**RESEARCH ARTICLE**

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# Extending Network Analysis with Social Inclusions: A Chinese Entrepreneur Building Social Capital

**Abstract**   Social network analysis is a highly useful tool to study the way individuals form alliances to cope with their daily tasks on the micro-level. We can map the interaction between the key persons involved into a graph, representing the social network. The result is then a snapshot of who interacts with whom and why/how at the time the data were collected. However, when trying to apply it to a higher level, real life problems, this method of analysis seems to deviate from the way people form networks of relationships in social practice. In social practice, human actors tend to form relationships on the basis of institutional affiliation and inclusion in social groups. This paper intends to use Social Integration (SI) developed at Erasmus University Rotterdam on the basis of Karl Weick's organization theory to enrich current social network theory with a module that links networks on the basis of multiple inclusions of actors in several social-cognitive groups (networks). The expanded model is tested on a Chinese business case.

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## 1   Introduction

Network has become the magic word of our time. It has even come to be used as a verb. We need to network to land a good job, to locate new customers, and to make new friends. Network as a term has entered the vocabulary of many academic fields. Social network analysis describes social relationships in terms of nodes and ties, where the nodes are the individual actors, and ties the relationships that hold between the actors. One reason for the popularity of network analysis in social sciences is that it lends itself easily to mathematical techniques. Combined with the rapidly increasing power of personal computers, including the automatic drawing of graphs, social network analysis has become an attractive quantitative analytical tool (Kilduff et al., 2003). The software can calculate a number of parameters about the resulting network, like the closeness between two nodes, and the centrality of a node. The results can help determine the power of each individual (Brass et al., 1992; Scott, 2000).

Social networks are usually constructed around a specific theme. Krackhardt (1992) asked the employees of a medium sized firm whom in their company they would turn to for advice, when encountering a problem they could not solve by themselves, and whom in their company they regarded as a personal friend. The resulting graphs revealed that some employees were highly regarded as "advisors," but almost completely slighted as "friends." Information like this can has practical use for, i.e., managers to select a most suitable candidate for a management position. Kapferer (1972, cited in Kilduff et al., 2003) mapped the transactional relations (money lending, and personal aid) between the employees of an African factory at two points in time. The resulting network of Time1 showed low centrality, which explains why attempts to organise a strike failed. The network at Time 2 includes a few highly centralised workers, who were able to launch a strike. That information is again valuable for the management of the company.

The relationships that a person accumulates in a social network and the sum of potentialities of these relationships are often referred to as social capital. The term social capital is rooted in sociology, with Bourdieu as an early proponent. Bourdieu distinguishes between three forms of capital: economic capital, cultural capital and social capital. The capital of each individual is a specific mix of these three (Bourdieu, 1986). Lin uses a definition that is more focused on the financial meaning of the word capital, when he states that "the premise behind the notion

of social capital is rather simple and straightforward: investment in social relations with expected returns to the market place" (Lin, 2001: 19). Lin here follows Burt (1992) in linking social capital to social networks. Network locations are seen to "represent and create competitive advantages" (Lin, 2001: 22; Batjargal and Liu, 2004). In recent years, the notion of social capital has become highly in vogue in all social sciences, and even every day parlance, like the term social network. This leaves the term open to the risk of erosion of meaning (Halpern, 2005: 1–2).

Social network analysis is a highly useful tool to study the way individuals form alliances to cope with their daily tasks on the micro-level. We can map the interaction between the key persons involved into a graph, representing the social network (the graph IS is not the network but a graphic representation of it). We can then add comments on the nature of each relationship between two nodes. The result is then a snapshot of who interacts with whom and why/how at the time the data were collected.

However, when trying to apply it to higher level, real life problems, this method of analysis seems to deviate from the way people form networks of relationships in social practice. In social practice, human actors tend to form relationships on the basis of institutional affiliation, inclusion in social groups. The term institutions is here understood as in new institutionalism: as "collective action exercised by different types of organization—such as the family, the corporation, the trade union, and the state—in control of individual action" (Parto, 2003: 4).

For example, a teacher at a certain school belongs to the school (organization, the inclusion in which was initiated through a process of hiring), but also to the trade of teachers (professional institution, the inclusion in which was initiated through a process of education). Being a member of the organization (being a teacher of that school) and belonging to an institution (being a teacher), although related, have different consequences for that person. The teacher may, e.g., develop a conflict with his superiors in the school. As a consequence, he may decide to start looking for a different place of employment. However, being a teacher will restrict his search to other schools. He could also decide to look for a different type of job, but this would mean a break with two social inclusions: The current employment and the profession. This would explain why looking for another school would be the more obvious choice, a step easier to take. When describing the social relationships of a person, it is not always necessary to know exactly with whom that person is relating. Very often it suffices to indicate social inclusions. This makes standard social network analysis a less suitable tool to investigate the total of an individual's relationships.

Too strong a focus on classical networks can impede organization research. In a recent paper, Dunbar and Garud (2009) study the distribution of knowledge

over multiple groups of people involved in the case of unfortunate Columbia Shuttle flight. They point out that a major challenge in the study of the decision-making processes is that "they involve the views of multiple actors, each bringing to bear a different perspective" (Dunbar and Garud, 2009). The authors meticulously discern groups involved in assessment of the situation of the shuttle, and place their actions on a detailed timeline. However, in the conclusion they blame the NASA managers for relying too much on "a conceptualization of organizations as information processing systems that are somehow subject to the objective control and direction of responsible individual decision makers." Instead, they contend, "managers should realize that knowledge is distributed across artefacts, people, metrics, and routines" (Dunbar and Garud, 2009). While we subscribe this conclusion, we feel that the authors fail to indicate how groups of people involved in the same task, however complicated, are, or should be, integrated to perform that task. To reach that goal, their research should be taken one level deeper, to the level of ongoing interaction, in particular to key actors with multiple inclusions in two or more of the groups. That research will show how some groups are able to couple their behaviour through multiple inclusion, and may also reveal structural holes, groups that fail to do so, due to a lack of actors with shared inclusions. Only with information like that it would be possible to formulate a structural solution.

