The struggle to belong
Dealing with diversity in 21st century urban settings.

Amsterdam, 7-9 July 2011

Soft skills, tacit ties
Exploring the role of non-geographical proximities in international knowledge transfer

Giorgio Touburg[*]

Paper presented at the International RC21 conference 2011
Session 8: World Cities

*Visiting Scholar at the Erasmus University of Rotterdam
Faculty of Social Sciences, department of Sociology
P.O. Box 1738, NL-3000 DR Rotterdam
touburg@fsw.eur.nl

Abstract

The global city theoretical framework explains the paradox of growing concentration of economic activity in certain places in an era of globalization, in which distance appears to be "tamed" by information technology, by stating global cities manage the complexities that arise from the fact that firms increasingly operate in multiple markets. The sheer complexity of the skills and tasks performed in global cities is often believed to require 'hypermobile' professionals.

However, literature concerning the geography of knowledge suggests that tacit knowledge (the type of knowledge the aforementioned professionals are assumed to deal with) is hard to transfer without a shared context and tends to be spatially clustered, while codified knowledge has a much more universal character and is more or less flowing freely around the globe.

There thus seems to be a tension between the notion of a hypermobile, footloose elite on the one hand and the geographical embeddedness of their tacit knowledge on the other. However, in the literature on the geography of knowledge it is hinted that there could be other, non-spatial forms of proximity (relational/cultural/institutional) that play a role in facilitating or hampering the transfer of tacit knowledge. Nevertheless, these assumptions have not yet been empirically scrutinized.

In an attempt to shed light on these non-spatial proximities and the role they play in shaping people's and knowledges' global trajectories, highly skilled Indian employees of Capgemini in the Netherlands were interviewed. The employees dealing with tacit knowledge indeed report on an extensive adaptation process when changing geographies, companies or occupations. Deserving of special mention is the "global corporate sphere" the interviewees experienced at all multinational corporations they worked for. This sphere provides a common interpretational framework for tacit knowledge in different geographical settings, while at the same time it does not hamper the flexibility of the professionals involved.

1. Introduction

The migration of knowledge workers has been an integral component of several research disciplines within the social sciences. In this paper I want to compare two related approaches in which the mobility of knowledge and the professionals that use it plays an important role.

First, the global city theoretical framework emphasizes the pivotal role these migrants play in dealing with the complexities that arise when business is being done across borders and describe them as 'hypermobile' (Sassen 2001: 123; 2006b: 301). Second, approaches rooted in social and economic geography aim to understand locational preferences of knowledge industries and their workers by focusing on the necessity of proximity that arises when innovative and complex types of information and knowledge are being exchanged. Although these different disciplines each have a unique and useful way of theorizing highly skilled migration, some theoretical and empirical lacunae remain.

The global city theoretical framework stresses the importance of TNC's and their employees, but mainly focuses on the position of low-wage and low-skilled

workers when it comes to migration and takes the mobility of highly skilled migrants more or less for granted (cf. Friedmann 1986: 78; Sassen 2001). Geographical approaches have focused on the mobility of knowledge and the professionals partially possessing this knowledge by coming up with the concepts of codified and tacit knowledge. In short, codified knowledge is knowledge that has a universal way of interpretation and can be easily communicated. Tacit knowledge, on the other hand, is often specialist and dependent upon a shared context and therefore needs to be communicated through direct and interpersonal interaction (Gertler 2003; Howells 2000; 2002; Polanyi 1966; Roberts 2001). Needless to say, these two types of knowledge have distinctly different geographies: in order to successfully communicate tacit knowledge, it is assumed geographical proximity of actors is required. This explains why knowledge-intensive industries are often located in clusters. One problem with this approach to knowledge is the indirect way in which it is being measured: knowledge spillover effects are more often assumed than established as facts (cf. Weterings and Boschma 2006). Another problem is that the migration of knowledge (other than its geographical patterns) has not been analyzed within this scholarly field (Williams 2006; 2007: 31). Furthermore, as of recently, scholars within this discipline have been arguing that geographical proximity is not the only form of proximity that has to be taken into account when dealing with tacit forms of knowledge (Gertler 2003: 86-87; Howells 2000: 59-61; Williams 2006: 600). This would mean that organizational, professional and institutional proximity could also provide a common context through which tacit knowledge can be communicated.

In what follows, I will first give an overview of both theoretical approaches and their strengths and weaknesses (2), culminating in my methodological approach (3.1). After that, I will present my findings (3.2-3.5). In the concluding part of this paper (4), I will reflect on these findings and their implications.

2. Social research on knowledge migration: strengths and weaknesses

2.1. The role of highly skilled labor migration in the global city theoretical framework
The global city theoretical framework asserts that deregulation of international markets and information technologies have made it possible for large firms to outsource or relocate parts of their production processes to those countries or regions where production costs are the lowest, meaning a considerable deindustrialization of advanced economies; this went hand-in-hand with the clustering of advanced producer services: headquarters of TNC's are increasingly outsourcing the complex business processes dealing with the coordination of

international production to specialized producer service firms (for example, accountancy firms, law firms, consultancy firms). In accordance with the economics of agglomeration, these firms tend to be clustered in and around global cities because only the local mix of firms, talent and specific expertise can deal with the complexity, uncertainty and required speed involved with these transactions (Sassen 2001: xix-xxi; Van der Waal 2010: 4-5).

