Proximity and power in collaborative innovation projects

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Abstract

The proximity literature has so far paid little attention to power relations in collaborative innovation projects. This paper draws on contributions from international business to examine if power constellations between collaborators in innovation projects influence the effects of proximity. An analysis of two cases of collaborations between headquarters and subsidiaries of multinational companies highlights that specific power constellations indeed influence the effects of proximity. While some forms of proximity allow subsidiary-specific capabilities to diffuse throughout the organisation and pose a threat to the powerful subsidiary, the weaker subsidiary considers proximity as a possibility to learn from the headquarters.

Keywords

1. Introduction

Not only geographical proximity, but also organisational, institutional, cognitive and social proximity influence learning processes between organisational entities. This is widely discussed and acknowledged in the economic geography literature (e.g. Regional Studies, 2015). Since Boschma's (2005) seminal paper, research has focused on two effects of proximity: on the positive side, proximity facilitates interaction and reduces coordination costs; on the negative side, proximity may reduce the potential gains from collaborating due to a lack of complementarity leading to lock-in. Following this insight, empirical studies have analysed the effects of collaborations characterised by different degrees and forms of proximity (e.g. Broekel & Boschma, 2012).

Most recently, contributions have highlighted that the importance of different types of proximity varies according to firm knowledge bases, industry cycles and collaboration objectives (Balland, de Vaan, & Boschma, 2013; Hansen, 2014; Mattes, 2012). This underlines that a given degree of proximity is neither beneficial nor detrimental to a collaborator *per se*, but that other factors characterising the relationship between the collaborators mediate the effect. This paper follows this line of research by focusing on the power relation between the collaborators and its mediating impact on proximity effects.

This question, i.e. how the effects of proximity for learning depend on the power relation between the collaborators, has so far not been examined by the proximity literature (cf. however Levy & Talbot, 2015). However, the question is crucial as the relationships between entities that engage in collaborative innovation and learning processes are seldom completely reciprocal and instead regularly governed by the particular power constellations of the participants (hierarchy, dependency etc.). Thus, this paper aims to examine in an explorative study if power constellations between collaborators in innovation projects influence the

effects of proximity. It thereby combines insights from the international business literature with the outlined debate on proximities.

The field of international business regards power as a dynamic and complicated relationship between organisational entities (Crozier & Friedberg, 1979). In the context of proximities, it is particularly interesting to look at innovation projects in multinational companies (MNC) as these projects cope with challenges of learning in a highly complex context, and collaborations between different parts of an MNC are significantly influenced by power constellation between the collaborators (Andersson, Forsgren, & Holm, 2007). More specifically, power constellations significantly influence the interests that subsidiaries seek to advance in collaborations (Dörrenbächer & Gammelgaard, 2011).

This paper looks at power at the organisational (not individual) level and focuses on collaborative innovation projects between headquarters (HQ) and subsidiaries. It is recognised that subsidiaries are not simply *'submissive affiliates'* (Taggart, 1999, p. 121) of the HQ, but rather entities which pursue and may hold significant power vis-à-vis the HQ (Andersson et al., 2007; Ghoshal & Bartlett, 1990; Prahalad & Doz, 1981). In the analysis, the paper examines if variations in power constellations between subsidiaries and HQs influence the effects of proximity. Empirically, it compares two cases of collaborative innovation projects between two German MNCs and their foreign subsidiaries: in one case the subsidiary holds very little power vis-à-vis the HQ, in the other case it holds considerable power.

The findings show that the effect of proximity is indeed contingent on the power constellation. As long as a subsidiary holds little power against the HQ, proximity is beneficial as it facilitates learning. However, if the subsidiary holds a more powerful position in the corporation, a certain degree of distance underlines its strategic position. However, a

certain degree of proximity remains important also for these constellations. Moreover, different types of proximity have different effects.

The paper contributes by introducing power elements into the proximity debate. It therefore proceeds in the following way: initially, an overview on the debates on proximity types and power in headquarters-subsidiary relations is provided. The paper then analyses the interrelation between proximity and power constellations in two case studies of German MNCs and their foreign subsidiaries. The cases highlight that power mediates the influence of proximity on collaboration and, accordingly, that changing power relations alter the effects of proximity for the collaborators. After discussing these effects, the paper concludes.

2. State of the art: proximity and power

2.1. Proximity and innovation

Research on collaborative learning and innovation processes increasingly draws on a multidimensional conceptualisation of proximity, which provides a framework for analysing the importance of geographical proximity *vis-à-vis* other coordination mechanisms. Several proximity typologies have been developed (e.g. Blanc & Sierra, 1999), but Boschma's (2005) typology has been widely adopted. Boschma (2005) suggests that proximity along geographical (colocation in space), social (strong social ties), organisational (common ownership), cognitive (similarity in knowledge bases) and institutional (shared formal and informal institutions) dimensions can all function as coordination mechanisms. This questions the role of geography proximity for learning processes. Without disregarding that geographical proximity may facilitate other forms of proximity, Boschma (2005) emphasises the possibility of substituting non-spatial proximity for geographical proximity. Empirically,

this has been verified for social, organisational and cognitive proximity (Hansen, 2015). Also, temporary geographical proximity may in some cases suffice to facilitate interaction between dispersed collaborators (Torre, 2008) through relatively frequent encounters at e.g. meetings, trade fairs and conferences (Bathelt & Henn, 2014; Maskell, Bathelt, & Malmberg, 2006). This may allow for distanciated collaborations and highlight how geographically distant partners may play crucial roles in innovation processes (Amin & Cohendet, 2004; Gertler, 2008).

