Management and Organization Review 1:3 437–458
1740-8776

Particularistic Trust and General Trust: A Network Analysis in Chinese Organizations[1]

Jar-Der Luo
Tsinghua University, Beijing, Peoples' Republic of China

ABSTRACT In this paper, I examine the structural positions in two different types of networks and their relationship to trust. I propose two types of trust: particularistic which is trust in specific other individuals and general trust in colleagues and the organization as a whole. The findings suggest that both centrality in the friendship network and the go-between position in advice networks are related to particularistic trust towards the other individuals in the networks. Particularistic trust, in turn, is associated with the two kinds of general trust. I introduce the Chinese concept of *pao* to explain the Chinese dynamic of trust formation in interpersonal networks.

INTRODUCTION

Trust has been the focus of organizational studies since the mid-1980s with most research emphasizing generalized trust and confirming its importance for organizational development and success in American business settings (Cummings and Bromiley, 1996; Krackhardt and Hanson, 1993; Miles and Creed, 1995). However, most research either focuses on the question of who is trustworthy (Mishra, 1996), or an individual's propensity to trust (Downes et al., 2002; Rotter, 1971; Sitkin and Pablo, 1992). The structural basis of trust in organizational settings is still not fully understood. This paper reports a study that used a social network perspective for understanding the formation of trust. I first distinguish trust in specific individuals, which I will call 'particularistic trust', from trust in non-specific others, which I will call 'general trust'. Then, I examine two structural factors important to the formation of the two kinds of trust. Specifically, I pose the question: does a person's structural position in friendship and advice networks lead that person to trust in others more, whether in specific others or in general?

We know much about who is trustworthy through studies of characteristics-based trust. Trustworthiness may derive from a person's competence, personality traits, expressed sense of morality (Butler and Cantrell, 1984), or from observa-

© 2005 The Author
Journal compilation © 2005 Blackwell Publishing Ltd, 9600 Garsington Road, Oxford, OX4 2DQ, UK and 350 Main St, Malden, MA, 02148, USA

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

tions of benevolent behaviors (Butler, 1991; Mishra, 1996). Trusting in others may also be influenced by the social cognitions of the trusting person. For example, affect underlying social relations has been shown to influence an individual's trust in others (Smith, 1995, 2002). Thus, trusting and trustworthiness are the twins of the concept of trust. In managerial practice, a firm not only likes to recruit those with trustworthy traits, but also wishes that its employees trust other employees. However, the organizational studies on the propensity to trust mostly focus on an individual's traits, such as personality, social and economic backgrounds, cultural difference, and personal attitudes (Downes et al., 2002; Hollon and Gemmill, 1977; Rotter, 1971; Sitkin and Pablo, 1992; Yamagishi and Yamagishi, 1994).

Since trust is cognitively embedded in social relations, an individual's position in a network structure should influence his or her trust toward particular persons. I argue that a person who is more socially embedded will trust a larger number of other persons. Furthermore, a person who trusts more individuals is more likely to say that they trust their co-workers in general and the organization that they work for. Consequently, this paper uses the social network theory to extend our understanding of trust in particular individuals and trust in general.

CONCEPTUAL BACKGROUND AND HYPOTHESES

Most scholars accept Deutsch's (1958) suggestion that risky situations require trust. In his definition, trust embodies two crucial requirements. First, there are some social uncertainties or risks involved in the social relationship, which make one person vulnerable to exploitation by others. Second, the expectation of one side's goodwill allows the partner to ignore these risks. However, scholars are not in general consensus on how best to conceptualize and measure the concept of trust. Psychological approaches emphasize how an individual's personality causes different attitudes of readiness to trust (Butler, 1991; Hollon and Gemmill, 1977; Mishra, 1996; Rotter, 1971; Sitkin and Pablo, 1992). On the other hand, organizational researchers also point out that institutional arrangements influence people to act in predictable ways (Gambetta, 1988; Zucker, 1986). Both of these two approaches have developed a construct best termed 'general trust', since no particular dyadic relations are theoretically specified. General trust is based on the universal propensity to trust others. Barber defined general trust as the 'expectation of the persistence and fulfillment of the natural and the moral orders' (Barber, 1983, p. 9). In other words, Barber believes that a person might trust a complete stranger because he believes that the latter is acting in accord with dominant norms and standards.