Within the global city theoretical framework, knowledge migration plays an important role. Although it is not the main focus of global city-studies, global labor (and more specifically: knowledge) migration is a prerequisite for a truly global division of labor and its urban manifestations. A pivotal assumption within theories on global cities is the advantage of spatial proximity for highly specialized producer services: due to the innovative, strongly interpretive nature of the work involved, the centrality of both information and knowledge in the service sector, and the inherently spatial organization of information, producer services tend to be spatially clustered, their mutual proximity allowing them to contribute to and benefit from the 'social information loop' (Sassen 2001: 104; 2004 [2000]: 196). This assumption is similar to aforementioned work on the geography of knowledge. Sassen (ibid.) even hints at the existence of different types of knowledge and the different spatial consequences of these types of knowledge. I will further elaborate on geographies of knowledge in the next section (2.2).

When it comes to the role of migration in global city-theories, the development of and growing demand for a low wage service labor market, together with a decline of importance of traditional geopolitical hinterlands and borders, almost automatically presumes an influx of low-skilled migrants willing to accept below-minimum wages and deteriorated working conditions (Sassen-Koob 1986: 105). This goes hand-in-hand with a rapidly growing informal and low-skilled labor force (ibid.: 110; Friedmann 1986: 73). So whether immigration contributed to the availability of low-skilled jobs or the other way around, according to these scholars, a self-reinforcing process of low-wage, low-skilled labor migration into the lower, increasingly informal echelons of the labor market is set in motion. And although one cannot solely ascribe the new forms of labor migration to a growing interconnectedness of certain strategic regions, as there are many variables and theories explaining why and how migration flows manifest themselves, new forms of transnational investment play a crucial role in explaining the mobilization of large quantities of people from economically peripheral areas to connected core regions, simply because traditional theories on migration fail to explain the distinctly different patterns that come to the fore (Sassen 1988: 115-119; 2001: 305). Perhaps the most striking of these patterns is the considerable employment growth in emigration countries. Thus, while the

various factors explaining labor migration are being recognized, this theoretical approach states that the distinctness of present-day labor migration to global cities can be ascribed to essentially economic factors. And when migration does receive attention in the literature on global cities, most of the time, it is the migration of low-wage laborers. Developing the concept of the global city, Friedmann (1986: 78) presents a diagram in which the only labor market divisions subjected to migration flows, are the low-wage labor markets. Whenever highly skilled migration is mentioned in the literature on global cities, it is often in an indirect way. For example, Sassen (2001: 123, my emphasis) states that 'top-level professionals [working in the highly specialized network of service firms] are **hypermobile**'. In more recent work, she refers to 'a new stratum of transnational professionals and executives' (Sassen 2006b: 298; see also: Sassen 2006a: 73). She also states that '[t]o be global and **hypermobile** this class needs a state-of-the-art infrastructure in a growing number of [global] cities' (Sassen 2006b: 301, my emphasis). Apparently, she sees this hypermobility as an attribute of the class of transnational professionals. These professionals are, according to Sassen, indeed motivated by 'a rather narrow utility logic – the drive for profits' (ibid.: 300) and as such correspond to the economic demand-driven model of migration Sassen uses in discussing low-wage migration. Their "hypermobility", within this economically deterministic theory, implies an almost frictionless move of these professionals to wherever their skills are needed. It thus views the economic assets of these individuals as transferable, either fully possessed by the individuals themselves, or partly embedded in the "social information loop" of the several global cities discerned.

So, on the one hand, the global city theoretical framework adheres to the assumption that for certain types of complex information, proximity of actors is required, while at the same time it sees the professionals dealing with this knowledge as hypermobile. These theories, however, remain vague about what exactly constitutes this "global" sphere in which it is possible to be relatively mobile and thus in a sense disconnected from the local sphere and exchange context-dependent knowledge at the same time. A possible answer could be that the social information loop mentioned in Global City theories is not to be seen as solely relying on spatial proximity, but also on other, non-spatial forms of proximity, in order to be present in a similar way in several cities or regions across the world.

2.2. A geographical account on the mobility of knowledge
Scholarly work on the geography of knowledge (cf. Storper 1997) tries to explain the ostensible paradox between globalization – facilitated by standardization – on the one hand and new forms of regionalism – induced by specialization – on

the other, by focusing on the competitive advantages offered by spatial clustering. Besides the obvious scale advantages of agglomeration, the territorial clustering of institutions and people facilitates the transfer, formation and development of certain context specific knowledge and practices.