An additional contribution of the proximity framework is to highlight the danger of too much proximity. While the five types of proximity reduce coordination costs in collaborations, too much proximity may lead to situations of lock-in due to a lack of openness. Thus, the notion of the proximity paradox (Boschma & Frenken, 2010) underlines that partnerships with low coordination costs will often not stimulate learning. Empirically, this trade-off has been found for cognitive and organisational proximity (Broekel & Boschma, 2012).

Several empirical studies have analysed the importance of different types of proximity for the formation and outcomes of collaborations (Balland, 2012; Broekel & Boschma, 2012; Rekers & Hansen, 2015). Recently, contributions have also specified how the importance of different types of proximity varies according to firm knowledge bases, industry cycles and collaboration objectives (Balland et al., 2013; Hansen, 2014; Mattes, 2012). It has been acknowledged in the proximity literature by Levy and Talbot (2015) that collaborative innovation processes are highly sensitive to opportunistic behaviour and may be dominated by, e.g. large industrial actors and, thus, characterised by unequal power relations. However, it is yet to be analysed how power constellations between collaborators in innovation projects actually influence the effects of proximity.

In this paper, this research gap is addressed by analysing the interplay between power and proximity, focusing on learning arising from collaborative innovation processes in headquarter-subsidiary relations. The reasons for focusing on intra-firm relations is that they are particularly important for firm innovativeness (McCann & Simonen, 2005) and limited attention has been devoted to MNCs in the proximity literature (Stensheim, 2012 is the exception). The following section summarises the work on power in headquarter-subsidiary relations from the international business literature.

2.2. Power in headquarters-subsidiary relations

The concept of power is difficult to grasp. Part of the reason is that power is not an attribute of actors, but of relations between actors (Crozier & Friedberg, 1979). Power is hence set in the leeway of each of the parties, or, put the other way around, the stronger partner has the possibility to limit the other one's leeway. This paper focuses on power at the organisational level, i.e. between organisational entities and not between individuals. It hence draws upon the debate on headquarter-subsidiary relations. This relationship provides a good example of where different degrees of proximity matter for the collaboration, as already Bartlett and Ghoshal (Bartlett & Ghoshal, 1999; Ghoshal & Bartlett, 1990) point out when outlining the tension between globalisation and localisation advantages.[i]

The perspective that subsidiaries are merely *'submissive affiliates'* (Taggart, 1999, p. 121) of the HQ as outlined by Vernon (1966) has been regarded as dated for a long time (Taggart 1999). Instead, subsidiaries can assume multiple roles in the corporate network and are potentially powerful entities, even in relation to their HQ (Prahalad & Doz, 1981). Power is thereby defined as the right to take strategic decisions and to define rules for the subsidiary and the MNC as a whole (Clegg, Courpasson, & Phillips, 2006; Pfeffer & Lammerding, 1981). The possible sources of subsidiary power are manifold, including privileged access to

valuable resources (labour skills, natural resources) or markets (Kuemmerle, 1997). Contributions highlight the importance of the subsidiaries' role in critical corporate networks, i.e. by controlling access to key customers, suppliers or governments (Andersson et al., 2007; Doz & Prahalad, 1991; Forsgren, Holm, & Johanson, 2007). Going beyond these external sources of power, the internal dimension is also crucial (Garcia-Pont, Canales, & Noboa, 2009): first of all, this relates to the way in which the MNC as a whole is set up and the formal authority and hierarchical position that are granted for the subsidiary (Ferner & Edwards, 1995). Moreover, depending on the skills of the subsidiary in bargaining its internal position, its power can vary significantly (Andersson et al., 2007). Particularly if it controls tacit knowledge and positions this asset well in corporate bargaining processes, the power of a subsidiary is enhanced (Bouquet & Birkinshaw, 2008).

Empirical research underlines the importance of knowledge and capabilities for determining the subsidiary's power position (Andersson et al., 2007; Forsgren, Pedersen, & Foss, 1999; Mudambi & Navarra, 2004). Taggart and Hood (1999) find that complexity of R&D activities is the only factor with consistently significant positive impacts on subsidiary autonomy. While this does not imply that localised networks are without importance, the effect is indirect through capability-building in subsidiaries (Andersson et al., 2007; Forsgren et al., 1999). Thus, specific subsidiary knowledge – and particularly *tacit* knowledge – which is important for the MNC as a whole, serves as the critical determinant of power (Mudambi & Navarra, 2004; Rugman & Verbeke, 2001).

In conclusion, subsidiaries are particularly powerful if they control strategically important assets, above all knowledge. Building upon this argument, the following empirical analysis draws the debates on proximity and power together in order to analyse if variations in power constellations between subsidiaries and HQs influence the effects of proximity.

