore in greater depth through qualitative methods how their situated multiple identities and subject positions inform their plans with respect to their careers. The second potential avenue would be to conduct a large-scale survey that investigates how the importance placed on the factors identified in this research are weighed differently among intersections of gender, class, and race, and nationality. Research into these categorical differences would provide important insight into possible structural inequalities within this diverse student population.

Third, also building on Chapter 2, this research focused on understanding the ways that students self-consciously weighed various types of factors as they made decisions regarding what to do after graduation. This was a deliberate approach because I believed the greatest insight into the complex evaluation of various factors would be gained while students were in the midst of the process; moreover, research has shown that the stated prospects of graduate students in the sciences are often reasonably accurate reflections of their eventual career paths (Fox and Stephan 2001). The foundation established with this research provides fertile ground to re-establish contact with these students to learn of their eventual paths (as many have now finished their studies). Extending the research in a longitudinal manner like this would provide valuable insight into the dynamic nature of international student decision-making, shedding light on which factors or circumstances eventually pulled them in one direction over another (geographically and otherwise). These findings would be particularly interesting with the science and engineering students because so many felt that they held “the world as their oyster,” with wide choice in terms of employment options, even though many had little
personal experience working outside of university settings or accessing work in different geographic labour markets. In other words, this research would provide empirical insight into the methodological question of whether “stated preferences” can provide a useful complement to “revealed preferences” for understanding labour mobility and accessing employment (Scott 2007), and would enable us to re-assess how accurate students’ perceptions were.

Lastly, the research in this dissertation has examined the changing policies of the state, as well as the strategies and perceptions of international students. Missing from this analysis so far has been the perspective of employers. Knowledge of employers’ concerns, preferences, or hiring strategies (for example, related to migration regulation matters, transferability of skills, language abilities) would be a valuable complement to the findings presented in this thesis for understanding the dynamics involved in international students’ transition into specific local labor markets.

Reflections on policy implications

In conclusion, this thesis raises a number of issues and findings of particular significance for policy-makers and economic development practitioners. The first issue addresses the role universities can serve as potential “anchors” for international students in local community and labour force development strategies (Gertler and Vinodrai 2005). The findings of Chapter 3 indicate that the likelihood that an international student will be encouraged to remain in the city-region where they have conducted their studies differs according to their academic field. Because of the significance that art and design students place on accessing place-specific assets and a supportive network of contacts for work in the creative industries, the likelihood that these graduates will wish to remain in a city-region depends heavily on the existence of a dynamic cultural industry. If a region possesses these place-based
assets, chances are greater that these students will be enticed to remain (implying that the reverse is also true). In comparison, graduates of programs with academic training in analytical and synthetic knowledge bases tended to retain a greater distinction between the attractiveness of particular jobs that would remunerate their skills, and desirable quality of place characteristics, which tended to be considered of secondary importance. In other words, these findings suggest that a wide range of environments may be able to retain graduates of engineering and science programs, so long as the firm or industrial system offers promising career opportunities. However, it is important to bear in mind, as Chapter 2 illustrated, that international (post)graduate students are balancing these career-led considerations with many other personal, social and regulatory factors that may pull them in a number of different directions after their studies.

The second issue is with respect to the influence of (im)migration policies seeking to retain international students after graduation. Because the policy context was changing during the course of this fieldwork, I had the fortunate situation of being able to discuss with students how they understood the changes that were taking place, what were their sources of regulatory information, and what impact, if any, the changing regulations had on their plans. As illustrated in Chapter 2, there were key differences in terms of the relative lure of work regulation and permanent residency considerations in the two sites. The cohort of students that I met with in London had begun their studies when the immigration and post-graduation regulations for the UK were widely regarded as difficult, opaque, and in flux. Thus, while the International Graduate Scheme was introduced that enabled overseas students in the UK (i.e. non-EU students) to be eligible for a one or two-year work permit without a formal job offer, most students generally were unfazed by this change, possibly because it was not sufficiently attractive or came too late in their studies for them to alter their pre-conceived post-graduation plans. By contrast, the changes made in Canada – to extend the Post-Graduation
Work Permit to three years and to introduce the Canadian Experience Class (CEC), which credits students for their studies in Canada as part of the criteria used to evaluate their permanent residency applications – made a noticeable impression on several of the interviewed students in Toronto. Many indicated that the speed with which they could now potentially access permanent residency, and ultimately citizenship (just three years later with as-of-right naturalization procedures), was an offer too attractive to pass up; for many, staying in Canada after graduation became their priority. These findings indicate that several international students place such a high premium on the security and prosperity that is associated with membership in a stable, affluent society (as a permanent resident or eventual citizen) that these motivations can override all other considerations. This sentiment is even higher for those students moving from poorer and less politically stable countries, who often strategized about being able to bring their families to come settle with them as well. For others, the CEC program opened up the possibility of adopting more “flexible” notions of citizenship, whereby international students were enticed to pursue Canadian citizenship so that they could have more secure access to North American labour markets, and the Canadian state could strengthen ties with these individuals and more readily benefit from their skills. Comparing the two cases, then, it is precisely because the procedures in Canada offered more transparent and swift routes to membership than the UK that it was viewed as a more attractive option to the students already studying there. It remains to be seen whether these new policies will also have an effect at the outset on students determining whether, and if so where, to pursue their studies overseas, but the findings from this study suggest they may be highly influential.