The arrival of the computer, combined with the emergence of the Internet, yielded an increased commodification and transferability of information; monitoring and automating (parts of) business processes took away many spatial constraints, allowing business processes to be relocated to places where production costs are lower. This ongoing process of codification of knowledge (codified knowledge is knowledge that has a universal interpretation, which makes that formal and systemic explicitation such as written text or a map suffices for its full transfer) and the subsequent weakening of spatial constraints raise the strategic value of uncodified or "tacit" knowledge. This type of knowledge is dependent upon a shared context (Howells 2000: 54; 2002: 873) and needs to be communicated through direct and interpersonal interaction (Gertler 2003: 77-78; Howells 2000: 53, 58; 2002: 872; Polanyi 1966; Roberts 2001: 100-101) in order to be fully transferred. Therefore, geographical clustering of actors who deal with such knowledge significantly lowers its transaction costs. The clustering of actors who share a common way of interpreting and creating specific knowledge that is hard to replicate through formalization and/or standardization leads to the formation of so-called "communities of practice": social settings in which actors share common 'action capacities' (Storper 1997: 52), 'frameworks of action' (ibid.: 53), or 'cognitive representations' (ibid.: 190) and therefore facilitate the transfer and formation of tacit knowledge.

Part of the tacitness of the described type of knowledge lies in the fact that it is highly reflexive, thus constantly subjected to revision or reformulation. This is the reason why tacit knowledge is often inextricably associated with highly innovative and creative industries (Gertler 2003: 76, 78-79; Howells 2000: 52; Storper 1997: 238). The fashion industry in Milan and Paris, the movie industry in Hollywood and the ICT industry in Silicon Valley, for instance, are well-known and well-researched spatial clusters of reflexivity.

So, while knowledge in its most codified form flows freely around the globe through channels of mass communication, tacit knowledge, through its dependence on learning-by-doing and a common interpretation, relies strongly on geographical clustering of the involved actors for its formation and transfer. Perceiving this typology through simple dichotomies could lead one to think that the geography of knowledge can best be summarized by a tacit-local/codified-global matrix. However, both Howells (2000: 53-54; 2002: 873) and Roberts (2001: 101-102), while referring to Polanyi (1966), explicitly stress that knowledge is

neither fully tacit nor fully codified and that codified knowledge always needs to rely on tacit understanding or application in order to be useful.

2.3. Recent theoretical developments and additions

As of recently, authors in the fields of economic and social geography are beginning to mention that the proximity created by spatial clustering is not the only proximity we need to take into account when studying the dependence on context of tacit knowledge. Storper (1997: 191) already hints at a 'complex set of territorialities', some of which 'will be international in scale, often embodied in internationally recognized multinational corporate practice and professional behavior.' More concretely, the authors who deal with the geography of tacit knowledge conclude that, besides simple spatial proximity, relational, institutional, or cultural proximity can also provide for a common context that allows for tacit knowledge to be exchanged and transferred (Gertler 2003: 86-87; Howells 2000: 59-61; Williams 2006: 600). While dealing with the theoretical construct of "communities of practice", Gertler (2003: 86) states that 'according to this approach, organizational or relational proximity and occupational similarity are more important than geographical proximity in supporting the production'. He further adds that 'the communities of practice literature [plainly asserts] that tacit knowledge will also flow across regional and national boundaries if organizational or 'virtual community' proximity is strong enough' (ibid.). Quoting Bunnell and Coe (2000), he labels this phenomenon as the 'de-territorialization of closeness' (Gertler 2003: 86). This could mean that, according to these authors, a constant institutional and/or occupational context on which these professionals can rely, even when changing locations, makes that the nature of their knowledge is still tacit while not hindering their mobility in a geographical sense. It should be noted, however, that this mobility can only be more or less without loss of knowledge when one or more of the aforementioned contexts is being held constant.

Bathelt et al. (2004) try to integrate these notions into a theoretical framework when they add to the concepts of "buzz" (Storper and Venables 2004), which is seen as the type of communication through which tacit knowledge is being formed and transported, the notion of "pipelines", the global knowledge linkages through which important knowledge and information is being communicated back and forth with actors outside of the cluster. Provided that there is a 'shared institutional context which enables joint problem-solving, learning and knowledge creation' (Bathelt et al. 2004: 43) between the actors involved, such a pipeline 'enables the actor to go beyond the routines of the local cluster' (ibid.: 42). This means that, according to these authors, the formation of tacit knowledge is no longer confined to a specific industrial region, but can be

communicated to other actors if there is a shared institutional context. And indeed, Bathelt et al. (2004: 45) note that '[s]paces of shared meaning and identity are established through ongoing interactions between actors and firms over time. The resulting values, norms and other institutional arrangements may easily include actors which are located outside the region.' However, the possibility of the TNC as both a user and provider of these pipelines is mentioned nowhere in this article.