3. Methodology

The exploratory empirical analysis draws upon cases conducted in the framework of a larger research project.[ii] The methods followed a qualitative case-study design inspired by (Yin, 2013). The analysed cases focus on the two sectors medical technology and automobile.[iii] They represent cases which involve one foreign subsidiary that is supposed to collaborate closely with the German HQ in a specific innovation process and are hence suitable to examine how variation in power constellations (cf. Appendix Table A1) between collaborators in innovation projects influence the effects of proximity. Even though the cases differ in the various respects, they are stable in regard to the following, most relevant factors: collaboration takes place in a geographically dispersed setting within a single organisation; the projects are innovation projects and require intense cooperation; and the HQs delegate tasks, hold relevant knowledge, and are generally willing to convey it to the subsidiaries.

The interviewees are all participants in the investigated innovation projects and represent both HQ and subsidiary. Due to the topic's sensitivity, anonymity was granted to interviewees and the firms they represent. Interviews covered all relevant functional arenas, i.e. research, development, production, quality control and marketing (Hage & Hollingsworth, 2000). The interviewees encompass leading managers, but primarily staff operationally engaged in the projects. As most interviewees knew each other and many performed several roles, a good overview of the innovation projects and the learning that resulted from them could be achieved.

The research team conducted 24 narrative expert interviews following an open interview guideline. The interviews lasted between one and three hours and were recorded, transcribed

and coded with the help of a qualitative research analysis software (MAXQDA). Several researchers analysed the data separately and discussed results to mutually verify interpretations. Coding categories were first defined according to the main interests of the project involving fields such as communication structure, distribution of power, proximity types, trust, interaction, distribution of tasks and responsibilities, decision-taking processes and integration in networks. The developed sub-codes for power and proximity follow the operationalisation of the concepts (see below). Based on in-vivo coding, these categories were then further refined, adjusted and supplemented based on new insights emerging during the analysis (e.g. the role of context factors and boundary objects), moving forward and backward between theory and empirics (Langley, 1999; Yin, 2013). Coding and data analysis hence go hand in hand, which allows focusing on expected, but also unexpected interesting empirical findings. Eisenhardt (1989, p. 540) describes this as *"becom(ing) intimately familiar with each case"*. Additionally to the interviews, comprehensive notes and a memo about the most important aspects during visits at the company locations were also considered in this analysis. Moreover, documentation material provided by the companies and obtained from public websites served as further sources of data. All relevant aspects were structured into comprehensive case studies.

Drawing upon two cases from different sectors, the paper aims at theoretical rather than statistical generalisation of the results (Yin, 2013): it derives patterns on the basis of the available material and uses these to illustrate how the different forms of proximity interrelate with power.

Empirically, the proximity dimensions are operationalised as follows[iv]: the geographical dimension reflects the HQ-subsidiary distance; the organisational dimension depends on the degree of common ownership; the institutional dimension is given by the degree of similarity

in work cultures between the HQ and subsidiary; the social dimension reflects the level of personal interaction between the employees engaged in the HQ-subsidiary collaboration; and, finally, the cognitive dimension is given by the degree to which the employees share expertise and knowledge base. As suggested by Boschma (2005), the social and cognitive dimensions are thereby operationalised at the micro-level, between the individuals who collaborate in the projects (Grabher, 2002; Hansen, 2012).

Regarding power, Mudambi and Navarra (2004, p. 395) define this as *'the subsidiary's influence on the MNC's global buyer–supplier relationships, the extent of its authority for senior management hiring, its responsibilities for global strategy and marketing, the proportion of the corporate officers of the parent MNC who are current or former executives of the UK subsidiary, and (the absence of) senior management from the parent country in the UK operation.'* Finally, as Mudambi and Navarra (2004) outline, if the subsidiary controls knowledge assets used by other units (i.e. in the empirical cases by the HQ), the subsidiary can be considered to be powerful. The operationalisation of power is in line with this reasoning. This means that the paper mainly looks for chances of learning and at knowledge assets to highlight the evolution of power.

4. Power in the HQ-subsidiary relations of the empirical cases

The first case (IndiaAuto) concerns a German automobile company and its Indian subsidiary. The project ran 2008-2010 and involved nine persons. While the investigated software development initially takes place only in the German HQ with the help of external, regional partners, these regional partners are later considered to be too expensive and their work is delegated to the Indian subsidiary. The core problem of this constellation is that the Indian

subsidiary does not have access to all relevant context information and can therefore not competently perform the tasks defined by the HQ. The subsidiary thereby holds a weak power position: its knowledge assets are not systematically used by the HQ or other subsidiaries (Mudambi & Navarra, 2004), the subsidiary plays almost no role for the corporate global strategy; it is neither able nor allowed to take independent decisions; an expat manager heads the local team; and the tasks to be performed are defined by the HQ. The subsidiary is fully owned by the German HQ and its R&D unit mainly serves as an internal contractor (*'extended team'*, interview citation, India) in terms of capacity and competences for the German HQ.

The second investigated case (ChinaTech) concerns the development of a complex technological device in cooperation between the German HQ and its Chinese subsidiary. The product had been developed in the HQ before and was handed over to China for further refinements, regarding the product's design and software features as well as adaptations due to the production and supplier conditions in China. The project ran 2005-2007. During this period, it is the main project at the location, and about 80 persons in the Chinese unit work on it. The subsidiary can be considered powerful as it holds several strategically important assets upon which the HQ draws (Mudambi & Navarra, 2004), above all the access to and knowledge of the Chinese market and the ability to re-build a German product in a very efficient and cost-saving manner. While the subsidiary cannot take major strategic decisions itself, it is responsible of operative decisions, the management board mainly consists of local staff and the subsidiary plays a crucial role in the corporate global strategy (cf. also Mattes & Späth, 2013).