Another example in which researchers seem to run into the limitations of classical social network thinking is the study of Batjargal and Liu cited above (Batjargal and Liu, 2004). They examine the effects of Chinese entrepreneurs' social capital on investment decisions of venture capitalists. Their findings show that social capital indeed has significant effect on investment selection decisions. In particular, they find that strong ties between entrepreneurs and venture capitalists have significant direct effects. However, in their conclusions, the authors point out that one of the limitations of their research is that they examined a single type of relationship: friendship. In doing so, they "used social capital measurements that were developed in the Western context for measuring an indigenous phenomenon . . . *guanxi*. In this way they [originally: we] may have overlooked unique features of *guanxi*" (Batjargal and Liu, 2004). It is very unlikely that this problem is due to the researchers' lack of insight in the various types of relationships that can exist between people. Rather, it is more likely that they lack a tool to connect different types of networks, like friends, university mates, and people from the same home region. Adding a module of network of inclusions to existing social network models can effectively overcome this problem. It will then be possible to investigate whether there is a preference for a certain type of inclusion, or perhaps the number of shared inclusions between an entrepreneur and a venture capitalist is a significant factor.

At several other places, teams of researchers are directing network research

from "networks" to "networks of networks," as David Weir of Liverpool Hope University (private communication) specified this gap in current network theory.

This paper intends to use Social Integration (SI) theory to bridge that gap and enrich social network theory with a module that links networks on the basis of multiple inclusions of actors in several social-cognitive groups (networks).

SI theory has been developed at Erasmus University Rotterdam on the basis of Karl Weick's organization theory (Weick, 1979, 1995), complemented with elements from the thinking of philosophers like Foucault and Derrida. Organizing in this theory is defined as "the reduction of equivocality in ongoing social interaction between actors to couple their behaviour to perform a certain task more efficiently." One of the consequences of this process is the emergence of groups of actors who frequently interact around a specific theme and therefore make sense of that topic in a more or less similar way. Those actors are said to be included in such a group. Each actor is involved in a large number of such groups, which is referred to as multiple inclusions. Two or more groups are connected by actors with inclusions in each of the groups.

This paper will start with a concise introduction to the current SI theory, and use it to develop a model of a network of social networks. We will apply this model to a practical case. The company that is the core of this case, Yihai Garden, is a privately managed condominium in Beijing, China, that has established a series of school on its premises to create additional value for its clients. The condominium is located in the Fengtai District of Beijing and according to current Chinese regulations the schools should be supervised by the Education Bureau of that district. However, in practice the Fengtai Education Bureau is hardly involved in the operation of the schools, while the Education Bureau of another district pays much more attention to Yihai's schools. We will use our enhanced model of social networks to show that this situation was a consequence of the way the entrepreneur in this case gradually built up social capital by facilitating the "key" people (people with multiple inclusions relevant to the case) to link up their various inclusions.

## 2   Social Integration Theory

Social Integration theory includes a number of graphic conventions. As soon as two or more actors start interacting about a certain theme, the process of reduction of equivocality will create a configuration, consisting of the actors and the cognitive matter they share (typical language, symbols, ways to do things, etc.).

We will take the initiation of the merger of HP and Compaq as an example. Carly Fiorina, CEO of HP called on her counterpart at Compaq, Michael Capellas, in mid-2001 with the idea for a merger, and Capellas was easily

convinced (Carlock & Florent-Treacy, 2003). In terms of SI theory, Fiorina and Capellas formed a configuration around the theme of the merger. From the little information provided about these key actors so far, we know that Fiorina was included in HP and Capellas in Compaq. As soon as they started interacting about a merger, they were also included in the configuration they constructed around that theme. This results in a graph like in Fig. 1.

At the first sight, this resembles the graph of a social network. However, there is a fundamental difference. The nodes are (social-cognitive) groups. The groups are linked by the multiple inclusions of actors in two or more such groups, and the links indicate that cognitive matter can flow from one group to another, through those inclusions. The thick line indicates that F(iorina) and C(apellas) have a configurative relationship.
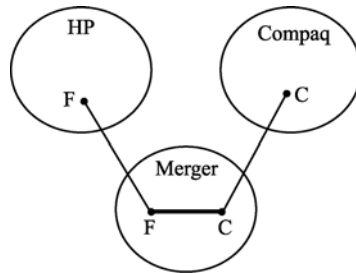


**Fig. 1**  A Simple SI Network Indicating the Initial Situation of the Social Construction of the HP Compaq Merger

The SI graph of Fig. 1 would not let itself be translated easily into a social network graph. The simple social situation involves only two actors mentioned by name. The resulting graph would then consist of two nodes, connected with one line, as drawn in Fig. 2.



**Fig. 2**  A Social Network Graph of Fiorina and Capellas' Relationship during Their First Interaction about the HP Compaq Merger

However, that graph simply states that F and C are linked, and fails to indicate why/how they have become linked. This graph still needs considerable additional explanation. Fig. 1 on the other hand, tells us that F and C are configuring around the theme of a merger and that F is doing so from the HP inclusion and C from the Compaq inclusion. However, the explanatory power of this graph is even larger. Fig. 1 indicates that C's position in his Compaq inclusion has changed; he can now access cognitive matter from the Merger inclusion while interacting

with the Compaq space. The same applies to F in her HP inclusion.

In SI research, one carefully observes and inventories who interacts with whom (the social side) and the nature of that interaction (what theme, how do they make sense of the theme, division of roles, and typical ways of doing things). While observing, the researcher gradually becomes aware of the social-cognitive groups, the key actors and each actor's multiple inclusions. SI researchers build up their insight in the social construction of the object of their research by laying down the observed data into a graph like Fig. 1, which can be regarded as a database that reflects social reality.

The SI model may also suit the concept of social capital better that the rather mechanistic concept of social network. In a social network we can calculate the number of direct and indirect links a certain node (actor) has with other nodes. However, in order to make these cold figures work, we will still need additional information, like the nature of each relationship, and the role of the actor in each relationship. In the SI framework this information is not only an organic part of the model, it is the starting point.

The SI model is a tool to map and link the social capital of each key actor involved in the case under investigation and simultaneously how they are the social capital of all these actors is naturally integrated. This is a major contribution to both social network theory and the social capital theory.