While Trippl et al. (2009) criticize the theoretical model of Bathelt et al. by stating that there is a need for 'a better understanding of the innovation process' (ibid.: 459), which requires 'a differentiated view of knowledge-sourcing activities at various spatial scales that goes beyond the buzz-and-pipelines dichotomy that is dominant in the literature' (ibid.) and in that way provide a welcome addition to the theoretical framework, they still see proximity as primarily spatial. For example, they state that they have showed that 'a better understanding of the innovation process requires a differentiated view of knowledge sourcing activities at different **spatial** scales […] (ibid., emphasis added).' And when they do refer to institutional and cultural proximity, these concepts are once again only understood in terms of different spatial scales (ibid.: 448). Which is peculiar, because Straubhaar and Wolter (1997), for example, recognize the (international) firm as a container of a distinct tacit knowledge. Bozkurt (2006: 239) also recognizes the TNC as a context of its own when she states that: '[i]n the workers' accounts, the MNC [multinational corporation, GT] workplace emerges as life in cosmopolitan relief, not only differentiated from alternative workplaces but, in fact, disembedded to a certain extent from the surrounding environment at large.'

Stressing the importance of such an insight, Williams (2007: 31; see also: Williams 2006) states that: 'the role of different types of mobility, including human migration, in knowledge transactions within transnational companies remains imperfectly understood.' Not only is the role of the TNC in knowledge transactions largely overlooked in a theoretical sense and thus not properly researched, knowledge theories in general have hardly been empirically tested. A decade ago, Feldman (2000: 389) identified a need for a more thorough insight in the practice of knowledge spillovers. Cook et al. (2007: 1326) state in the introduction to their research on knowledge creation and differentiation, that while discussions on the geography of knowledge have spawned a significant amount of theory, this theory indeed still is in dire need of empirical testing.

So, both theoretical frameworks remain unclear about the specific knowledge-related boundaries for highly skilled migration: on the one hand, the global city theoretical framework implicitly assumes and sometimes explicitly mentions the

flexibility of highly skilled cosmopolitans, while it also contains notions of place-specific knowledge as the driving force behind agglomeration in an era of mass communication. This leaves one wondering if their hypermobility truly means that these highly skilled professionals are entirely footloose.

On the other hand and in a similar vein, geographical views on the mobility of knowledge mention that certain types of knowledge are hard to transfer without a shared context, which often is assumed to be associated with geographical proximity. As of recent, however, scholars within this field are beginning to mention that besides simple geographical proximity, other types of proximity (institutional, occupational, etc.) need to be taken into account when studying knowledge migration: a constant institutional and/or occupational context on which these professionals can rely, even when changing locations, makes that the nature of their knowledge is still tacit while not hindering their mobility in a geographic sense (it should be noted, that this mobility can only be without loss of knowledge when the context is being held constant). However, a study testing this theoretical assumption, dealing with the knowledge of these migrants as well as their migration paths, has never been conducted to my knowledge and is frequently called for in the literature.

3. Research methodology and results

3.1. Description of the research method and population

In a modest attempt to at least partially fill up this empirical lacuna, I focused on the different adaptation processes two different professional groups of Indian knowledge workers hired by the Dutch division of Capgemini (a globally operating outsourcing, consultancy and ICT-services company) had experienced or were experiencing. These adaptation processes could be the result of a change of countries within the same company, a change of occupations within the same company, and/or a change of companies within the same country or geography. I interviewed them on their job experience, job content, migration history and the possible barriers they experienced on each matter. The Indian interview population consisted out of 17 men and 2 women, between the ages of 27 and 43. A Dutch manager, who has been involved with "the Indian connection" since the beginning, was interviewed as well. While every interviewee was asked about his or her own personal experiences, I asked the ones in more senior roles to give a general overview of the situation and how it developed, due to their experience in the IT field. By interviewing Indian employees in as many different positions in the company (managers/supervisors as well as programmers and consultants) as possible, I was able to shed some light on the aforementioned theories regarding global labor migration and knowledge, while preserving the reliability

of the data through triangulation. In order not to reveal to the interviewees the theories to be tested, I used terms like "common sense" and "shared frame of reference" when I referred to more tacit aspects of working in the ICT industry.

The aforementioned case leads to the following research question:

> To what extent does the situation of the Indian knowledge migrants within Capgemini adhere to theoretical assumptions made about the transferability of knowledge?

3.2. Knowledge and skills

Of course, an abstract concept such as knowledge, especially tacit knowledge, is hard to measure directly. However, using the theoretical assumptions on the geography of knowledge and the way in which it is used in research on skills, I aimed to measure or at least appropriate the degree in which these different kinds of knowledge manifest themselves in different levels of labor migration flexibility of highly skilled migrants: in the literature on skill formation, tacit knowledge is often affiliated with soft or interpersonal skills, and codified knowledge is seen as the basis for hard or technical skills. In the following example, one of the interviewees points at the connection between these soft skills and their tacit nature:

> [A person coming to an onsite location] will need to carry these [soft] skills. And I think it's very important, because many times... What I have seen in the past also, is that if there is a programming error, the customer will point it out in black and white and he will say that there are some issues with your program, etcetera. But the soft things jeopardize the relationship, because these programming errors can be fixed. This is a black-and-white situation; you can go back to the same customer and say 'mister customer, I fixed your problems'. But the soft things... A customer will come back and say that 'you know, I'm not getting a good feeling with your company'. And you tell him 'can you explain?' He'd say 'I can't, it's difficult'. […] So, these soft skills jeopardize the relationship more than hard skills.
> (I7)