5. Analysis

The paper now proceeds to the empirical analysis of the interrelation between power and proximity. It thereby asks how the effects of proximity for learning depend on the power relation between the collaborators. The following sections present evidence for each type of proximity.

5.1. Geographical proximity

Both investigated projects are conducted in a dispersed constellation, i.e. without geographical proximity. In IndiaAuto, the HQ is set in Germany and the weak subsidiary is located in India. The large geographical distance hampers learning (and hence empowerment, Mudambi & Navarra, 2004) for the Indian subsidiary due to the more complicated communication and the time difference. Both aspects are dealt with in a pragmatic manner: video conferences, telephone calls, e-mails etc. are meant to substitute face-to-face meetings; and non-parallel working hours are reduced as the Germans start working earlier and the Indians work later.

Contrary to the problems described for the distant German-Indian collaboration, the initial project set-up – the German HQ and close-by external German partners – shows how a geographically close setting improves communication and helps getting to know the relevant context information. In the distant communication between HQ and the Indian subsidiary, this highly relevant information largely gets lost and more complex tasks that would increase the subsidiary's strategic bargaining power are not transferred to India.

'For a long time, the external team [in the HQ region] had taken care of another big system, at least for 6 or 7 years. (…) That means that our direct contact persons are actually the [regional] external partners, simply because of spatial reasons and because we have known each other from this collaboration for 4 or 5 years. And the Indian team

was only meant to do preliminary work. And then the economic crisis massively arrived in mid-2009, so we couldn't guarantee the funding for the externals, and so the Indian team basically had to take over the role that the external team had before.' (IndiaAuto, HQ)

In the ChinaTech case, the more powerful distant subsidiary still learns from the HQ and uses its newly acquired knowledge to improve its power position in the corporation. Temporary proximity is crucial for the subsidiary and hence also in the interest of the HQ as long as it views capability building in the subsidiary as a strategic priority. This temporary proximity is achieved via exchange programmes between China and Germany:

'And we also set up these exchange programs. That means we definitely send people to [HQ] and so they work together with [HQ] colleagues, so they know everything and transfer everything. (…) We also have these colleagues from the [HQ] site to come over to [the subsidiary]. For some it's for business trips one week or two weeks, and for some it's up to two to six months. We also have the long-term delegates, which come for three years from [HQ].' (ChinaTech, subsidiary)

However, as the Chinese subsidiary is more powerful than the Indian one, the geographical distance is not as critical in the Chinese case. Local Chinese management has been established, the Chinese employees know their tasks and work more independently. The large geographical distance in fact improves the subsidiary's internal leeway for enacting micro-political bargaining and structural resources (Dörrenbächer & Gammelgaard, 2011). For example, the subsidiary can use its specific contacts to the Chinese market and determine suppliers for the developed product without major interference of the HQ. Nonetheless, the Chinese team agrees with the HQ that a certain extent of temporary proximity is always important.

'I think with the improvement of the contents of the team here, we might need less and less long-term delegates, but we definitely need to have short-term delegates from each side. I think it's very important to keep the connection.' (ChinaTech, subsidiary)

Similarly, another interviewee describes how temporary proximity allows for *'sufficient communication'* (ChinaTech, subsidiary), highlighting the advantage of the current situation with neither too much nor complete absence of (temporary) geographical proximity.

In conclusion, geographical proximity facilitates learning (and allows gaining power through this knowledge (Mudambi & Navarra, 2004)). In the internationally dispersed set-up, temporary geographical proximity is an important substitute. This can be achieved via regular face-to-face meetings between the collaborators, but also via expat programmes and the mutual transfer of personnel. Thus, some temporary proximity is still needed; however, geographical distance may also improve the bargaining power of already powerful subsidiaries. In this case, temporary geographical proximity is sufficient as it allows the subsidiary to maintain its relevance within the MNC (Rugman & Verbeke, 2001).

5.2. Social proximity

Concerning social proximity, the IndiaAuto case (subsidiary with little power) displays a lack of social ties between the Indian workers and the German team. Strong social ties are only established between the German team and the German expatriate who informally heads the Indian team in the subsidiary, and between the Indian team members. The personal ties facilitate asking questions and daring to admit knowledge gaps, even in hierarchically unbalanced relationships. While social proximity between the German expatriate and the Indian engineers facilitates communication within the subsidiary, the lack of direct social ties

between the Indian engineers and the HQ hampers learning from the HQ. A leading engineer in India explains how social ties to colleagues facilitate direct communication:

'It's easier to have further interaction with the person, just once you have met the person. So, that's what I'm finding. Even with respect to the requirements, with respect to what the work we are getting, even it's easier to understand now and even we can ask questions much more comfortably. So, that is the difference I can find. (…) Otherwise you'll be like [only] thinking […] the person is busy, because we don't know what kind of person he is, maybe he'll find it very much like, ok, fine, why are you disturbing me at this point of time. But I know he is not like [that …]. Now other thing is you can at least talk and you can have a certain level of connection and comfortability with the person.' (IndiaAuto, subsidiary)

In contrast, the more powerful ChinaTech unit displays strong social ties to the German team. These ties emerge via a buddy programme, i.e. each Chinese worker has an exact German counterpart with whom (s)he is constantly in touch. The constant exchange, shared responsibilities, frequent face-to-face meetings and social events facilitate the creation of social proximity and, in turn, learning (Nilsson & Mattes, 2015). Social proximity is thereby not regarded as a danger by the subsidiary. Instead, it seems to be beneficial also for a powerful unit.