## 3   Research Method

The research method used in this study is naturalistic inquiry (Lincoln and Guba, 1985). To maximize our exposure to actors involved in the case, extensive use has been made of unstructured observations and unstructured in-depth conversations documented by detailed field notes. We have collected the spontaneous personal stories of key people about the subject matter. Stories can be regarded as the carriers of the cognitive element of social-cognitive structures. They are containers for the shared perception of reality, the symbols, and special jargons. They define the role of each actor and describe the relationships between the actors (Czarniawska, 1998; Boje, 2001). In the SI framework the stories of the various groups are kept separate. Each social-cognitive group involved in the case will have its own story of the case. Such stories only pertain to one particular group and are linked to one particular moment in time (Gergen, 1992: 220). The groups are then integrated by the multiple inclusions of the (key) actors involved.

As the study of social capital building of Chinese private entrepreneurs is still in its initial stage, we are coping with a relatively large number of variables of potential interest and a large number of sources of data. Existing research has not yet resulted in complete models for this topic. In such a context, the case study is

the most appropriate approach (Yin, 2004). The combination of a case study and naturalistic inquiry will generate a framework that can be applied to a larger number of cases in the future, which can gradually lead to the construction of a model of social capital of Chinese private entrepreneurs.

## 4   Yihai Garden

Yihai Garden is a residential estate in Fengtai District of Beijing. Private housing in China used to be typically provided through the work unit. Although this system has not been abolished, the current trend is that Chinese citizens take care of their own housing. Commercially developed residences have become a booming business. The more elaborate estates include shops, restaurants, and other conveniences to attract buyers.

Yihai Garden has been selected for a number of reasons. The project is one of the oldest of such projects in Beijing and certainly one of the most elaborate. Moreover, in Yihai Garden, the original developer has stayed on to manage the estate, while in most such projects the management is taken on by a dedicated management company. This fits the image of that the entrepreneur has created for herself as a responsible entrepreneur committed to redefine the way the citizens of China's capital live.

Fengtai District had been looking for a party interested to develop that piece of land for some time without success. As a last resort, Fengtai presented the project during a trade fair in Hong Kong in 1992, where it attracted Wang's attention. Wang succeeded in gathering a group of investors and went to Fengtai to inspect the site and negotiate with the government. The state of the soil was so poor, that all potential investors but Wang pulled out from the project. In Wang's own words (private communication), she was set on "helping the government" in a moment of need and as a reward she was given the right to develop the land at very low cost.

The main problem during the initial stage of the problem was infrastructure. Wang gave a section of her land to the transit company to build a bus station, to speed up the opening of a bus line between Yihai and the city centre. Wang again explains this move in terms of helping a government agency lacking means to make the investment at that time.

Another impediment for people to decide to buy apartments in Yihai was the lack of proper education in its vicinity. Finding schools and seeing children to school is a burden for most of China's urban residents. Wang decided to develop a complete set of educational institutions within Yihai, including a kindergarten, a primary school and a middle school. The idea was conceived as a way to relieve the Yihai residents of this mental and physical burden, so they could focus on their jobs to earn a living for their families.

Establishing and operating schools, in particular primary and secondary schools, involves a lengthy bureaucratic procedure. Government approval is needed. And to obtain such approval, one needs to comply with the relevant rules. In line with Chinese practice as explained in the first part of the introduction, Wang proposed her idea to the appropriate administrative level, Fengtai District. She mainly met with opposition, with the exception of one official, Mr Yingwei Li. The authorities claimed that they did not even have the funds to maintain the existing schools let alone build new ones. Wang then, again in her own words, decided to "help the government" and finance the establishment herself, as long as she got permission to do so.

To access educational knowledge, Wang sought relationships for her primary and middle schools with existing schools. Through the connections of Mr Yingwei Li, Beijing No.2 Experimental Primary School and Beijing No.8 Middle School were successfully contacted respectively. The Yihai schools were established as subsidiaries of these schools. In the remainder of this paper, Yihai2 will refer to Yihai's primary school and Beijing2 to its mother organisation. The same applies to the terms Yihai8 and Beijing8. Especially during the initial stage, a significant number of teachers were assigned, including the current principals, to Yihai from the partner schools.

This created an interesting situation with regard to the administrative affiliation the Yihai schools. According to current research findings, the Fengtai Education Bureau would be the expected supervising agency of the Yihai schools. Our research revealed the opposite. Instead, as both partner schools are located in the Xicheng District, they have a strong Xicheng character. Both principals have held functions at the Xicheng Education Bureau. The Fengtai Education Bureau acknowledges the success of the Yihai schools, but their interaction with the schools is infrequent. The Xicheng Education Bureau, on the other hand, has visited Yihai once with an official delegation of school principals to learn from Yihai's experience. During that visit, a representative of the Xicheng Education Bureau mentioned the links with the Xicheng as the motivation for the visit.

The case story seems to indicate that the deviating situation can be linked to the personal entrepreneurship of Linda Wang, in particular her ability to forge relationships with key people and add the networks of those people to her own. In other words, Wang not simply forges relationships with people, but links the networks of those people with her own networks. In the remainder of this paper we will formulate a model to analyse such social processes and apply it to the educational activities of Yihai.

## 5   The Social Construction of Yihai Education

In terms of SI theory, the educational activities of Yihai constitute a separate

cognitive space, which will be referred to here as Yihai Education. This space started as an idea by Wang, but was gradually constructed through her interaction with people in various contexts. All these people added to the cognitive matter of that space through their multiple inclusions. The following is our reconstruction of that process, based on the stories of the various key persons. While telling the story, we will point out the various social-cognitive groups involved, and the way they are linked through the inclusions of those key people.