Moreover, through conversations with my first contact at Capgemini and the first interviews, it soon became clear that, corresponding to this distinction between different skill types, there are two distinct career paths being followed within the research population. One of the career paths can be described as that of the "liaison officer", relying on soft skills: a person who is a middleman between the Dutch clients and the Indian software team and thus has to cope

with the cultural differences and possible misunderstandings he or she encounters, either as a sales person or as an onsite manager. The other is that of the "programmer", largely relying on hard skills: a person whose job is to program the desired software for the client after receiving instructions from the onsite manager. It should be noted, however, that these two career paths do not oppose each other, nor are they mutually exclusive: they can best be seen as idealtypes, as I have come across onsite managers for whom coding was still part of the job. I have also encountered some software programmers who had coordinating tasks delegated to them. This role convergence is not surprising when one realizes that a lot of the "liaison officers" started out as programmers. The formal education profiles of both groups seem to be very similar as well, so the different career orientations appear not to depend on the level of education one has reached. The "liaison officers" developed their own distinct skillset, acquired through learning-by-doing. This also hints at their usage of tacit knowledge: Polanyi (1966) already used the master-apprentice relationship to illustrate the non-formal character of transferring tacit knowledge.

Thus, I used the aforementioned occupational distinctions as instruments for identifying differences in knowledge use and the influence thereof on their migratory patterns, on which I will elaborate in the next few paragraphs.

3.3. Context and adaptation

The soft skills the interviewees report on often entail some kind of communicative proficiency that is vital for understanding the needs of the customer and translating these into workable IT-solutions. This type of skill is also associated with the ability to work in different and specific geographical areas and thus has to be partly renewed when entering a new geography:

> It always depends on how flexible you are with the culture of that geography or this country and yes, then some of the soft skills, again, you have to develop, because that depends on what kind of people you are dealing with and what the difference is in working with them, so definitely that part of soft skills you have to develop.
> (I19)

Some interviewees report on the adaptability to new environments and the development of context-specific skills as a skillset of its own:

> I could apply [these skills], but I would have to improvise considering the existing structure. So you can look at it as a constraint, but you can also look at it

as being able to adapt and being able to change their way of working as well, not overnight, but gradually.
(I11)

Interviewing them, several striking and intertwined differences arose between the Indians for whom interacting with local and Indian parties was an integral part of the job and those who were mainly doing technical work.
The strong focus on interaction with (potential) customers necessitates a greater sensitivity for local and/or company-specific cultural differences. This makes that the sales representatives as well as the onsite workers who are not only writing code report on an extensive process of adaptation. A frequently noted process of adjustment is described in the anecdotal reports on adaptation to the (business) etiquette in the Netherlands and previous countries they have worked in:

> I would also say that it doesn't vary by... country by country, but certainly, the way they work in the US is different, of course. In that market, you can't work the same as you work here in the Netherlands. So, that's different. The level of aggression, the level of result-orientation is much higher as a corporate culture in the US. In the Netherlands, you don't get fired for losing a deal. In the US, you do. So, that's a difference.
> (I5)

More specifically, these interviewees explicitly connect their specific roles to the amount of adaptation required:

> The description [of my job] is more or less the same [as in India], but my life… I see my life as a sales guy in India, in the US and in the Netherlands… It's totally different. My interaction with people, and the kind of things that are around their minds, and the way to deal with them is totally different.
> (I18)

The Indians in onsite managerial or sales roles report on an adaptation process to local and/or company-specific differences of 'a couple of months' (I7), two months (I12), six months (I11) or even five years 'learning the systems and processes' for a banking consultant (I9). Referring to his fellow countrymen who are for the most part developing software, one interviewee postulates:

> Most of the time, these people sit at the customer locations. So for example, if you're traveling from Capgemini the Netherlands to Capgemini Japan and you are still doing programming internally, your level of adjustment will probably be less. Because you are doing more or less the same thing. You will need to know

political dynamics etcetera. But if you're traveling from one customer to the other, it is a completely different ballgame altogether.
(I7)

Indeed, the programmers themselves 'didn't see much of a change' coming to the Netherlands (I10), experienced 'no hiccups' workwise (I3) or needed only '15 days to a month' to learn a new programming language (I2).
So, while the "liaison officers" experience an ongoing and lengthy adaptation process, due to changing surroundings and interaction with different individual customers, the "programmers" report on a less extensive adjustment, experiencing little changes contentwise.

3.4. Geographical proximity
The theories on tacit knowledge express a significant importance of geography: the implicitness and cultural and/or organizational dependency of this kind of knowledge makes it subject to geographical clustering, having face-to-face contact as virtually its only means of transfer. Again, the interviewees' findings are consistent with the assumptions made in the theoretical chapter; their dealing with context makes that the so-called "liaison officers" stress the importance of face-to-face contact and geographical proximity:

> Software is something... It requires a lot of interaction. Sometimes, customers themselves are not clear about their requirements. There are people who help in analyzing the problem of the customer; help the customers in defining their requirements thoroughly. There is a lot of work in the implementation that requires feedback from the customer and configuring is closer to the customer. And then, there are people required to gather the information, the way in which it is expected by India. Collect that information, send it across, facilitate communication. If India has any queries, take it to the customer. […] By definition, anything that requires a lot of interaction... if you do it from remote, then it will have a lot of overheads in communication; there is a good chance of missing out on something.
> (I13)

Consequently, when reflecting on their own situation, some of the "liaison officers" assume that geographical proximity is not as important for programmers:

> I could have continued [being a software expert], even being in India. Expert in those areas, that's... I don't think it would have been a problem. But in my current role, yes... that's where some of my big learnings came from.