'Maybe I think they should set up the first call or just visit each other. It always helps. We try to bring all the people at least once to their counter partner face to face.' (ChinaTech, subsidiary)

Summarising, social proximity is beneficial for subsidiary learning and empowering, and the HQ similarly benefits from good personal relationships to the subsidiary.

'And so I did have the opportunity to meet him for a longer period than just for a couple of days on a business trip, and because of that we also got along quite well, not in the beginning, but now in the ending. And well, that's important. In a certain way, you have to be chummy, it has to work. If you don't get along personally, I can imagine that it gets difficult.' (ChinaTech, HQ)

Thus, the high social proximity is not a problem for the Chinese subsidiary, even though it also facilitates knowledge flows from the subsidiary to the HQ, which could potentially threaten the subsidiary's bargaining power.

5.3. Organisational proximity[v]

In regard to organisational proximity, in the IndiaAuto case (subsidiary with little power), the common ownership clearly facilitates knowledge transfer: as all employees belong to the same organisation, they are allowed to share their knowledge. However, despite official rules, individuals from the HQ are often unwilling to share relevant knowledge with their Indian colleagues, not accepting them as qualified and competent partners. This highlights the importance of cognitive proximity (see below) and implies that while common ownership facilitates knowledge transfer it does not guarantee that it really takes place. In short, the German HQ aims at controlling the Indian subsidiary, but not at empowering it. The following quote illustrates this:

'At the beginning, there was this term, "extended team". (…) I think, probably, the idea was that we also work like that, on equal footing, somehow. But I think we are on quite a distance from that, meaning that we still have to tell them [the Indian team] quite exactly what to do, what we want and so on and we also have to monitor that accordingly. Thus, I do think that there will be a clear division of labour, also in the future. (IndiaAuto, HQ)

In this sense, the HQ regards regular communication with the Indian team as a means of control. It thereby loses its focus on capability building in the Indian subsidiary and, thus, does not contribute to the internal power of the subsidiary.

The ChinaTech case (more powerful subsidiary) also displays common ownership. Based on the buddy system mentioned before, the German team is co-responsible for the work of the Chinese team. This constellation is a powerful mechanism of control and provides a framework in which learning takes place almost automatically. In this case, common ownership does indeed foster learning.

'So we learned really a lot because we are [ChinaTech] company and we are part of [ChinaTech] family, so we have to set up the same quality standard and the same process with [ChinaTech] headquarter, because it doesn't matter 'Made in China' or 'Made in Germany', 'Made in the States', they are 'Made by [ChinaTech]. So in this case, so we set up the same process and by all the experience we have for the project phase we do learn a lot. From the very beginning we are fresh then to really becoming a [ChinaTech] company.' [ChinaTech, subsidiary]

However, the more powerful the Chinese subsidiary gets, the more this buddy system poses a threat to the subsidiary. The social aspects of the system lose importance, and it turns into a means of constant surveillance that limits the subsidiary's autonomy and endangers its strategic bargaining power. For the HQ, in turn, it remains an important means of control (cf. also Levy & Talbot, 2015) suitable to keep the subsidiary's power within manageable limits: based on the obtained insider information that acts as a warning system, the HQ can hold back necessary competences, strategically important projects and even revise autonomy decisions. The following quote outlines how control mechanisms are inherent in common goal-setting.

'... That means, of course, that the targets need to be very transparent in [China] and that they are known to my people. Otherwise we can't control that.' [ChinaTech, HQ]

In summary, common ownership smoothens learning processes between HQ and subsidiaries. However, while it is a central prerequisite for sharing insider information, it cannot guarantee that learning does factually take place. Moreover, the free circulation of knowledge resulting from common ownership is beneficial for subsidiaries in a strategically weak position, but poses a threat to more powerful subsidiaries; and it serves as a beneficial and close control mechanism for the HQ.

In this dimension, the role power plays could also be traced back to differences between the two analysed sectors. Medical technology is a high tech sector, whereas the automobile industry can be classified as medium-high tech (OECD, 2005). Very established patterns in the more traditional automobile sector could hence also explain the protective attitude maintained by the German HQ in that sector; whereas the more dynamic sector structure in medical technology might foster a more learning-oriented constellation as in the ChinaTech case. However, it can also be observed that the relation between organisational proximity and learning changes in the course of the ChinaTech project. Thus, sectorial factors cannot be the main explicatory variable for the different empirical results in the two sectors.