It also important to consider, however, wider issues of social equality in relation to the expansion of programs that seek to attract and retain greater numbers of international students. To begin, programs like the CEC give preferential treatment to international students to become permanent residents, but not to lower-skilled migrant labourers who also make
important contributions to the national economy and society, and who comprise the majority of temporary permit holders within Canada (and in the world). It is necessary to ask whether countries such as Canada want to advance a system with differential paths to citizenship based largely on the fluctuating economic valuation of certain types of knowledge and skills.

Second, it is also worth considering the often-undifferentiated economic rationales underpinning state policies regarding the international students. In failing to make a clear distinction between the objective of attracting fee-paying international students as a source of revenue as well as potentially retaining these students as future migrants, governments seem to be creating a scenario whereby they can “have their cake and eat it too.” There is a need to reconsider whether it is appropriate for governments to be linking international educational experiences that often require a significant financial investment by the students involved with national labour development policies and fast-track routes to permanent residency. One can imagine that such pathways will soon be popular among potential immigrants able to incur higher costs up front (comparatively higher than the traditional economic class routes), and will potentially exclude a large number of prospective migrants unable to afford the expense of studying as an international student.

Lastly, on a global scale, while the mobility patterns of international students continue to change (OBHE 2007), they remain highly differentiated and uneven, with the majority of students moving from the global South to North, or East to West, to study. In 2004, two-thirds (66 per-cent) of international students were nationals of non-OECD countries, and with just five English-speaking countries (US, UK, Australia, Canada, New Zealand) receiving nearly half of all students (47 per-cent) (Vincent-Lancrin 2008, 106). There are significant social and economic implications of these trends. For example, in recent years, several commentators have argued for the need to shift language from one of ‘brain drain/gain’ to ‘brain circulation’
in recognition of the temporality with which many highly-skilled and entrepreneurial migrants spend time in receiving states, for the likelihood that they will return home with enhanced intellectual and business skills in response to changing opportunities in the global economy, and for the scientific development potential in diaspora knowledge networks for developing countries (Meyer and Brown 1999; Meyer 2001; Saxenian 2002a, 2006). Yet, there are also several instances of internationally trained professionals (especially health care professionals) failing to return home to the detriment of the socio-economic development of their home countries, and continued skepticism regarding the real impact of diaspora knowledge networks (Brown 2002; Lucas 2004). There is need to envisage international policies that take into consideration the unequal distribution of the risks and rewards with respect to international education and migrant policies in a range of professional sectors, and which seek to redress the greater costs born by sending states that lose their citizens that are enticed by more generous for the economic development. Socially, while the relationship between education and social (re)production has been well established, initial research on the potential impact of international education on sending communities suggests that an overseas education reproduces differentiated access to employment opportunities – as international graduates are perceived as having greater social and cultural capital than locally trained graduates – and further entrenches social inequalities in the home society (e.g. Waters 2006a). These implications raise questions about the role international education plays not only in changing global labour market dynamics, but the ways that social reproduction differences are becoming produced and reinforced at the global scale. This thesis lays an important foundation for much further inquiry into the changing social and economic geographies associated with the on-going process of the internationalization of higher education.
References


Hawthorne, L. 2007. Labour market outcomes for immigrant professionals: Canada and Australia compared.: full report is available from Citizenship and Immigration Canada (CIC).


———. 2007. 'Roundabout routes and sanctuary schools': The role of situated educational practices and habitus in the creation of transnational professionals. *Global Networks* **7:**477-497.