(I5)

One of the few interviewees whose job is mainly programming agrees with this view out of first hand experience, alluding to the relative non-importance of physical proximity for his learning experience:

> Technically, I would say… If I would have been in India these three years, then I would have been at the same level as I am here. Technically, we do the same work.
> (I3)

The pivotal role face-to-face contact plays in some critical business processes and the need for geographical proximity that comes with it, makes that the extent to which these processes can be outsourced or offshored to other geographic areas is fairly limited. This is also recognized by the more experienced interviewees:

> When you need a lot of input from users, you need to acquire it through talking to them personally. In such a case, outsourcing is not very obvious.
> (I6, translated out of Dutch)

3.5. Other proximities
However, it could be that a solely geographical approach on proximity neglects the other ways in which the researched professionals deal with differences in context that possibly hamper their flexibility. As I suggested earlier, several scholars are interested in the way other forms of proximity (e.g. organizational) play a role in facilitating and limiting the mobility of transnational professionals. With this approach in the back of our minds, I asked my interviewees about any geographical, occupational or company transfer and to what extent he or she had to adapt to the changes. One interviewee, who was already working for Capgemini in India before he transferred to the Netherlands, recognizes the advantage of remaining within the same organizational setting when going abroad; he also states that there are different "cultures" to which you have to adjust in such a case:

> The principles of Capgemini are more or less the same for all the different geographies. The only thing is, like, you can say the local culture which is definitely different, that depends upon the people, because over here in the Netherlands, we follow Dutch culture and in India... that's definitely... it's a number of cultures within Capgemini. So, yes that's different.
> (I19)

One could suggest that his remaining "proximity" to the institutional context of Capgemini facilitated his transfer to an unfamiliar geography. Another interviewee adds to the notion of the constant context of the company the similarities between globally oriented companies vis-à-vis locally operating companies, adding another specific context to the realm of "proximities":

> If you are working in a local company, or a local customer... more of a pure Dutch customer, not a global customer... then [the specific way of working] does impact you. And then of course, the language, the culture and those things come into picture. But if you are working for [a globally operating Dutch companies], it doesn't matter, because they're global companies. So in that sense, it doesn't impact your contents.
> (I12)

The complementary and buffering effect these different "proximities" have on each other can also work the other way around; one Indian interviewee who changed to Capgemini a year ago but still works within the Netherlands, reports on his adaptation process in the following way:

> I was thinking that I would be productive on the first day, that I would join and be running, I'd be going to the customers. And I suddenly kept hitting these speedbreakers on a daily basis. And then I realized that it takes more time to adjust to a company, that it's not an overnight job. I was thinking that I will have my laptop and I will have this and that and those things happen but, you know, the physical hardware does not really enable you to adjust; it's the whole, you know, mindset behind it. So I think the adjustment is always company-specific.
> (I7)

Regarding his adaptation to local culture, he says:

> For me, the adjustment to the local culture was low. Because I was already in the Netherlands for the last five or six years, so I did not need to adjust to that. I already knew my relationship with the Dutch culture and how good or bad I am adjusted to that.
> (I7)

So, one could say that an already established "cultural proximity" to the Netherlands facilitated (or even compensated for parts of) the transfer to a different company. When questioned on the difficulties he encountered when adapting to a new working environment, an interviewee who also switched to Capgemini while already working in the Netherlands remarks:

> One of the advantages [was] that I was here in the Netherlands for two years before I joined Capgemini.
> (I18)

One could conclude from these quotes that there are several "proximities" that play a role in the adaptation to new surroundings – be it organizational or geographical. One interviewee integrates this into his analysis of "layers of culture", that loosely corresponds with the different forms of proximity I was aiming to uncover:

> I keep saying that there are three layers of culture. One is the local culture layer, which the company has. One is the global culture layer which the company has. And one is the country or geography layer. For example, [Dutch Company 1] was one of my big customers in a previous company. So we were working for [3 Dutch companies]. And they're all... Within the Netherlands, they're so close to each other, I mean... twenty kilometers, thirty, maybe sixty kilometers. And there's such a big culture difference between [these Dutch companies]. There's a huge culture difference between these labels of [Dutch company 1]. And then you realize that it's a Dutch company... [these Dutch companies are] not at all global, [they are] completely Dutch. But they still have so much culture differences.
> (I7)

So, while the customer companies he mentions are all located very close to each other, he still sees notable differences which he attributes to both company-specific cultural differences and the fact that some of these companies operate globally, while others are mainly focused towards the regional market.
The fact that some of these companies have a "global orientation" makes that there are similarities between these companies – the "global culture layer" I7 mentions – which enables the transfer from one globally operating company to another.
This means that, besides the geographic proximity I mentioned in the preceding section, the Indians who are "liaison officers" discerned at least three other interrelated "proximities" that play a role in the transfer from one area to another, be it geographical or not. First, they referred to the local cultural differences between India, the Netherlands and other countries where they have worked. Second, they stated that besides the local culture, there is also the specific culture of the company. Third, there seems to be an added dimension to the way in which the workplace culture comes to the fore: globally operating

companies appear to require the same mindset of its employees, while locally operating companies can differ very sharply from each other.