5.4. Cognitive proximity

Turning to cognitive proximity, differences in knowledge bases can be problematic for subsidiaries with little power. The IndiaAuto case illustrates this: HQ and subsidiary have very different knowledge bases, which considerably complicates the relationship. The HQ expects the subsidiary to do things it is not competent for, i.e. one cannot really judge the other's competences. The subsidiary cannot fulfil these tasks and is hence regarded as a bad

cooperation partner – even though it was not the right partner for that specific task in the first place. The control of specific knowledge the subsidiary holds hence cannot be transformed into power as it lies outside the relevance of the HQ's expectations, i.e. turning knowledge into power requires a certain degree of cognitive proximity. The disparate and distant knowledge bases of HQ and subsidiary hence hamper learning. The following quote highlights the resulting ignorance of each other's competence:

'We don't know what those people are doing (…). At least I don't know' (IndiaAuto, subsidiary).

In conclusion, the lack of shared knowledge between the Indian engineers and the employees in the German HQ is an important barrier to subsidiary learning and empowering (Mudambi & Navarra, 2004). The reason for this is pointedly outlined by Criscuolo and Narula (2007, p. 6) who claim that *'knowledge sharing requires that the sender and receiver have a common set of prior knowledge'*.

There are nonetheless some exceptions to the generally high cognitive distance. The following quote illustrates how a joint educational background facilitates common understanding between a German employee and the German expatriate in the Indian subsidiary:

'Just as an example: [The German expat in India] comes from the same university as I do. He studied IT there, I studied maths and IT, we almost had the same education. (…) If I talk of something, he more or less has the same understanding of what I talk about. The Indian education is different, as I conceive it.' (IndiaAuto, HQ)

In the ChinaTech case, for a more powerful subsidiary, the impact of cognitive proximity gets more difficult to assess. On the one hand, a certain amount of conjoint knowledge is still necessary to facilitate knowledge sharing. Cognitive proximity makes it easier to judge the

other's expertise, which is an important asset for both HQ and subsidiary. On the other hand, cognitive proximity can also pose a threat for the learning opportunities of the subsidiary. Even though the strategic aim is to empower the subsidiary further, the German team fears they may be losing their jobs and thus starts holding back knowledge relevant for the Chinese team – with the result that the subsidiary's power cannot further increase. The increase in knowledge is understood as a (possibly unwanted) improvement of the internal strategic power position. This tendency limits the subsidiary's learning potential.

> *'You often notice that people are naturally very afraid of losing their jobs here, and within the organisation we often really block ourselves because of this. Some people here don't want to pass on their knowledge because they are worried about losing their job.' [ChinaTech, HQ]*

Concluding, big differences in knowledge bases reduce learning chances for less powerful subsidiaries as the HQ is not able to properly estimate which kind of expertise the subsidiary holds. Similarly, very similar knowledge bases can create a hostile environment which hampers the learning progress of more powerful subsidiaries.

5.5. Institutional proximity

Finally, the IndiaAuto case illustrates how a lack of institutional proximity, i.e. different institutional environments, hampers learning for a weak subsidiary. Differences in language, but also cultural values, make it hard for the participants from both HQ and subsidiary to work together and exceed the strategic advantage of the subsidiary to have specialised in-depth knowledge on the Indian environment. HQ and subsidiary do not manage to grant each other insights into the relevant context information as they do not understand properly what

the other one needs. This implies that institutional distance endangers learning via more complicated communication modes.

'What we found (…) – and this is probably also true for others who collaborate interculturally, in dispersed teams: What I noticed is that we Indians communicate very implicitly. (…) Germans are much more verbal, much more explicit and that, that is indeed obvious in the communication within the teams that you often do not say what you mean, but you implicitly hint at what you mean (…). And the Indians are very good at that. If someone says, for example: "Yes, but…", then I know, this is not a "yes", this is a "no". I, as an Indian manager, know that (…). A German colleague hears the "yes" and yes means yes. This is a very simple example. (…) And this does indeed lead to misunderstandings.' (IndiaAuto, German expatriate in subsidiary).

As the Chinese unit holds more power, the institutional distance is instead beneficial for the subsidiary: as an insider in the particularities of the Chinese market and with the control of specialised knowledge, the institutional distance improves the subsidiary's power position because the HQ knows its core competences and capabilities. Nonetheless, the direct interaction between German and Chinese participants remains hampered by cultural and language barriers, similarly to the German-Indian collaboration described above.

'I think that if we talk about the international development or collaboration, I think the most challenging part is still the culture. It's not the general culture or China culture or Japanese or German culture, it's more or less the influence of the culture is that people have different ways of thinking and also the way we are talking is also different. You know, Germans may talk stricter and Chinese people talk somehow not so strict and they are not so aggressively talking and so this has caused conflicts on the communication. German people may think why Chinese people don't talk strictly, yeah? And maybe they think about

it, maybe they have a different meaning or different ideas, but why not communicate strictly. And so the Chinese people think that the German [people] talk so aggressive, yeah? So this has caused a lot, some conflicts. I think there's no bad, no wrong, no right; it's just the people needed to have a better understanding of each other and they have to recognise or respect the culture from the counterpart.' [ChinaTech, subsidiary]

In summary, institutional distance makes learning difficult. However, for a powerful subsidiary, large institutional distance also allows differentiating itself from the HQ and stressing its unique cultural access to a particular market. Depending on the HQ's strategic aims, this is regarded beneficial for the HQ, but it can also limit the controllability of the subsidiary and in this way be seen as a threat.