## Appendices

### Appendix 1: Schedule of student interviews

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*at the time of the interview

PR: permanent resident


Engineering: Aeronautics, Bioengineering, Civil and Environmental Engineering, Computing, Chemical Engineering, Electrical Engineering, Materials, Mechanical Engineering

Physical Sciences: Chemistry, Physics, Mathematics

Life Sciences + Medicine: Biology, Cell and Molecular Biology, Epidemiology, Medicine, Molecular Biosciences, Neuroscience,
Appendix 2: Letter of introduction

Project: Constructing transnational livelihoods: International student migratory flows in Toronto, Canada and London, UK

Dear Potential Participant:

I am writing to request your involvement as an interviewee in a project entitled “Constructing transnational livelihoods: International student migratory flows in Toronto, Canada and London, UK.” I am conducting this research as part of my program requirements as a PhD Candidate in Geography at the University of Toronto. This research is funded by a Social Sciences and Humanities Research Council Doctoral Fellowship and is being carried out under the supervision of Dr. Meric S. Gertler, Professor in the Department of Geography, University of Toronto.

The objective of this research is to investigate the factors and processes that shape the post-graduation employment and settlement strategies of international graduate students. In particular, I wish to examine the relationship between the original intentions to study abroad and the construction of plans in terms of career and place of residence after living and studying abroad in a particular city. For this research, I am conducting case studies with of international graduate students in the fields of art and design as well as science and engineering in Toronto and London.

In this project, I will interview approximately 100 university students. As with other interviewees, your participation will last between 45-60 minutes. The interview will be informal and conversational in nature and will address issues such as your motivation to studying abroad, your current experiences and your expectations and strategies regarding place of residence and employment upon completion of your studies. However, I will encourage you to bring up issues that you feel are important or re-direct a line of conversation as you see fit. You are also entitled to refuse to answer any questions, to end a line of conversation as you please, or to withdraw your participation at any time.

The interview will be tape recorded with your permission. All information will be treated confidentially and I alone will have access to the interview tapes and transcripts. No identifiable information, such as your name, position, and institutional affiliation, will be used in publication unless I contact you for express written permission to do so. When the research is complete, you will receive a summary of research findings if you would like one.

The results of the research will be presented in my doctoral dissertation and will also be disseminated as academic papers in journals and conferences in geography, migration, urban studies, and education.

Please feel free to get in touch me or my supervisor should you have any questions about this research (see below for contact information). You can also reach the Ethics Review Board of the University of Toronto at ethics.review@utoronto.ca or at 416.946.3273. I will contact you in the next week or two to arrange a meeting at a place and time that is convenient to you.

Sincerely,

Kate Geddie, PhD Candidate
Department of Geography, University of Toronto
Telephone: [number]
Email: kate.geddie@utoronto.ca

Meric S. Gertler, Professor (Supervisor)
Department of Geography, University of Toronto
Telephone: [number]
Email: meric.gertler@utoronto.ca
Appendix 3: Sample student interview guide

1. Background information

Name:
Program, Institution:
Year of study:
Expected date of completion:
Hometown and country:
Citizenship(s)/passport(s):
Age and marital status:
Current residence location and situation:
Mother tongue/comfort in English/Other languages spoken:

2. Migration history
Status and time in UK:
Age upon arrival:
Alone or with family? Other family or contacts here?
Where else have you lived prior to coming to London? (other countries, cities in UK)

3. Educational history

3.1 Studies prior to coming (brief narrative)

3.2 Reasons for seeking an overseas education:

3.3 Factors that shaped choice of country/ city/ university:
(narrative)

Potential factors:
where else did you apply?
What was the attraction to the UK?

Funding (tuition/scholarship)
Costs (living/exchange rate, travel home)
Value of UK degree – in home country, personal esteem, global labour market
Value of degree from x institution
Reputation of supervisor/department
Instruction in English
Visa requirements (ease of or lack of)
Potential for professional contacts
Potential for personal/social contacts in UK
Potential to immigrate/migrate long-term
Potential to obtain a UK/EU passport
Potential to gain work experience in UK
Attraction to London as a multicultural city
Attraction to other attributes of London
Other?

Out of all that we discussed, which is the most important?

Do you remember where you thought you wanted to work? (geog)
4. Current situation (education and employment)

4.1 General satisfaction with choice of program/school (resources at university, funding, supervisor)

4.2 General satisfaction with living in London

4.3 Off-campus employment (finances)

4.4 Reflection on challenges

5. Perception of opportunities, choices and constraints (career, residence, broader life)

A. Career

5.1 Have you recently participated in any career counselling?

5.2 What career opportunities do you feel you have upon completion of your degree? What industries value of RCA degree – what environment? Where?