In contrast, social network theorists argue that social ties and types of network structure play important roles in the process of producing trust in specific others (Granovetter, 1985; Uzzi, 1996). Trust of this sort is built upon particular dyadic relations. One trusts specific persons because of one's unique personal relation-

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

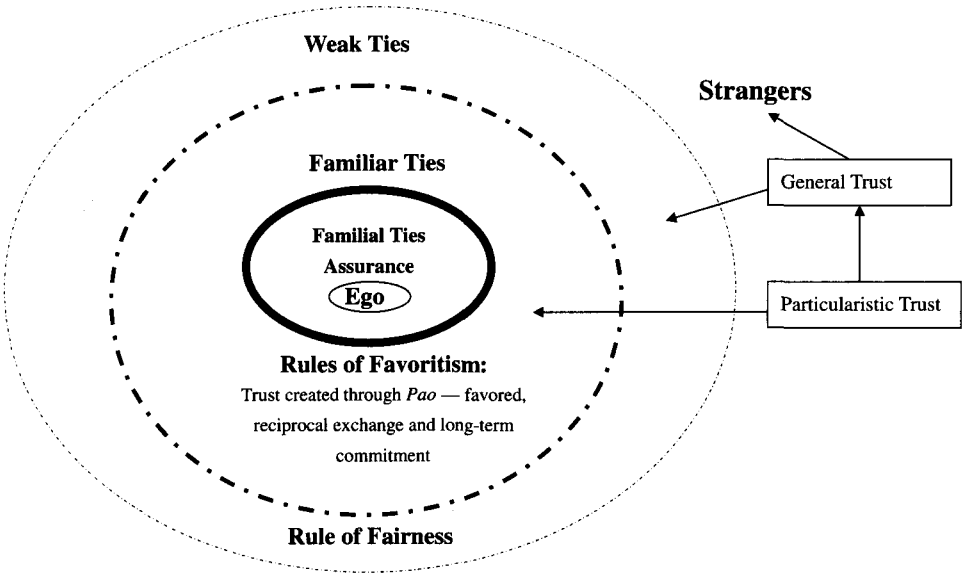


Figure 1. Framework of Network Circle Differentiation and Favor Exchange

ships to them. Thus, trust is best classified into two categories: general trust and particularistic trust. In contrast to general trust, particularistic trust exists only in particular dyads. Investigating the formation of particularistic trust is especially important for Chinese managerial studies. Based on Fei's framework of network circle differentiation (1948), Hwang's three categories of Chinese social relations (1987) and Yamagishi et al.'s emancipation theory (1998), I propose a framework of network circle differentiation and relationship to the two types of trust as illustrated in Figure 1. A Chinese person divides his or her social ties into several circles and different circles imply different moral standards. The innermost circle generally consists of family members and extended kin (Chen, 1994). Following the argument of emancipation theory, such involuntary relationships must be characterized by assurance, rather than trust (Yamagishi and Yamagishi, 1994; Yamagishi, Cook and Watabe, 1998). Familiar ties, including friends and persons to whom one feels particularly close, fit in the next ring under the 'rules of favoritism', by which particularistic trust can be built up from frequent exchange of favors (Hwang, 1987; Tsui and Farh, 1997). Weak ties fit in the outermost ring under the 'rules of fairness' and may come to be personally trusted based on general ethical principles of fairness and the conservative process of repeated exchange.

In the category of familiar ties, an indigenous Chinese concept called *pao*, (translated as the norm of reciprocity in English), is a highly appreciated basis of morality in China. Returning another person's favors is an obligation expected within the whole of Chinese society. Accepting favors but forgetting to return them is blameworthy, leading to increased pressure for individuals to reciprocate. By what Chinese

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

scholars term 'favoritism' (Hwang, 1987), exchanging favors is actually one of the best ways to build up strong *guanxi* (the Chinese term for relations or connections). This is in keeping with the principle of *pao* in long-term favor-exchanging processes that enhances the probability that all parties of the *guanxi* will come to trust each other. The concept of *pao* is close in meaning to what Coleman (1990) called 'obligations and expectations' embedded in his construct of social capital. *Pao* builds up process-based trust, which is rooted in the reciprocity in social interactions (Creed and Miles, 1996; Zucker, 1986). Process-based trust is embedded in specific social relations, and *pao* provides a mechanism embodying these crucial requirements of trust of this sort among Chinese people.

The concept of *pao* also parallels what Hardin (2001) called the 'encapsulated-interest account' of trust. This explanatory model suggests that trust arises from the care for each other's interests embedded in repeated social exchanges. Attention to long-term interests leads each party to behave in trustworthy ways, so the other side builds up trust in him or her. *Pao* demonstrates the encapsulated-interest account of trust exactly, but differs in affective expressions. In *pao*, the expectation of instant returns and the bargaining of interests should be discouraged. Under the claim of brotherhood, the expectation of favor-returning behavior should not be expressed by the favor-giver but should be stored in the 'favor account' of the favor-receiver. A well-known Chinese story refers to the fact that thirty years is not too late to return a favor, meaning that remembering and returning favors from even thirty years earlier is an honorable act, and behavior of this sort is highly appreciated in Chinese culture. *Pao* delineated in Figure 1 offers a Chinese mechanism for integrating network positions into my analyses. I use the constructs of particularistic and general trust as a means to further our understanding of the development of trust in Chinese organizations.