Regarding institutional proximity, its role may not only be influenced by the power constellation, but also by cultural specificities. For example, if the Chinese culture valued being isolated more than the Indian culture, this could explain why the ChinaTech team manages the institutional distance better than the IndiaAuto team.[vi] On the other hand, the analysis displays a rather similar evaluation of cultural distance in the two cases: all interview partners claim that it hampers learning. Moreover, China and India as Asian countries are rather similar in cultural terms, e.g. in regard to Hofstede's (2001) cultural dimensions. Both countries differ significantly from the German culture, above all in Hofstede's dimensions "Power Distance" and "Uncertainty Avoidance"[vii] (Hofstede et al., 2010). This means that the similarity between the cases in the institutional dimension controls for a purely cultural determination of the results; even more so as the ChinaTech case highlights that institutional distance is cherished only when the subsidiary has gained power, but not during the whole process or unconditionally.

Table 1 summarises the results of the empirical analysis.

Table 1. Summary of the empirical analysis of effects of high proximity in HQ-subsidiary learning

	Weak subsidiary	Powerful subsidiary
Effects of high proximity for subsidiary	All forms of proximity are beneficial as they facilitate learning from HQ	Proximity is likewise a chance of learning and a danger for the independence. (Social proximity nonetheless beneficial, geographical proximity and institutional proximity partly beneficial)
Effects of high proximity for HQ	Generally positive attitude to proximity to subsidiary as this smoothens communication with and monitoring of subsidiary and, if strategically aspired, facilitates the subsidiary's learning process	Proximity is regarded as a means of control. This is particularly the case for organisational proximity.

6. Discussion

The core aim of this paper is to examine if power constellations between collaborators in innovation projects influence the effects of proximity. The empirical analysis suggests that depending on the power constellation, proximity has different effects for the involved organisational entities. Subsidiaries without a substantial power position in the corporation (Mudambi & Navarra, 2004) are dependent upon close collaboration with the HQ. In this rather hierarchical relationship, subsidiaries rely upon input and knowledge from the HQ. This means that proximity to the HQ, be it geographically, institutionally, organisationally, socially or cognitively, helps weak subsidiaries to improve their inter-organisational power position via learning (Contractor, Kumar, Kundu, & Pedersen, 2010). Internal learning, above all from the HQ, is thereby crucial (Garcia-Pont et al., 2009; Mudambi & Navarra, 2004). The HQ's perspective on this depends on its own strategic aims for the subsidiary. If it aims at

empowering the subsidiary, a high level of proximity facilitates the subsidiary's learning process and is therefore advantageous for both HQ and subsidiary.

Subsidiaries that hold strategic power in the corporation as they control important assets and contribute competences that are critical to corporate success are less dependent on proximity to the HQ. Such a subsidiary's role in the corporation is more independent, and it contributes self-efficiently to the corporate success (Kuemmerle, 1997). The subsidiary's capabilities are based on internal efforts as well as relations to the subsidiary's local business network (Andersson et al., 2007; Mudambi & Navarra, 2004). Proximity to the HQ hence plays an ambiguous role. On the one hand, proximity facilitates additional learning from the HQ and draws the HQ's attention to the subsidiary, which is important in order to maintain relevance within the MNC (Rugman & Verbeke, 2001). However, a high degree of proximity endangers the subsidiary's position, as it may allow subsidiary-specific capabilities to diffuse throughout the organisation, thus, rendering the subsidiary replaceable and in turn reducing its corporate power. Conversely, proximity to a powerful subsidiary has positive effects for the HQ, since it facilitates learning and subsequently dissemination of this knowledge to other subsidiaries.

Thus, from the subsidiary perspective, the empirical analysis highlights that low proximity between HQ and subsidiary is problematic for weak subsidiaries, while it may simultaneously be an advantage and a disadvantage for powerful subsidiaries. Interestingly, the analysis indicates that the effects of the different forms of proximity are different for powerful subsidiaries. To exemplify, while low institutional proximity is increasingly regarded favourably by the powerful Chinese subsidiary, high social proximity is considered positively even though it increases the chances for the HQ to learn from the subsidiary and, thus, potentially threatens its power base. Consequently, while there is a tendency in the proximity literature to consider the effects of the different forms of proximity in a similar fashion – *'they*

reduce uncertainty and solve the problem of coordination, and, thus, facilitate interactive learning and innovation' (Boschma, 2005, p. 62) – the current analysis points to the importance of distinguishing between different types of learning that go along with different dimensions of proximity.

While the nature of the current study is exploratory and statistical generalisation of the results is not possible, the empirical analysis suggests that social proximity provides the chance for looking each other into the cards, i.e. it may allow the HQ to *learn about* the capabilities of the subsidiary ("know-what" in the terminology of Lundvall & Johnson, 1994). The following quote summarises this.

> *'People that don't know each other, who have never met, usually don't want to [work together constructively]. Hence, in my opinion, the personal contact is essential in the cooperation with China. If you have only chat or e-mail, it is quite likely that many fears and animosities emerge.' (ChinaTech, HQ)*

Institutional proximity, in turn, is more critical for the HQ to acquire the capabilities of the subsidiary, i.e. it fosters the control by HQ of subsidiary competences ('know-how'). Previous work on HQ-subsidiary relations has highlighted that unique subsidiary capabilities, which are widely used within the MNC, are the most important foundation for long-term subsidiary power (Mudambi & Navarra, 2004; Rugman & Verbeke, 2001). Thus, for a powerful subsidiary, high social proximity that allows the diffusion of knowledge about the capabilities of the subsidiary and a lower institutional proximity, which ensures that the capabilities themselves remain at the subsidiary, may be an optimal situation.