Judging by the case of the Indian employees at Capgemini, the recognition of different spheres of adjustment combined with the vast difference in the level of adjustment required for the two professional groups, coinciding with the different ways of learning and a corresponding difference in the need for proximity, hints at a difference in types of knowledge used by both groups. In the next chapter, I will elaborate on this by answering the main research question.

4. Conclusions, implications and limitations

4.1. Answering the research question

Looking at the main findings distilled out of the literature on the geography of knowledge, one finds that the tacit knowledge these individuals possess partly relies on the interpretative, geographically bounded context necessary to fully and adequately transfer this knowledge, which could hamper their perceived hypermobility. This at least leaves one wondering to what extent the geographic movement of these individuals is flexible – as presumed by the global city theoretical framework – and to what extent it is bounded by their inability to fully communicate this knowledge without its necessary (and place-bound) context – which is what scholars within the field of the geography of knowledge agree upon. The theory itself provides a possible answer: by interpreting proximity as not just geographical, but also as institutional, cultural or relational (e.g. when transferring to another geographic location within the same company, the constant corporate mindset – institutional proximity – makes that the context through which specialist knowledge needs to be interpreted, remains constant). By maintaining one or more other "proximities", one can be relatively flexible in a geographic sense without being hampered in the transfer and communication of his or her knowledge. Using the main findings on the geography of knowledge as guidelines, I found several patterns in the interview data.

First, when it comes to the dependence on context, interpreted as the degree to which a person experiences obstacles when transferring to a new cultural and/or business environment, another difference between both groups arises. Whereas the employees in a more "programming" role report on a relatively short work-related adaptation process, the "liaison officers" tend to need a little more time to familiarize with their new professional surroundings. The differences in the degree in which both groups report to rely on context also hints at a difference in knowledge: as I mentioned earlier, tacit knowledge tends to rely heavily on

context for its interpretation, while codified knowledge has a universal way of interpreting agreed upon.

Second, there also is a difference in reliance on face-to-face contact and its subsequent need for geographical proximity between both groups: the "liaison officers" say they rely heavily on this type of contact, whereas it is not regarded as an essential aspect of work by pure "programmers". The reliance on geographical proximity through the need for face-to-face interaction is congruent with the dependence on context I mentioned earlier and is seen as a prerequisite for an adequate transfer of tacit knowledge as well.

Third, the interviewees report on other, not necessarily geographical spheres in which the adaptation can take place: organizational or cultural. There has to be a certain "proximity" to each of these spheres in order for the transfer to go smoothly. If not, a process of gradual adaptation takes place. The more spheres are altered in the transfer (e.g. a transfer to both a new company and a new geography), the more extensive the adaptation process will be. The more recent literature on the geography of knowledge indeed suggests that the proximity associated with tacit knowledge is not only to be explained in terms of geography; the authors suggest that there are other forms, such as institutional or relational proximity that play a facilitating or limiting role when it comes to the transferability of context-dependant knowledge. The most interesting finding is perhaps that a worldwide operating advanced producer service firm like Capgemini offers a possibility for global mobility trough its constant context, allowing easy development, distribution and utilization of tacit knowledge.

4.2. Limitations of the research

While limiting the research to the company of Capgemini makes sure that all respondents share the same company context – which facilitates the comparison of the individual interviewees – it hampers the external validity of this research. Another disadvantage of this research, as I mentioned before, is that it does not measure knowledge directly, and therefore only can assume that the observed differences can be ascribed to differences in knowledge. Another problem is the bias that could occur when an interviewee talks about his or her own job and/or career: it could well be that some interviewees omitted negative aspects of their job and or career moves, as well as exaggeration of the importance of their job.

4.3. Implications of this research

Summarizing the aforementioned section, the differences in context-dependency, reliance on geographical proximity and the importance of other, non-geographical forms of proximity seem to adhere to the idealtypical distinction between tacit and codified knowledge. I hope to have contributed to existing

work on the geography of knowledge in three ways. First, this research has answered the call for more research on the role migration plays in knowledge work transactions.

Second, it has given some empirical backup for the suggestion that there are many, not necessarily geographical, forms of proximity that play a role in the transfer of tacit knowledge.