5.3 What would you like to be doing in 5-10 years, in terms of work? (reflection on values and preferences re career)

5.4 Realistically, what kinds of jobs do you think you will be able to get? (assess challenges, strategies)

5.5 When you think about what you expected or desired in terms of career before beginning your programme, and think of what you want now, has it changed? If so, how? (studying overseas, expanding perceptions, access to info)

5.6 Currently, from where do you get your information/assistance regarding potential jobs?

B. Residence/ mobility

5.7 Where do you think you will apply? What would be ideal place to work for you?

5.8 In your desired career, how important is experience in a particular place? (labour market, design school)?

5.9 Do you think where you want to work has changed since beginning your program?

5.10 The regulation regarding your allowance to stay in the UK has changed during the course of your studies. How do you interpret these changes? If planning to stay in the UK, what work mobility programme might you pursue? (check understanding) If planning to go elsewhere, what is the regulatory framework for that country? Where do you get your information on immigration changes (in UK and elsewhere?)

C. Broader life considerations and feelings of responsibility

5.11 Do you feel a responsibility to contribute to anyone or anything in deciding where to live and work?

5.12 Has living overseas changed your sense of responsibility?

5.13 What about your perception of self, your place in the world and the opportunities available to you?

5.14 Do you make a distinction between short-term and long-term plans?

5.15 Comparative consideration of factors regarding work and settlement choices: Perfect job
Potential for range of work
City/town attributes:
Quality of life, ethnic diversity, cultural scene (multicultural or "high arts"), perception of tolerance?
Cost of living
Pay rate (with exch rate)
Potential for future mobility or career progression
Value of place-specific work experience
Broader life/relationship/family responsibilities? (education for children, parents)
Spouse/partner's employment
Citizenship (current and future status)
Other?

Most important out of all factors?

6. Network involvement

6.1 Personal social relations: frequency of contact and strength of ties
Back home: with whom? how often? what method?
Elsewhere: with whom? (family and friends?) where? method (write, email, phone)?
Engagement in London? (internal and external to dept and campus)

6.2 Changes in relation of importance of ties?
(with time abroad, has the amount of time that you spend communicating back home changed?)

6.3 Professional relations: involvement in intellectual/professional networks? (attendance of international and local conferences? Joint publications/papers?)

7. Other issues?
Appendix 4: Consent form, anonymous respondent

University of Toronto
Department of Geography
Programme in Planning

100 St. George Street, Room 5047
Toronto, Ontario, Canada, M5S 3G3
Telephone: (416) 978-3375
Fax: (416) 946-3886

Project: Constructing transnational livelihoods: International student migratory flows in Toronto, Canada and London, UK

Researchers:
Kate Geddie, Ph.D. Candidate
Dept of Geography, University of Toronto
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Supervisor:
Dr. Meric S. Gertler, Professor
Dept of Geography, University of Toronto
meric.gertler@utoronto.ca

Thank you for agreeing to participate as an interviewee in this study. Before proceeding with the interview, it is important that you read and understand the purposes of the study and your rights as a research participant.

Project background and nature of involvement:
- I have read the Letter of Introduction provided to me by the Researcher conducting the study.
- I understand this research looks at international students in Toronto and London to understand the factors and processes shaping post-graduation settlement and employment strategies.
- I understand that my participation as an interviewee will last between 45-60 minutes.
- I understand that my participation in this study is voluntary and that I may withdraw from the interview at any given time for any reason, without penalty.
- I understand that my participation will bring minimal risks or harm.
- I understand that I may ask questions of the researcher at any point during my involvement.
- I understand that, at the end of the interview, I may retract any information that I provided.
- I understand that there is no obligation to answer any question that I may feel is invasive, offensive or inappropriate.
- I understand that there will be no payment for participation.

Guarantee of confidentiality:
- I understand that all personal information will be kept strictly confidential. My name will not appear in publications stemming from this research, nor will it be associated with any information I provide.
- I understand that the results of this study will be distributed in academic conferences and journals, and that a summary of results will be made available to me if I wish.
- I understand that if I agree to be tape recorded, only the researcher and supervisor will have access to hear the taped interview or read the transcript. The tapes will be stored in a locked cabinet or kept on a locked private computer if recorded as digital audio files. If I do not wish to be tape recorded, then I permit the interviewer to take notes during the interview.
- As indicated in my signature below, I acknowledge that I am participating freely and willingly and I am providing my consent.
- I agree to the taping of this interview (please circle your choice): YES  NO

Name of participant: _______________________________________________________

Signature: ________________________________  Date: _____________________________

Please take a copy of this form with you for reference. For any questions, please contact the researcher or her supervisor (see above), or the Ethics Review Office at 416.946.3273 or ethics.review@utoronto.ca.