People do not develop ideas from scratch. New ideas emerge on the basis of existing inclusions. As the CEO of Yihai, Wang needed to attract buyers for her apartments. As the mother of a (then) school age child, proper schooling was one of the priorities in her family inclusion. She realised that political practice required her to contact the government and, as Yihai was located in the Fengtai District, the government for her to turn to was that of Fengtai. She talked to a number of Fengtai officials. We do not know to whom, except for one person: Yingwei Li, who supported her. Yingwei Li has been the Governor and Party Secretary of Fengtai District. He has always been a supporter of developing this region through attracting high tech projects, which made him more open to Wang's initiative than his colleagues at Fengtai. When people start to interact around a certain theme, they immediately start the sensemaking process, and the creation of a configuration. Wang is interacting from her position as CEO of Yihai, her counterparts from their respective positions in Fengtai. They create a third context, that we will give the working label: Yihai Education. Wang is included in Yihai and the newly created Yihai Education space; Li in Fengtai and Yihai Education. Li agrees with Wang's idea, which is indicated by the thicker line, which in this system of graphic representation symbolised frequent interaction, thus creating an especially strong bond. The other Fengtai people then retreat from the interaction. The resulting situation is graphically represented in Fig. 3.
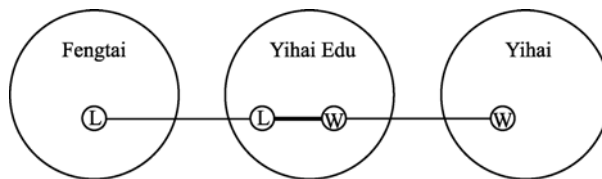


**Fig. 3**　Basic Situation during the Initiation of Yihai Education

Wang then contacted the Beijing Education Commission (BEC) for approval. In Wang's own story, she never omits to stress that she even visited a BEC official in hospital, who was therefore convinced of her determination. We have no name of a person there, so we will call this person X, as a symbol of the

institution BEC. As approval was granted, this X remains included in Yihai Education. In the institutional environment of Chinese educational policy, schools need to be regularly inspected to see if they are still operating in accordance with the law, so we can presume that some levels of regular interaction remain. In our following graphic representations of the social construction of Yihai Education, we have omitted the BEC contact. It is not a major role in this story and not drawing in will keep the graphs more intelligible.

After obtaining approval, the next problem for Wang was knowledge of education. Of core importance to the realisation of her educational ambition was to establish a primary and a secondary school. This can be graphically represented as in Fig. 4.
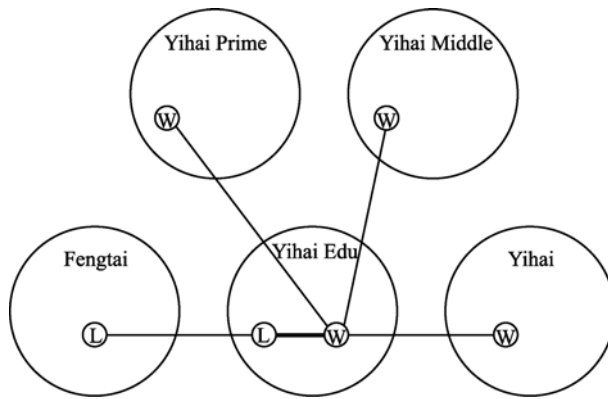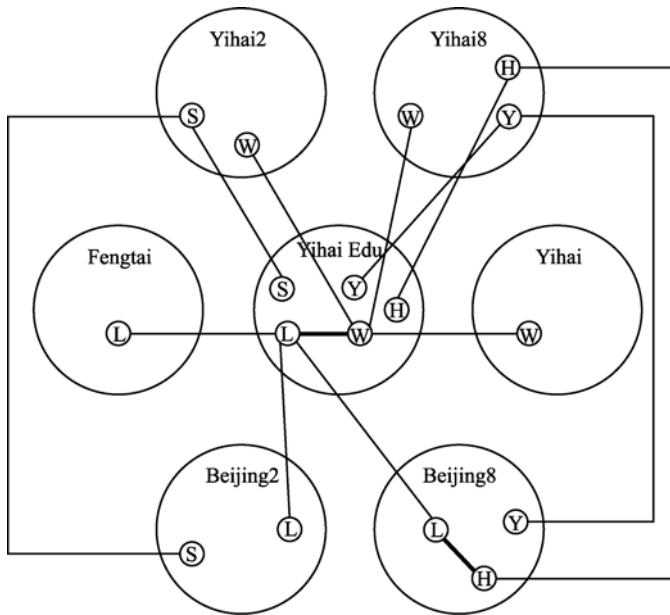


**Fig. 4**    The Primary and Middle Schools are being Conceived by Wang

Wang wanted to establish cooperation with existing schools to utilise their experience. A common point in the stories of people from Yihai Education is that Fengtai was a rather backward, rural, district. Fengtai was perceived to have a rather introvert culture, with little endeavour to link up with the rest of Beijing. Fengtai was therefore not considered the proper place to find partner schools. As Wang had already established a strong bond with Li, Wang once more turned to him for advice. Li had inclusions in Beijing2 and Beijing8. Li is an alumnus of Beijing8, as is his wife Hu. Li's son had been educated at Beijing2. It was then almost natural for Li to introduce these schools as potential partners to Yihai. Li's wife used to teach at Beijing8 and was transferred to Yihai8. She is still one of the directors in Beijing8. The naming of the Yihai schools is based on the names of the partners: Yihai2 and Yihai8, respectively.

As part of the cooperation between Yihai2 and Yihai8 and their respective mother schools, Beijing2 and Yihai8 sent a number of teachers to Yihai, including the current principals, Shi and Yin respectively. In the total picture, Shi

is included in Yihai2 and Beijing2. The same holds for Yin and Hu in Yihai8 and Beijing8. Yin's story shows a strong bond between herself and Wang. Yin relates that she and Wang hold different opinions on a number of topics, but that their personal relation is very good. Strictly speaking, the special relationship between Li and Hu forms a space of its own, but as it has been constructed in their Beijing8 inclusion, we can simplify the graphical representation of this case by drawing it in Beijing8, with a thick line to stress the tight bond, resulting in Fig. 5.



**Fig. 5**   Partner Schools for the Primary and Middle Schools
Note: Partner schools for the primary and middle schools have been found through Li's inclusions. This leads to the final naming of the schools and adds relations to the Yihai schools and their partners through the inclusions of the principals.

The original Wang–Li configuration in the Yihai Education space gradually institutionalised into a Steering Group Commission (*jituan weiyuanhui*). This is an important milestone in a process of emergence. Once regular social interaction has been institutionalised, it will have the propensity to constantly reconstruct itself through by following the institutionalised procedures. At this stage, some actors can leave the group, while others can be added, without fundamentally changing the cognitive part. For example, a new Principal of Yihai2 would bring in his/her own inclusions, but this will not necessarily immediately or fundamentally change the way the Commission operates. The establishment of

the Steering Group Commission therefore marks the consolidation of Yihai Education. The configuration of the Commission is indicated with a thick line in red to make it visibly more distinct from the Wang–Li configuration in the Yihai Education space.