Bringing Social Network Theory In

Social network theory has been deeply involved in trust studies. However, most research has been focused on the relational level studying what kinds of social ties encourage the build up of mutual trust, such as via exchange relations (Blau, 1964; Hwang, 1987), strong ties (Granovetter, 1985; Krackhardt, 1992; Uzzi, 1996), mutual identification (Sheppard and Tuchinsky, 1996), and so on. This paper takes individuals as the analytical units, and investigates an individual's propensity to trust due to his or her structural position in a social network. Social network theory has also forged a tradition of structural studies in organizational settings (Burt, 1992; Lin, Fu, and Hsung, 2001). For example, the central position in a friendship network can generate informal power for the focal person (Krackhardt, 1992). Burt (1992) offers strong evidence that structural holes – go-between positions among disconnected individuals or groups – lead to more abundant information and business opportunities, and thus more chances to obtain a promotion in firms. Fol-

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

lowing this tradition of 'meso-level' social network studies (Brown, 1997), this study examines the structural positions in two different types of networks in generating trust in other individuals.

The Impact of Network Structure on Trust

Central position in friendship networks. First, the central position in a social network offers better connections with other group members. Central positions convey informal social influence (Brass and Burkhart, 1992), which is why a central position is an indicator of prestige and power (Wasserman and Faust, 1994). The resources invested in central positions create opportunities for greater control over the outside environment. Since effective personal control reduces uncertainty, more centrally located persons would regard others as more trustworthy than would persons in peripheral positions, due to their relative control over the organizational environment.

Granovetter (1973) emphasized differences between two types of social ties – strong and weak. In general, strong ties have longer histories and higher interaction frequencies than weak ties. In particular, strong ties more often involve intimate conversations and behaviors (Marsden and Campbell, 1984). Krackhardt (1992) refers to this type of tie as a 'philo' relation – that is a friendship tie. His 'strength of strong ties' proposition holds that the central person in a philo network possesses underground power, since the position holder can influence others to complete his or her personal goals with little risk.

In addition to better control over environment, more central positions within friendship networks also indicate the increased status of possessing many friends. The central individuals generally believe friends will not betray them because of the norm embedded in *pao*. They know the character of the people they call friends, and they know that if someone betrays them, their friends are ready to report the misdeed to them and to shame the wrongdoers. Friendship networks are known to provide emotional support (Wellman, 1992; Wellman and Frank, 2001). Emotional supporting behaviors strengthen the impression of benevolence that in turn may promote the cognitions of consistent and reciprocal goodwill. The central individuals can expect that friends should treat them in a reciprocal way. Therefore, one's friends can gain one's trust through favor-return behaviors – i.e., providing emotional support, impressions of benevolence, and the bestowing of goodwill. These expectations are consistent with the cultural norms embedded in *pao*. Therefore, combining the 'strength of strong ties' idea and the concept of *pao* allows the generation of my first hypothesis:

Hypothesis 1: People who are more central in friendship networks tend to have higher levels of particularistic trust in the network, while people who are more peripheral in friendship networks tend to have lower levels of particularistic trust in the network.

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Go-between position in advice networks. An important counterpart of a friendship tie is an advice tie. Krackhardt (1992) asserts that an advice tie is the main form of weak tie in organizational settings. Even though advice ties need not involve emotional support, they channel most of the resources required by routine jobs (Krackhardt and Hanson, 1993). Advice ties generally involve information flows and knowledge diffusion, which can provide useful resources to both sides in business talks, as suggested by Granovetter's arguments in his work on the 'strength of weak ties' (1973). A person from whom many colleagues seek advice is generally the one holding informal power based on knowledge, since his or her professional expertise can control the key knowledge which may be a critical resource for others (Brass and Burkhardt, 1992; Krackhardt, 1992).

The social exchange of valuable resources can produce trust on both sides. Blau (1964) argues that a person engaging in social exchanges, unlike economic exchanges, cannot expect instantaneous rewards, so he or she depends on the goodwill of the other side, in expectation of future reciprocation. Exchange partners in successful social exchanges gradually build up trust on both sides. Knowledge and information exchanges are an important part of *pao*, since they are seen as valuable resources in Chinese organizations.