I have fully explained the procedures of the study to the participant.

Signature of researcher: _______________________  Date: ________________________
Appendix 5: Consent form, identified respondent

University of Toronto
Department of Geography
Programme in Planning
100 St. George Street, Room 5047
Toronto, Ontario, Canada, M5S 3G3
Telephone: (416) 978-3375
Fax: (416) 946-3886

Project: Constructing transnational livelihoods: International student migratory flows in Toronto, Canada and London, UK

Researcher:
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Dept of Geography, University of Toronto
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Supervisor:
Dr. Meric S. Gertler, Professor
Dept of Geography, University of Toronto
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Thank you for agreeing to participate as an interviewee in this study. Before proceeding with the interview, it is important that you read and understand the purposes of the study and your rights as a research participant.

Project background and nature of involvement:
- I have read the letter of introduction provided to me by the Researcher conducting the study.
- I understand the this research looks at international students in Toronto and London to understand the factors and processes shaping post-graduation settlement and employment strategies.
- I understand that my participation as an interviewee will last between 45-60 minutes.
- I understand that my participation in this study is voluntary and that I may withdraw from the interview at any given time for any reason, without penalty.
- I understand that my participation will bring minimal risks or harm.
- I understand that I may ask questions of the researcher at any point during my involvement.
- I understand that, at the end of the interview, I may retract any information that I provided.
- I understand that there is no obligation to answer any question that I may feel is invasive, offensive or inappropriate.
- I understand that there will be no payment for participation.

Confidentiality conditions:
- I understand that in signing below, I am agreeing to be named in the above study. Quotes from my interview may appear in publications and will be attributed to me.
- I understand that the results of this study will be distributed in academic conferences and journals, and that a summary of results will be made available to me if I wish.
- I understand that if I agree to be tape recorded, only the researcher and supervisor will have access to hear the taped interview or read the transcript. The tapes will be stored in a locked cabinet or kept on a locked private computer if recorded as digital audio files. If I do not wish to be tape recorded, then I permit the interviewer to take notes during the interview.
- As indicated in my signature below, I acknowledge that I am participating freely and willingly and I am providing my consent.
- I agree to the taping of this interview (please circle your choice): YES NO

Name of participant: ______________________________________________________
Signature: ___________________________ Date: ______________________

Please take a copy of this form with you for reference. For any questions, please contact the researcher or her supervisor (see above), or the Ethics Review Office at 416.946.3273 or ethics.review@utoronto.ca.

I have fully explained the procedures of the study to the participant.

Signature of researcher: ___________________________ Date: ______________________
Appendix 6: Sample interview request letter to policy-makers

Dear X,

I am writing to request the opportunity to interview you for my dissertation project entitled “Constructing transnational livelihoods: international student migratory flows in Toronto, Canada and London, UK.” I am conducting this research as part of my program requirements as a PhD Candidate in Geography at the University of Toronto.

I am not sure if you will recall, but we met on one occasion several years ago when I was working at the European University Association in Brussels, Belgium. Between 2002-2005, I was working in EUA’s policy development and institutional relations unit.

After my experience at EUA, I returned to my studies and my current research broadly addresses the issue of competing for international graduate students within the context of national and regional talent-based economic development strategies. The primary objective of my study is to investigate the factors and processes that shape the employment and settlement strategies of international graduate students upon completion of their studies. However, I am also highly interested in the evolving policy and regulatory framework that shapes the attraction and possible retention of these students for the local and national labour market. In meeting with you, I would like to learn about the development of X’s strategic policy positions regarding international students and graduate education. I am interested in X’s role in shaping the national dialogue on the need to expand these activities, and would like to about your involvement in national research funding debates and immigration regulation changes. More specifically, I would also like to discuss what seems to be an emerging shift away from primarily viewing the value of international students as direct to the institution to a perspective based on attracting foreign students as potential brainpower for longer-term economic development and labour force development.

Please let me know if you are willing to meet with me, and if it would be possible to conduct this interview at your convenience in the next few weeks. I would be happy to come to X and I expect the interview would take 30-45 minutes of your time.

If you are not available, I would greatly appreciate if you would consider putting me in touch with another member of your staff.

Please do not hesitate to let me know if I can provide you with further information or if you have any questions.

Sincerely,

Kate Geddie