Both Beijing2 and Beijing8 are located in the Xicheng District. As such, they fall under the supervision of the Xicheng Education Bureau, which indicated by the interrupted line in Fig. 6. This link with the Xicheng was not intended, but a consequence of gradual social construction of Yihai Education. We are now ready to make an attempt at drawing the final graph of social construction of Yihai Education.
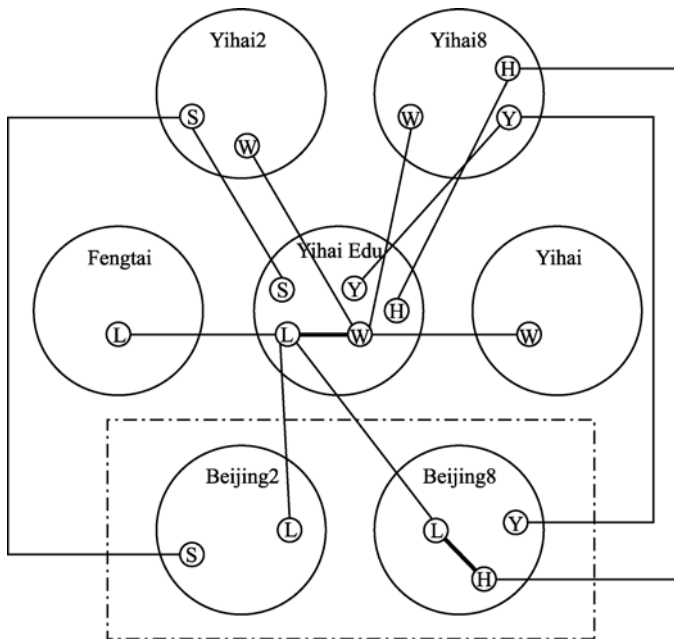


**Fig. 6**    Yihai Education Attracts the Attention of the Xicheng Education Bureau

Note: The interrupted line indicates the part of Yihai Education that is geographically located in the Xicheng District.

## 6   SI versus Social Networks

Fig. 7 shows what a typical social network with the key actors in Fig. 6 could look like.

This may seem to work as well as the graph of Fig. 6, but what can we learn from this graph about, e.g., the occasion for interaction between Shi and Hu? In the SI graph, we can see that they share an inclusion in Yihai Education, Yihai8
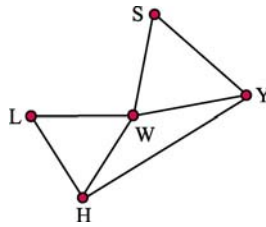
**Fig. 7**    Standard Social Network Graph of the Key Actors in this Case

and Beijing8. These are three social identities that Shi and Yin share, and for each instance of interaction between these two that we can observe, we can determine to which inclusion it is linked.

The strength of Fig. 6 is that it does indeed indicate that all these 5 actors are linked to all others. However, it also indicates the context of the linkages. An SI graph is a not a network of individuals, but of social-cognitive groups, comprising organizations and institutions. Each circle represents a social-cognitive group. Although Fig. 6 only includes 5 actors, the graph actually represents a much larger group of people. Yihai Education is a relatively small, specific, group, of which we more or less know all members. However, Fengtai (Government) represents a large number of people, hundreds possibly. The linkages between the groups are people who are included in at least two of the groups. We can see that Hu and Shi interact in their shared inclusion in Yihai Education. We can simultaneously see that they differ in their inclusions in their respective schools. We can for each pair of actors determine what they share and what sets them apart.

In SI theory, inclusion refers to cognitive inclusion. A person like Hu, who is no longer officially employed by Beijing8 can still be regarded as included in Beijing8. She has spent a long time there, even as a student. She is said to still engage in occasional liaison work between Yihai8 and Beijing8. Such interaction will continue to reinforce her inclusion in Beijing8. This was exactly the reason that Li could introduce Beijing2 and Beijing8 to Wang. He was obviously no longer a student, but still included as an alumnus.

The strongest point of this methodology is that it accounts for actors to act from different points of view (act in multiplicity). A person like Wang can have different points of view concerning the same issue, depending if she is regarding it as the CEO of Yihai Garden, the driving force of Yihai Education, or a board member of Yihai8. Moreover, in all situations she is always all of that simultaneously. What varies is that in one situation one inclusion will be more prominently invoked than the other inclusions. Wang is like a spider in the middle of her web with the most intense, relations (4 inclusions and 2 strong configurations). This reflects her position as the driving force, and also

corroborates that her interpersonal skill of forging strong bonds has been a key factor behind her success.

An SI graph like Fig. 6 also naturally explains the position of people like Shi and Yin, who have to balance their attention between their commitment to their respective schools and Yihai, a commercial enterprise. This balancing is located in their shared inclusion in Yihai Education. Yihai Education is a platform on which the for-profit and the non-profit worlds meet. Wang as an entrepreneur can be credited with facilitating the construction of such a space.

Finally, we would like to refer briefly to what we feel is the more powerful explanation of Chinese data by the SI model. Chinese culture is generally referred to as collectivism in current culture theories (Hofstede, 1980: 159; Trompenaars, 1992: 48; Mo, 2007). People in a collectivist culture prefer to anchor their identity in a group affiliation, rather than link it to their person. Most studies of Chinese social relationships (*guanxi*) confirm that interpersonal obligation is a basic property of such relationships. A relationship between A and B is defined in what A can mean for B and B for A. This "mean for" is almost always expressed in the way the respective group affiliations of A and B can complement one another (Yan, 1996; Kipnis, 1997; Provis, 2008). Also in this respect, the SI graph seems to be a more natural model of the Chinese social reality than a standard social network graph. However, as culture and cultural differences are not the themes of this paper, this aspect will need to be continued in later research.