This study has some specificities. Among them is the specific setting of the innovation projects. Compared to the German HQ, both the Indian and the Chinese context are in various

aspects distant, above all geographically and institutionally. Such a setting was beneficial for the paper's purpose as high distances illustrate the emerging difficulties particularly well. In the collaboration between e.g. a German-Swedish team, however, the effects would probably be weaker. Finally, both empirical projects were completed successfully. This shows that – despite all academic judgement – pragmatic and sub-optimal solutions may well work in practice.

7. Conclusion

In conclusion, this paper displays the high relevance of paying more attention to power in the proximity debate. By combining the five types of proximity suggested by Boschma (2005) with insights from the international business literature on power, it shows how specific power constellations influence the effects of proximity. Insights from international business illustrate that collaboration does not always take place on an equal footing. This affects the effect of proximity which has not been acknowledged in the proximity debate before. How proximity is being valued depends on the power constellation. Powerful subsidiaries are less dependent on learning from the HQ and can hence benefit from establishing their unique knowledge in a distant setting. In turn, weak subsidiaries depend upon input by the HQ that is easier to access in a proximate setting.

The interrelation between power and proximity is also dependent upon the type of proximity (cf. discussion). While institutional proximity helps the HQ to influence the subsidiary's activities, social proximity is more connected to obtaining relevant information on its operations and for looking each other into the cards. Geographical distance seems to be easiest to bridge; cognitive proximity provides the chance of an easy interpretation of the

other's knowledge, along with the danger of duplicating knowledge; and, finally, organisational proximity grants a sense of shared belonging and a legal framework for HQ-subsidiary negotiations.

Getting back to the proximity debate, this means that academic papers should go beyond a simple typology of different forms of proximity and instead move towards a more multi-facetted and dynamic perspective (cf. also Balland, Boschma, & Frenken, 2015). The implication of the current study is that formation and outcome of collaborations should not only be understood as resulting from certain degrees of proximity, but also as influenced by power constellations, which mediate the effects of proximity for learning. However, acknowledging the importance of power is just one step towards improving the academic understanding of motivations for actors of building more or less proximate relations (see also Hansen, 2014). For the management of international collaborations, this paper's findings provide helpful starting points for 'playing' with the effects the various forms of proximity have in different power constellations. The knowledge of their interdependent and nuanced effects suggests to e.g. organise social meetings to cushion a high level of institutional distance for a weak subsidiary.

For further research, it would be interesting to consider that neither power nor proximity are distributed equally within corporate units. A more differentiated analysis could hence look at interaction effects between power and proximity on the intertwined levels of individuals and corporate units (cf. e.g. Mattes and Späth (2013) for an account of how power constellations differ within HQ and subsidiary. Moreover, cultural and sector differences could be taken into account more systematically.

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Appendix 1

Appendix Table A1. Investigated projects and their core characteristics

	IndiaAuto	ChinaTech
HQ location	Germany	Germany
Subsidiary location	India	China
Subsidiary power	Weak power position	Strong power position
Corporate sector	Automobile	Medical technology
Investigated innovation project	Software	Technological device
Conducted interviews	8 (4 HQ, 4 subsidiary)	16 (8 HQ, 8 subsidiary)
Geographical proximity	Low	Low
Social proximity	Low	High
Organisational proximity	High	High
Cognitive proximity	Low	Intermediate
Institutional proximity	Low	Low

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[i] Localisation advantages emerge if each subsidiary adapts to its host country's environment, i.e. if distance is institutionalised in the corporation. In turn, globalisation advantages arise from a common strategy of all subsidiaries, i.e. proximity within the corporation is a core aim.

[ii] The project 'Product development in multinational companies' involved in total six cases.

[iii] For related studies in the medical technology sector, cf. Späth (2014); for the automobile sector, cf. Clark and Fujimoto (1991).

[iv] These ways of operationalising the proximity dimensions are previously used in the literature. To exemplify, Broekel and Boschma (2012) operationalise the geographical dimension as distance between collaborators; Stensheim (2012) operationalises the cognitive dimension as degree of similarity in knowledge bases understood as similarities in competences following from educational and professional experience; and Hansen (2014) operationalises the organisational dimension as depending on whether the collaborators are part of the same legal entity or not; the institutional dimension as degree of similarity in the partners' firm cultures in terms of norms and habits; and the social dimension as the strength of personal relations between the collaborators.

ᵛ Organisational proximity differs from the other proximity forms as it is directly (and not only indirectly) related to power. Looking at the relation between HQs and subsidiaries, however, organisational proximity does not only involve formal power, but also informal elements such as belonging and corporate culture. This is why the dimension is nonetheless analysed separately.

ᵛⁱ According to Hofstede's cultural dimensions, this is not the case: the dimension "Individualism" scores higher for India than for China (Hofstede, Hofstede, & Minkov, 2010).

ᵛⁱⁱ "Power Distance" refers to how a society handles inequality, i.e. the degree to which unequal power distributions are being accepted. "Uncertainty Avoidance" relates to feeling comfortable or uncomfortable with ambiguous and uncertain situations.