A go-between position in an advice network enables access to important information and knowledge at the appropriate time. Further, because people in go-between positions or 'bridges' have control over such information or knowledge, they have power in the network. Information cannot flow through the network without them. The more power they have to disrupt the flow of information, the more confidence they have in others. This is because the others who are dependent on the go-between person for information must behave in a trustworthy way to earn the trust of the go-between information broker. The go-between persons know that they are less likely to be cheated by those who depend on them for information than by those who do not. This argument is consistent with Burt's theory of 'structural holes' (1992). A go-between status of this sort renders more social exchanges to its owner. The structural holes proposition and Blau's social exchange theory are consistent with the expected behavior under *pao* and provide me with a second hypothesis, accordingly:

> *Hypothesis 2: People who are in-between other actors in an advice network tend to have higher levels of particularistic trust in the network, relative to people who do not mediate the flows of information in an advice network.*

Particularistic trust and general trust. As the concept of *pao* implies, a Chinese engaging in favor-exchange preserves the expectation of the goodwill of others and possible return of favors in the future. Successful accumulation of specific experiences of favor exchanges by a 'center' or a 'bridge' also raises his or her expectation of and confidence in the return of goodwill by others in general. That is, one's expe-

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

rience in particular relations should generalize to people in general. In addition, abundant evidence of return of favors provides a 'center' or 'bridge' with rich resources, which in turn make the environment more secure for the 'center' or the 'bridge', compared to people in general. The informal power owned by the central or go-between person not only strengthens control over his or her dyadic relations, but also reduces uncertainty within the whole working environment. This aids his or her tendency to trust others in general. So the third hypothesis follows:

Hypothesis 3a: People who express higher levels of particularistic trust in the network tend to express a higher level of general trust in both coworkers and in the organization they work for.

According to the hypotheses stated above, the accumulation of trust toward many individuals through *pao* for persons who are central to friendship networks, or who occupy positions of betweenness in advice networks, is likely to lead to general trust, because of the particularistic trust in others. The discussion implies that the network position should also have a direct effect on general trust. However, I argue that the influence of network position on general trust is indirect, through particularistic trust. Therefore, I further hypothesize:

Hypothesis 3b: Particularistic trust mediates the relationship between network positions and general trust.

Figure 2 outlines the hypothesized relationships of network positions on the two types of trust, along with several control variables.

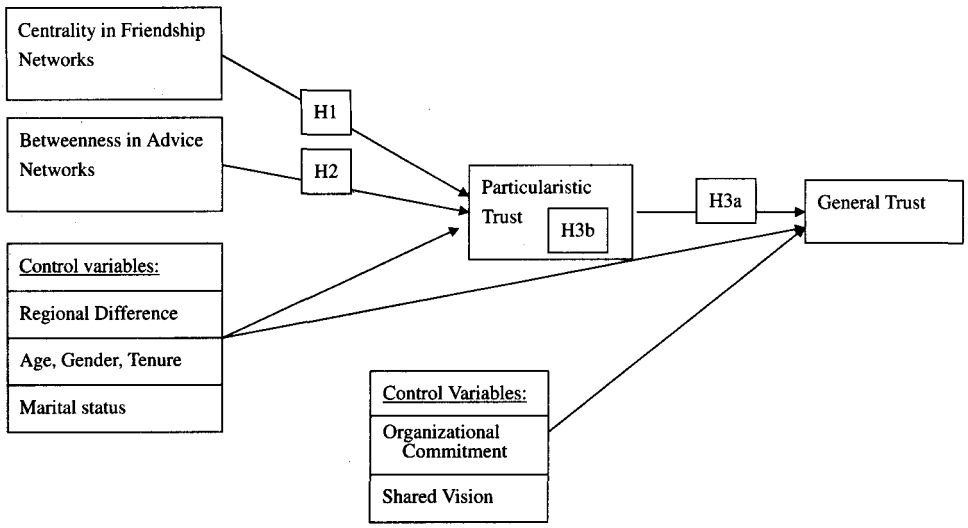


Figure 2. A Research Model of Network Structure. Particularistic Trust and General Trust

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Some Attitudinal Controls of General Trust

Some attitudinal explanations of trust are included as control variables. These are suggested by previous research. A wealth of research has investigated the origins of macro-level trust formation. Norms, folkways, social values, and moral codes all influence the formation of trust in any society (Fukuyama, 1996; Yamagishi and Yamagishi, 1994). In organizations, there is evidence that shared vision significantly increases beliefs in general trustworthiness (Tsai and Ghoshal, 1998). A group of people who share similar norms, values, and moral codes tend to trust each other and cooperate with 'we-group' members (Zucker, 1986). This is what is called 'identification-based trust' by Sheppard and Tuchinsky (1996). In organizational settings, high commitment motivates workers to work hard voluntarily for the benefit of the firm (Robinson and Morrison, 1995). Porter and Smith (1970) define organizational commitment as an attitude by which an employee is socialized into the goals, values, and norms of a firm. Commitment includes an employee's loyalty to, identification with and involvement in the firm. A person with high commitment tends to share similar vision with the firm and to trust their colleagues and the organization as a result. Therefore, in estimating the effect of network structure on trust, I control for shared vision and organizational commitment.