# 7   Combining SI Networks and Standard Networks

We are not arguing to replace standard social network analysis by the SI model, but rather attempt to increase the explanatory power of both by combining them. In fact, the social-cognitive structures indicated in SI graphs by circles usually represent networks. We have posed a few basic questions to the most important actors in the Yihai Education case for standard social network analysis. The detailed questions and responses can be found in the appendix.

*Question 1: Who in your work environment do you regard as a friend?*
None of the Yihai principals mentions a fellow principal as a friend. Only Hu, who is not a principal, designates all principals as friends. Shi and Yin both have friend networks in their respective previous schools. This confirms that they are still strongly included in these schools. Shi mentions a shared previous inclusion in Xicheng Education Bureau with Yao and Li of Beijing2. This reference confirms that the link between Yihai Education and Xicheng District is made through Beijing2 and Yihai8. An interesting aspect in these replies is that Yin, who during an earlier open interview showed to have a strong relationship with

Wang, does not mention Wang here as a friend, while the opposite seems to be the case for Shi. However, Shi uses phrasing that indicates that he feels that he ought to include Wang.

*Question 2: With whom in your work environment do you frequently interact?*

The respondents are very consistent in mentioning their fellow members of Yihai Education as the ones with whom they maintain frequent contacts. They are also consistent in not mentioning inclusions outside Yihai Education. There is no overlap between the long-term relationships reflected in the replies to Q1, and the operational relationships referred to here. Even more than was the case with Q1, Wang stands out as the one who apparently wants to keep a certain distance from the subject matter. This confirms the impression derived from the open interviews that Wang is not deeply involved in the day-to-day operation of the educational activities at Yihai.

*Question 3: Who has been most helpful to you in your work?*

There is less consistency in these replies, although the Yihai Education people tend to refer to one another. Except for Shi, who includes Li Yingwei, the Yihai Education people only turn to people of their own circle for help. This once more confirms that Yihai Education is a tightly coupled system. While showing reluctance to reveal her close contacts, with this question Wang spontaneously provides names. This shows that even a reference to issues that require heightened sensemaking can make people become more focused. Wang, however, mentions people outside Yihai Education, while most of Yihai Education people mention her. Wang's reply may not be directly related to educational problems, but problems concerning Yihai Garden in general.

We can look at one example from our Yihai Education case. In Fig. 6, Shi has inclusions in Beijing2, Yihai2 and Yihai Education. As such, Shi is the channel through which cognitive matter from any of these inclusions can be accessed from another one. The social network analysis reveals in more detail how Shi is connected to other members of each of these three inclusions. Once we have added the findings of the social network analysis, we can, again using the SI model, infer that each of these connections, like e.g., Shangzhi Yao of Beijing2, can be a potential point of access to yet other inclusions. We have drawn these actors in Fig. 8, which is a detailed version of Fig. 6, on which we, as it were, are zooming in.

Hence SI analysis and social network analysis can be combined to reach the desired degree of insight. For some aspects, it is sufficient to know that a certain inclusion of a certain person plays a role, while there is no need to know other actors in that inclusion. For other aspects, such details may be felt useful. In that case the required information can be revealed through a social network study.
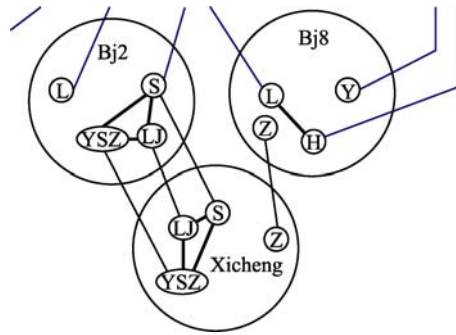
**Fig. 8**   Section of Fig. 6, but with More Detailed Information on the Links with Xicheng Education Bureau

This relatively simple study already reveals that social network analysis and SI analysis can complement one another. The strong point of the SI methodology is that a network of relationships can be constructed on the basis of little and incomplete information. Naturalistic inquiry allows researchers to gradually construct a model of their subject matter, while research is ongoing. The strong point of social network analysis is that it very precisely maps the relationships between the respondents for very specific themes. Using SI terms, we could tentative draw the conclusion that social network analysis is better suitable for investigating social-cognitive configurations, while SI analysis is the preferred tool to study networks on meso- and macro-levels.

# 8   Results and Discussion

This study addresses the need to expand current social network analysis with a tool to link various networks, thus forming a network of networks. A solution is sought by applying the concept of multiple inclusions from SI theory, regarding actors included in two or more networks as the links between those networks. The results of the analysis of the educational activities at Yihai Garden corroborate the idea that network analysis will gain considerable explanatory power, when it is possible to not only indicate links between individual actors, but also between groups of actors (networks).

The core problem in the Yihai Education case is that the government organization that would be expected to control these schools, the Fengtai Education Bureau, was in fact hardly involved in their operation, whilst another one, the Xicheng Education Bureau, although not officially empowered with such jurisdiction, showed certain aspects of the behaviour of a supervising organization.

This situation can be explained as a consequence of the concatenation of

interactions related to the establishment of Yihai Garden in a particular institutional environment. The Fengtai government was financially unable to develop the piece of wasteland on which Yihai Garden was built. Wang could use her strong financial position to offer to undertake the project without any financial participation from Fengtai. However, the fact that at that time the national government started loosening the grip of local governments on the operations of enterprises must have played a crucial role as well. The combination of a beneficial national policy, a relatively weak local government and a strong entrepreneur form the basis on which Yihai Garden could emerge as an enterprise operating with only marginal interference from Fengtai.

There is, however, another circumstance that has been constructive of this situation: Linda Wang's entrepreneurship. Wang's personal traits made her hold on to the real estate project, while the other investors left. As an entrepreneur Wang was agile in making a deal with the Fengtai government that was also beneficial to her, but on the other hand she made sure that she did not overplay her hand. On the part of the government this created a feeling that Wang could be trusted, which decreased the need for frequent control.