Third and most important, the expansion of the concept of proximity to realms outside of geography might bring theories on knowledge and theories on Global or World City formation closer together: the recognition and internalization of a "multinational corporate culture" as mentioned by one of my interviewees could well provide an omnipresent context which facilitates the intercompany and international mobility of the professional elite, which is a pivotal process for Global City formation: this could provide the highly skilled elite with a possibility of high geographical mobility, while members of this elite are still embedded in a context that allows for the correct transfer and interpretation of their knowledge. What is especially important is the role of the constant context an internationally operating company can provide.

Fourth, when knowledge associated with innovation is no longer seen as primarily local, this could influence the debate on the knowledge economy, which until now has largely revolved around the role of local clusters, companies and government.

References

Bathelt, H., Malmberg, A., & Maskell, P. (2004). Clusters and Knowledge: Local Buzz, Global Pipelines and the Process of Knowledge Creation. *Progress in Human Geography, 28*(1), 31-56.

Bozkurt, Ö. (2006). Wired for Work: Highly Skilled Employment and Global Mobility in Mobile Telecommunications Multinationals. In M.P. Smith, & A. Favell (Eds.), *The Human Face of Global Mobility: International Highly Skilled Migration in Europe, North America and the Asia-Pacific* (pp. 211-246). New Brunswick, New Jersey: Transaction Publishers.

Bunnell, T.G., & Coe, N.M. (2001). Spaces and Scales of Innovation. *Progress in Human Geography, 25*(4), 569-589.

Cook, G.A.S., Pandit, N.R., Beaverstock, J.V., Taylor, P.J., & Pain, K. (2007). The Role of Location in Knowledge Creation and Diffusion: Evidence of Centripetal

and Centrifugal Forces in the City of London Financial Services Agglomeration. *Environment and Planning A, 39*(6), 1325-1345.

Feldman, M.P. (2000). Location and Innovation: The New Economic Geography of Innovation, Spillovers, and Agglomeration. In G.L. Clark, M.P. Feldman & M.S. Gertler (Eds.), *The Oxford Handbook of Economic Geography* (pp. 373-394). Oxford: Oxford University Press.

Friedmann, J. (1986). The World City Hypothesis. *Development and Change, 17*(1), 69-83.

Gertler, M.S. (2003). Tacit Knowledge and the Economic Geography of Context, or the Undefinable Tacitness of Being (There). *Journal of Economic Geography, 3*(1), 75-99.

Howells, J.R.L. (2000). Knowledge, Innovation and Location. In J.R. Bryson, P.W. Daniels, N. Henry & J. Pollard (Eds.), *Knowledge, Space, Economy* (pp. 50-62). London: Routledge.

Howells, J.R.L. (2002). Tacit Knowledge, Innovation and Economic Geography. *Urban Studies, 39*(5-6), 871-884.

Polanyi, M. (1966). *The Tacit Dimension*. New York: Anchor Books.

Roberts, J. (2001). The Drive to Codify: Implications for the Knowledge-based Economy. *Prometheus, 19*(2), 99-116.

Sassen, S. (1988). *The Mobility of Labor and Capital*. Cambridge: Cambridge University Press.

Sassen, S. (2001). *The Global City: New York, London, Tokyo* (second ed.). New Jersey: Princeton University Press.

Sassen, S. (2004 [2000]). Agglomeration in the Digital Era? In S. Graham (Ed.), *The Cybercities Reader* (pp. 195-198). London/New York: Routledge.

Sassen, S. (2006a). *Cities in a World Economy* (Third ed.). Thousand Oaks: Pine Forge Press.

Sassen, S. (2006b). *Territory, Authority, Rights: From Medieval to Global Assemblages*. New Jersey: Princeton University Press.

Sassen-Koob, S. (1986). New York City: Economic Restructuring and Immigration. *Development and Change, 17*(1), 85-119.

Storper, M. (1997). *The Regional World: Territorial Development in a Global Economy*. New York: The Guilford Press.

Storper, M., & Venables, A.J. (2004). Buzz: Face-to-face Contact and the Urban Economy. *Journal of Economic Geography, 4*(4), 351-370.

Straubhaar, T., & Wolter, A. (1997). Globalisation, Internal Labour Markets and the Migration of the Highly Skilled. *Intereconomics, 32*(4), 174-180.

Trippl, M., Tödtling, F., & Lengauer, L. (2009). Knowledge Sourcing Beyond Buzz and Pipelines: Evidence from the Vienna Software Sector. *Economic Geography, 85*(4), 443-462.

Van der Waal, J. (2010). *Unraveling the Global City Debate: Economic Inequality and Ethnocentrism in Contemporary Dutch Cities.* (PhD thesis, Erasmus University Rotterdam).

Weterings, A., & Boschma, R. (2006). The Impact of Geography on the Innovative Productivity of Software Firms in the Netherlands. In P. Cooke & A. Piccaluga (Eds.), *Regional Development in the Knowledge Economy* (pp. 63-83). Oxon/New York: Routledge.

Williams, A.M. (2006). Lost In Translation? International Migration, Learning and Knowledge. *Progress in Human Geography, 30*(5), 588-607.

Williams, A.M. (2007). International Labour Migration and Tacit Knowledge Transactions: A Multi-Level Perspective. *Global Networks, 7*(1), 29-50.