METHODS

Sample and Procedure

Only groups with clearly defined boundaries qualify to test my hypotheses; as I study structural factors unique to group networks. I chose two companies through a convenient sampling process. One is in mainland China and one is in Taiwan. I do not expect the effects to differ in the two samples because of the robustness of structural effects. I sampled from the two locations to ensure some level of generalizability in the findings. I will include interaction terms to ensure that the effects do not differ by sample.

The mainland China sample is the subsidiary of a multinational high technology company listed in the top five high tech firms in Taiwan. This firm is one of the top producers of mobile phones, CD drives, and computer monitors in Taiwan. The main business of this company is OEM/ODM work for world-famous brands like Motorola, Dell, and IBM. The main factory is in Suzhou, China, where 460 administrative personnel supervise more than 6000 workers. The Suzhou factory provides the research site for collection of mainland Chinese trust and network data. I call this firm the 'MNC Mainland' firm. The sample consists of 22 departments across two plants. One plant produces monitors and CD drives. The other plant produces mobile phones for telecommunications industries.

I distributed the network questionnaire to the firm's 460 white-collar workers. I then eliminated those who answered 'yes' for more than 80% of departmental col-

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

leagues in all of the items for the whole-network questions (i.e., he or she trusts almost everyone in everything). I also removed data with invalid or missing items from the final analyses. Specifically, the worse cases were from two departments with missing or invalid whole-network data of more than 20% – rendering those departments' data useless, since there were some key persons, such as centers or bridges, missing when the invalidation rate reached 20%. Such cases must be deleted because their inclusion would seriously distort the computation of structural indicators. After excluding missing or invalid data from the remaining 20 departments, I eventually ended up with 355 usable cases. Next, I distributed attitudinal questionnaires to those individuals with usable data in the first step, resulting in 252 second-step questionnaires. Excluding data with missing items, 193 usable whole-network and attitudinal questionnaires remained for analysis, a response rate of 42%.

The second sample is from an agent firm of IBM in Taiwan. I will refer to this as the 'Taiwan's IBM Agent' sample. It is a system-design and information service company with an organizational culture learned from IBM, which emphasizes empowerment, openness, a team-working spirit, and whole-life learning. One hundred and seventy-five questionnaires were distributed to Taiwan's IBM Agent's white-collar employees. Since many of them frequently work off-campus at their customers' sites, we made three separate visits to collect all the data. Similar to the Mainland procedure, we first eliminated those who answered 'yes' for more than 80% of the department members on all items. Then, an 'insider' helped me check the validity of the survey in his department. In the final analysis, I judged 125 valid surveys of partially usable whole-network and attitudinal questionnaires. Excluding invalid data due to missing items, the final usable number of questionnaires was 103, or 59%.

In total, I have 296 usable surveys (193 from mainland China and 103 from Taiwan). The respondents from mainland China were younger than the respondents from Taiwan (about a 6 year difference, $p < 0.0001$). Their company tenure is also different from the mainland China sample having shorter tenure than the Taiwan sample (about 0.65 years, $p < 0.01$). There were 46.3% of females in the mainland China sample and 32.8% in the Taiwan sample. Sample differences were controlled for in the hypotheses testing analysis.

Measures

The measurement of an individuals' propensity to trust others in general has been well explored (Cummings and Bromiley, 1996), but trust in particular persons on the individual level awaits better measurement. This paper develops the measurement of particularistic trust.

Each questionnaire consists of two parts. The first part surveys whole-network data. This part includes 11 questions in matrix format. The first column of the matrix lists the 11 questions and the row lists the names of all white-collar workers

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

in the respondent's department. The average number of valid cases per department across the two companies is about 11, with a maximum of 24 and a minimum number of 5 employees. The employees were asked to check the kinds of relationships they have with each person in their department. The second part collects attitudinal and general trust data using Likert-type seven-point scales.

Next, I assigned an assistant to complete a field study within the human resource department of the MNC Mainland firm for the purpose of refining the questions in order to fit the Chinese working environment. Finally, sixty-five employees were asked to answer the pre-test questionnaire. With the help of the department secretaries, the assistant checked the validity of respondent answers. Eventually, 20 Likert-scale questions and 11 whole-network questions were selected for use in my final questionnaire. The following sub-sections describe all the measures in the survey.

Measurement of trust. Measures included both particularistic and general trust. In order to let employees clearly delineate their trust to particular ties, rather than give rough estimations, I employed a whole-network type of questionnaire, instead of a Likert-scale type questionnaire. The main benefit of the whole network data technique is that it allows for measuring the number of trust relations, that is, out-degree centrality, an index developed by network analysts.