Li's strong inclusion in Science & Technology made him receptive of Wang's idea to establish schools at Yihai. Through her configuration with Li in Yihai Education, Wang could access other inclusions of Li, in particular the ones in Beijing2 and Beijing8 as partners for Yihai2 and Yihai8, respectively. As both schools were located in Xicheng District, the inclusions of the staff that were assigned from Beijing2 and Beijing8 to Yihai formed as many channels to access cognitive matter of Xicheng District. This applies in particular to Shi, and some of his ex Beijing2 colleagues at Yihai2, who had been employed by the Xicheng Education Bureau. Particularly, these inclusions facilitated more access from Yihai to Xicheng District space. Contrary to Fengtai, Xicheng District had a strong government. It is the location of a number of ministries, Beijing's Finance Street, giving Xicheng District direct access to the central government. In this institutional environment, Xicheng Education Bureau, once it had become aware of the ties between their district and Yihai Education, would feel a natural urge to exercise some form of control. However, they could not do so directly, as Yihai was still located on Fengtai soil. This was the political setting in which the Xicheng Education Bureau organised a study visit to Yihai with such a large delegation. Seen from the perspective of Yihai, we could observe that Yihai, not content with its "natural" supervising agency, started looking for a more appropriate one. However, saying so would imply that it was a deliberate act of Wang, which was not entirely the case.

Wang's combination of perfectionism and the propensity to be kind and helping creates a particular management style. She needs people that agree with her goals, and when she runs into such people she knows how to bind them by

allowing a certain freedom of action. A recurrent theme in the stories of Yihai employees is that Wang as a manager is exigent regarding the required results, but flexible when it comes to the way an employee reaches those results. Wang always wants to do things her way, but also grants other that freedom, provided the objectives are aligned. In Weick's terms, Wang is good in forging loose couplings. Loose coupling is a relationship in which actors share a number of traits that are considered essential, but can disagree on a large number of others, without harming the relationship. In a loosely coupled relationship "people like each other for their own sake," this makes it the most productive type of relationship. Loosely coupled people cooperate on what they share, while respecting their differences (Weick, 1979: 111–112).

This paper has shown that standard social network analysis is insufficient to model the course of events as described in the above paragraphs. Once social network analysis is combined with SI theory, they result in a powerful model. Such model can integrate inclusions of actors in organizations and institutions, and therefore be applied in various modes of detail. When less detail in terms of individual actors and their relations is needed, an SI network of social-cognitive groups, including organisations and institutions, linked by the multiple inclusions of key actors has a more powerful explanatory power. Where more detail is needed, a standard social network can be embedded in an SI network to form an organic part of it. Further research of different types of organizations in various contexts is needed to corroborate the outcomes of the Yihai Education case.

## 9    Limitations, Future Research and Implications

This is a preliminary study. The methodology developed for the analysis of the Yihai Education case can serve as a model to analyse a much larger number of different cases of the social capital of Chinese private entrepreneurs. Variety must be sought in the type of business, size of the company, and geographic location. The new methodology has only been applied to one single case. In the naturalistic paradigm, one of the parameters to judge a case study is its transferability to other contexts (Lincoln and Guba, 1985: 290), which is the naturalistic counterpart for "external validity" in conventional research. However, this should not be confused with generalizability. Naturalistic inquiry tries to avoid the habit of conventional research to concentrate on aspects that do not, or less, vary in time and location, regarding the volatile aspects as an organic part of the research topic.

Linda Wang's traits as an entrepreneur are effective in building the networks. However, it will be necessary to review the Yihai case and the role of Linda Wang in the future, because time will change both the context and the key individuals. The new extended network model has been applied in this case

exclusively in a qualitative fashion. This fits the naturalistic paradigm, which is mainly qualitative in nature. However, to extend the applicability of the new model and to fit it better in with mainstream social network analysis, it will be necessary to develop a number of quantitative indicators for social inclusions.

However, taking into account the limitations, the results of this study are highly relevant for the advancement of social network analysis and academic realms that use social network analysis, in particular the study of social capital. Instead of studying the various social identities of actors and the way they are involved in networks separately, the model developed in this study combines these two into an organic whole. This method seems to fit more "naturally" to the way human actors behave. This has to be corroborated by future research.

# References

Batjargal, B., & Liu, M. 2004. Entrepreneurs' access to private equity in China: The role of social capital. *Organization Science,* 15(2): 159–172.

Boje, D. 2001. *Narrative methods for organizational and communication research.* London: Sage.

Bourdieu, P. 1986. *Distinction—A social critique of the judgement of taste.* London: Routledge.

Brass, D. J., & Burkhardt, M. E. 1992. Centrality and power in organizations. In N. Nohria, & R. G. Eccles (Eds.), *Networks and organizations*: 191–215. Cambridge: Harvard Business School Press.

Burt, R. 1992. *Structural holes: The social structure of competition.* Cambridge: Harvard University Press.

Carlock, R., & Florent-Treacy, E. 2003. The HP–Compaq merger: A battle for the heart and soul of a company. *International Journal of Entrepreneurship Education,* 1(3): 419–454.

Chen, G., Li, J., & Matlay, H. 2006. Who are the Chinese private entrepreneurs? A study of entrepreneurial attributes and business governance. *Journal of Small Business and Enterprise Development,* 13(2): 148–160.

Czarniawska, B. 1998. *A narrative approach to organisation studies.* Thousands Oaks: Sage Publications.

Daft, R. L. 2007. *Understanding the theory and design of organizations.* Mason: Thomson

Dunbar, R. L. M., & Garud, R. 2009. Distributed knowledge and indeterminate meaning: The case of the Columbia Shuttle Flight. *Organization Studies,* 30(4): 397–421.

Dutton, M. 1998. *Streetlife China.* Cambridge: Cambridge University Press.

Forrester, P. L., & Porter, R. S. 1999. The politics of management in People's Republic of China: From CMRS to modern enterprise and beyond. In M. Warner (Ed.), *China's managerial revolution*: 47–72. London: Frank Cass.

Gergen, K. J. 1992. Organization theory in the postmodern era. In M. Reed & M. Hughes (Eds.), *Rethinking organization—New directions in organization theory and analysis*: 207–226. London: Sage.

Halpern, D. 2005. *Social capital.* Cambridge: Polity Press.

Haslam, S. A. 2001. *Psychology in organizations—The social identity approach.* London: Sage.

Hofstede, G. 1980. *Culture's consequences.* London: Sage.

Kapferer, B. 1972. *Strategy and transaction in an African factory.* Manchester: Manchester University Press.

Kilduff, M., & Tsai, W. 2003. *Social networks and organizations.* London: Sage.

Kipnis, A. B. 1997. *Producing guanxi—Sentiment, self and subculture in a North Chinese village.* Durham: Duke University Press.

Krackhardt, D. 1992. The strength of strong ties: The importance of philos in organizations. In N. Nohria & R. Eccles (Eds.), *Networks and organizations: structure, form, and action*: 216–239. Boston MA: Harvard Business School Press.

Liao, D., & Sohmen, P. 2001. The development of modern entrepreneurship in China. *Stanford Journal of East Asian Affairs,* 1: 27–33.

Lin, N. 2001. *Social capital: A theory of social structure and action.* New York: Cambridge University Press.

Mo, P. H. 2007. The nature of Chinese collective values: formation and evolution. *International Journal of Chinese Culture and Management,* 1(1): 108–125.

Parris, K. 1999. The rise of private business interests. In M. Goldman, & R. Macfarquhar (Eds.), *The paradox of China's post-Mao reforms*: 262–282. Cambridge: Harvard University Press.

Parto, S. 2003. *Economic activity and institutions—Taking stock.* Working paper, Maastricht University.

Peverelli, P. J. 2000. *Cognitive space—A social cognitive approach to Sino-Western cooperation.* Delft: Eburon.

Peverelli, P. J. 2006a. *Chinese corporate identity.* Abingdon: Routledge.

Peverelli, P. J. 2006b. Negotiating space. In K. B. Chan, & L. Douw (Eds.), *Conflict and innovation: Joint ventures in China*: 72 – 94. Leiden: Brill.

Provis, C. 2008. *Guanxi* and conflicts of interest. *Journal of Business Ethics,* 79: 57–68.

Sott, J. 2000. *Social network analysis.* London: Sage.

Scott, W. R. 2001. *Institutions and organizations* (2nd ed.). London: Sage.

Steinfeld, E. D. 1998. *Forging reform in China—The fate of state-owned industry.* Cambridge: Cambridge University Press.

Tang, J., & Ward, A. 2003. *The changing face of Chinese management.* London: Routledge.

Termeer, C., & Koppenjan, J. F. M. 1999. Managing perceptions in networks. In W. J. M. Kickert, E. H. Klijn, & J. F. M. Koppenjan (Eds.), *Managing complex networks—Strategies for the public sector*: 79–97. London: Sage.

Tian, Z., Gao, H., & Cone, M. 2008. A study of the ethical issues of private entrepreneurs participating in politics in China. *Journal of Business Ethics,* 80: 627–642.

Trompenaars, F. 1992. *Riding the waves of culture.* London: Nicholas Brealy.

van Twist, M., & Termeer, C. 1991. Introduction to configuration approach: A process theory for societal steering. In R. in 't Veld, L. Schaap, C. Termeer, & M. van Twist (Eds.), *Autopoiesis and configuration theory: New approach to societal steering*: 19–29. Dordrecht: Kluwer.

van Dongen, H. J., de Laat, W. A. M., & Maas, A. J. J. A. 1996. *Een kwestie van verschil* (*A Matter of Difference*). Delft: Eburon.

Weick, K. E. 1979. *The social psychology of organizing.* New York: McGraw Hill.

Weick, K. E. 1995. *Sensemaking in organizations.* London: Sage.

Whitley, R. 1999. *Divergent capitalisms—The social structuring and change of business systems.* Oxford: Oxford University Press.

Yan, Y. 1996. *The flow of gifts—Reciprocity and social networks in a Chinese village.* Stanford: Stanford University Press.

Yang, K. 2007. *Entrepreneurship in China.* Aldershot: Ashgate Publishing.

Yin, R. K. 2004. *The case study anthology.* Thousand Oaks, CA: Sage.

Yvonne, L., & Guba, E. G. 1985. *Naturalistic inquiry.* Beverly Hills: Sage.

Zhou, Y. 周翼虎, & Yang, X. 杨晓民. 2000. 中国单位制度 (*China's unit system*). 北京：中国经济出版社 (Beijing: China Economy Press).

# Appendix
# Selected Network Interview Questions and Responses

*Respondents*:

Rao: principal of the Yihai kindergarten;

Shi: principal of Yihai2;

Yin: principal of Yihai8;

Hu: administrator of Yihai8;

Wang: CEO of Yihai.

*Questions*:

| | | |
|----|----|----|
| Q1 | Whom in your work environment do you regard as a friend? | The replies to these questions will reveal relatively long term relationships. In SI terms, the replies to this question can reveal inclusions of the respondents relevant to the work situation |
| Q2 | With whom in your work environment do you frequently interact? | This question inquires after operational relationships more directly related to work |
| Q3 | Who has been most helpful to you in your work? | This question is also work related, but refers to irregularly occurring "problems," while Q2 refers to regular activities. In Weick's terms, Q3 inquires about situations that require heightened sensemaking |

*Q1: Friends*

| | |
|----|----|
| Rao | Many (not willing to discuss?) |
| Hu | The principals (Rao, Shi, Yin), Wang |
| Yin | A few real friends, including Jing Zhao (vice-principal, ex Beijing8), Zhiyi Liu (Principal Beijing8 International), and other Beijing8 friends |
| Shi | Yingwei Li, Meilin Zhang (Education Bureau), Shangzhi Yao (Beijing2), Jie Li (Beijing2), Wang/Xing |
| Wang | Spontaneous reply: no real friends; with help list of people of have helped her in the past, rather than friends; moreover, these people seem to be more related to Yihai Garden than to Yihai Education |

*Q2: Frequent interaction*

| | |
|---|---|
| Rao | Yin, Wang |
| Hu | The principals (Rao, Shi, Yin), Wang |
| Yin | Xie Jing (Yihai8, ex Beijing8) |
| Shi | Commission, Hu, Shuhua Wu (Yihai2, ex Beijing2), Daoyuan Liu (Yihai2, ex Beijing2) |
| Wang | Vice-general managers |

*Q3: Help*

| | |
|---|---|
| Rao | Wang |
| Hu | Principals, Wang |
| Yin | We all help one another |
| Shi | Hu, Shuhua Wu (education director), Daoyuan Liu (administration director), Yingwei Li |
| Wang | Youhe Yu (Huaxiang Administrative Region of Fengtai), Yingwei Li |