I adopted Mishra's taxonomies of trustworthiness (1996) to measure particularistic trust with four items – 'I think that he/she is honest.' 'I think that he/she is competent at his/her job', 'I think that his/her behavior is stable', and 'I think that he/she is concerned about my interests.' In addition, I added the question 'Who are the most trustworthy persons?' Then, I computed the standardized amount of out-degree centrality from responses to these five items. Finally, I averaged the values of the five indicators to obtain a single index of particularistic trust. Out-degree centrality of employee i's trust is computed by:

$$\Sigma_j x_{ij} / (g-1)$$

Where x_{ij} is 0 or 1, indicates whether employee i recognizes a trust relationship with employee j; and where g is the network size. Higher degrees indicate more particularistic trust by the focal person.

To measure general trust, I employ nine attitudinal items based on Likert 7-point scales. All of these items are modified from Cummings and Bromiley's organizational trust inventory (1996). Three items are selected from each of the three constructs of their organizational trust measure – i.e., trust in colleagues, trust in leaders, and trust in one's organization. The nine items measuring general trust are listed in Table 1.

The results of the exploratory factor analysis shown in Table 1 indicate that three latent factors underlie trust.[2] The five items of particularistic trust are cat-

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Table 1. Exploratory factor analysis of trust items

	Mean	*Std.*	*Factor 1*	*Factor 2*	*Factor 3*
Item description			*Particularistic trust*	*General trust in colleagues*	*General trust in the organization*
			Rotated Factor Pattern		
Whole-Network Questions					
1 I think that he/she is honest.	2.51	2.34	**0.76**	−0.02	0.08
2 I think that he/she is competent for his/her job.	3.11	2.69	**0.85**	0.04	0.13
3 I think that his/her behavior is stable.	2.52	2.45	**0.87**	0.12	0.03
4 I think that he/she is concerned about my interests.	2.76	2.58	**0.80**	0.14	0.09
5 Who are the most trustworthy persons?	1.99	1.64	**0.85**	0.06	0.08
Trust Inventory Questions					
1 I think that my colleagues talk straight.	4.81	1.29	0.09	**0.85**	0.18
2 I think that my company encourages me to speak openly and talk freely.	5.23	1.14	0.11	**0.71**	0.37
3 I think that my colleagues exchange information and opinions freely.	4.97	1.27	0.02	**0.83**	0.20
4 I think that my department head is honest.	5.12	1.18	0.10	**0.56**	0.49
5 I think that I will get advance notice before any changes about my job.	4.99	1.10	0.09	0.23	**0.67**
6 I think that my department head will clearly explain the firm's decisions to me and make me satisfied.	5.11	1.11	0.18	0.38	**0.73**
7 I think that my colleagues are honest.	5.21	1.19	0.08	**0.68**	0.38
8 I think that my decisions in my work are often respected by my company.	4.77	1.31	0.05	0.19	**0.82**
9 I think that my company takes its employees' opinions seriously.	4.96	1.30	0.09	0.30	**0.82**
Cronbach α			0.85	0.87	0.83
Eigenvalues			5.48	3.12	1.03

egorized under one factor, with the reliability test using Cronbach's α of 0.85. The items of trust inventory can be divided into two categories. One of the constructs includes items 1, 2, 3, 4, and 7 with Cronbach's α equal to 0.87. Since these items are all related to colleagues and leaders, I refer to this scale as measuring 'general trust in colleagues'. The second general trust scale includes items 5, 6, 8, and 9 with a Cronbach's α value of 0.83, and it appears to refer to the construct of 'general trust in the organization'. I then computed the trust measures by taking the average score of the items that load on each factor.

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Measurement of network structural variables. I next computed measures of in-degree centrality in the friendship network and betweenness in the advice network, using Krackhardt and Porter's 'friendship and advice networks' questionnaires (1985) for the whole-networks. Three questions are used to survey friendship networks – 'After being criticized by your employer, from whom do you seek emotional support?' 'With whom do you talk about your private affairs during your daily chats?' and 'Who can be listed among your three best friends?' I computed in-degree centrality for each respondent. Then, I averaged the values of the three friendship indicators to indicate an individual's central position in the friendship networks. The formula for computing in-degree centrality of employee j is:

$$\Sigma_i x_{ij}/(g-1)$$

where x_{ij} is 0 or 1, indicating whether employee i recognizes a relationship with employee j; and g is the network size. High in-degree centrality means a more central position.

Advice networks were measured using three questions from the whole-network questionnaire – 'When you encounter difficulty in your job, from whom do you ask help?' 'With whom do you like to discuss your daily work?' and 'When you encounter difficulty in your job, who may actively come to help you?' Betweenness centrality is used to indicate the go-between position in the three advice networks. I averaged the three betweenness centrality items to obtain a single indicator of an individual's go-between position in the network structure. Betweenness centrality is computed using:

$$2\Sigma_{j<k} g_{jk}(n_i)/g_{jk}(g-1)(g-2)$$

where g_{jk} is the number of geodesics (shortest-distance paths from one node to another) by which employee j can reach employee k; and $g_{jk}(n_i)$ indicates the number of geodesics by which j can reach k via employee I, g is again indicative of network size. A person with high betweenness centrality frequently mediates others' needs.

Measurement of attitudinal controls. I constructed eleven items as attitudinal controls based on the previous literature. Three Likert items measure shared vision. These items are 'This organization really inspires the very best in me in the way of job performance'; 'I have opportunities to do some meaningful work in my job'; and 'I think that my job helps me to complete my career goals'. I also translated a questionnaire designed by Mowday, Steers, and Porter (1979) to measure organizational commitment. After analysis of my pre-test results, I chose eight of their original items to form my own construct; they are separately 'I am willing to put in a great deal of effort beyond that normally expected in order to help the organization be successful', 'I talk up this organization to my friends as a great orga-

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

nization to work for', 'I find that my values and the organization's values are very similar', 'I am extremely glad that I chose this organization to work for over others I was considering at the time I joined', 'I am proud to tell others that I am part of this organization', 'I would accept almost any type of job assignment in order to keep working for this organization', 'I really care about the fate of this organization' and 'for me this is the best of all possible organizations for which to work'. A confirmatory factor analysis supported the two factors with clear loading. The fit statistics Bentler & Bonett's Non-normed index is 0.911 and RMSEA is 0.074.

Theoretical Model

Particularistic trust and general trust are taken as the dependent variables in the following regression models:

$$\Upsilon_1\beta\alpha + \beta_1 X_1 + \beta_2 X_2 + \gamma_1 Z_1 + \gamma_2 Z_2 + \gamma_3 Z_3 + \gamma_4 Z_4 + \gamma_5 Z_5 + \gamma_6 Z_6 + \gamma_7 Z_7 + \varepsilon \ldots \quad (1)$$

$$\Upsilon_2\beta\alpha + \beta_0 \Upsilon_1 + \beta_1 X_1 + \beta_2 X_2 + \gamma_1 Z_1 + \gamma_2 Z_2 + \gamma_3 Z_3 + \gamma_4 Z_4 + \gamma_5 Z_5 + \gamma_6 Z_6 + \gamma_7 Z_7 + \varepsilon \ldots \quad (2)$$

where Υ_1 is a vector of particularistic trust – the outdegree centrality of the trust networks.

Υ_2 is a $2 \times n$ matrix, including the two vectors of general trust. These constructs measure trust in general colleagues and trust in the organization.

X_1 is the in-degree centrality of the friendship network.

X_2 is the betweenness centrality of the advice network.

Z_1 is a dummy variable indicating a regional difference with mainland Chinese workers coded 0 and Taiwanese workers coded 1. Z_2 to Z_7 are the six variables for controlling the influence of personal attitudes and features. The individual traits are gender, age, marital status and tenure. The variable of gender was coded as a dummy variable with male equal to 0 and female as 1. Age is a categorical variable, including six classes – under 20, 20 to 24, 25 to 29, 30 to 34, 35 to 40, and older than age 40.[3] 'Married' is indicated as 0, while 'not married' as 1. Company tenure is measured in years as a continuous variable. Z_6 is the attitudinal variable of shared vision, and Z_7 is organizational commitment.

RESULTS

Table 2 shows all the correlations between variables. Particularistic trust is significantly and positively correlated with the two structural variables. Gender and sample are significantly and negatively associated with particularistic trust (with females and Taiwan employees expressing lower trust). The two structural variables are also correlated with each other. However, only 'go-between position in

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Table 2. Correlation table of all variables

Variables	*Mean*	*SD*	*Mean (Mainland)*	*Mean (Taiwan)*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1 Region (1 = Taiwan)	0.35	0.48													
2 Gender (1 = female)	0.41	0.50	0.46	0.33	−0.13*										
3 Age (5 categories)	2.00	1.08	1.48	2.86	0.62***	−0.19***									
4 Marriage status (1 = single)	0.67	0.59	0.82	0.34	−0.70***	0.03	−0.14*								
5 Tenure (years)	2.38	1.62	2.13	2.78	0.19***	−0.03	0.50**	0.13*							
6 Shared vision	4.69	1.09	4.50	5.16	0.27***	−0.14*	0.23**	−0.14*	0.13*						
7 Organizational commitment	4.91	0.95	4.77	5.10	0.18**	−0.13*	0.19**	−0.04	0.10	0.77**					
8 Central position in friendship networks	0.19	0.13	0.21	0.17	−0.14**	−0.12*	−0.12*	0.13*	−0.06	−0.10	−0.04				
9 Go-between position in advice networks	0.05	0.06	0.06	0.03	−0.25***	−0.14*	−0.06	0.26**	0.11*	−0.01	−0.02	0.36**			
10 Particularistic trust	0.27	0.21	0.29	0.24	−0.11*	−0.18**	−0.10	0.03	−0.13*	0.06	0.08	0.42***	0.32**		
11 General trust in colleagues	5.06	0.98	5.08	5.06	−0.01	−0.16**	−0.02	−0.01	0.00	0.47***	0.48***	−0.01	0.05	0.18**	
12 General trust in the organization	4.95	0.99	5.03	4.82	−0.10	−0.09	−0.09	0.04	−0.02	0.47***	0.52**	−0.02	0.11	0.22**	0.69***

Notes: *p < 0.05, **p < 0.01, ***p < 0.001.

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

Table 3. The regression results of particularistic trust

	Particularistic Trust	
	Model 1	*Model 2*
Intercept	0.10	0.004
Controls		
Sample (1 = Taiwanese)	−0.17***	−0.12*
Gender (1 = female)	−0.08***	−0.05*
Age	0.02	0.02
Marital status (1 = unmarried)	−0.06	−0.05
Tenure	−0.01	−0.02
Shared vision	0.007	0.009
Organizational commitment	0.02	0.02
Structural Variables		
Central position in friendship networks		0.42***
Go-between position in advice networks		0.66**
R^2 change		***0.13***
Overall adjusted R^2	***0.08***	***0.21***
Model F value	4.68***	8.01***
Standard error	0.20	0.19
Degree of freedom	289	287

Notes: *p < 0.05, **p < 0.01, ***p < 0.001.

advice networks' has a slight association with 'trust in the organization', while the two constructs of general trust are highly correlated with the two attitudinal controls. Particularistic trust is also positively associated with the two measures of general trust.

The results of regressing particularistic trust on the two explanatory variables and the seven control variables are shown in Table 3. Results show that both friendship and advice networks are important for enhancing particularistic trust. Additional analysis using the interaction terms of sample and network structure variables (Taiwan vs. Mainland) shows that the effects of the two network variables are similar in the two samples. H1 and H2 are supported.

The results on the control variables show that one of the four individual traits contribute significantly to particularistic trust. Males tend to have more particularistic trust than females. The attitudinal controls – organizational commitment and shared vision – show no statistical significance. Sample differences indicate greater particularistic trust among Mainland Chinese than Taiwanese workers, when other variables are controlled through the regression analyses.

Table 4 shows the results of the two general trust variables regressing on the two network structure variables, particularistic trust, and the seven control variables. The two structural variables – central position in friendship networks and

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Table 4. The regression results of general trust

	Trust in general colleagues		*Trust in the organization*	
	Model 1	*Model 2*	*Model 3*	*Model 4*
Intercept	2.54***	2.49***	1.95***	1.98***
Controls				
Sample (1 = Taiwanese)	−0.34	−0.25	−0.48*	−0.34
Gender (1 = female)	−0.25*	−0.20*	−0.08	−0.01
Age	−0.07	−0.08	−0.09	−0.11
Marital status (1 = unmarried)	−0.15	−0.10	−0.13	−0.08
Tenure	0.01	−0.02	0.00	−0.01
Shared vision	0.29***	0.29***	0.29***	0.28***
Organizational commitment	0.26**	0.24**	0.34***	0.32***
Structure and Trust Variables				
Central position in friendship networks		−0.10		−0.62
Go-between position in advice networks		−0.42		0.53
Particularistic trust		0.76**		0.98***
R^2 change		0.05		0.03
Overall adjusted R^2	***0.29***	***0.34***	***0.34***	***0.37***
F Value	18.3***	12.19***	22.91***	14.78***
Standard error	0.83	0.82	0.81	0.79
Degree of freedom	289	286	289	286

Notes: *p < 0.05, **p < 0.01, ***p < 0.001.

go-between position in advice networks – have no significant relationship to the two general trust variables. As hypothesized, particularistic trust is significantly related to both of the general trust variables, adding 5% explained variance to the model of general trust in colleagues, and 3% of the variance to general trust in the organization. H3a is supported.

The correlations in Table 2 show no significant relationship between the two structural variables and the two general trust variables. This does not satisfy the condition for mediation (Baron and Kenny, 1986). Therefore, H3b could not be tested and is not supported. However, the results in Table 3 and Table 4 combined show that the effect of network structure on general trust is indirect, through particularistic trust.

Several control variables are significantly related to the two general trust variables. Among the individual traits, female status reduces trust in colleagues in general, probably due to the less central and go-between positions they held in their networks (the correlation between gender and centrality is −0.12, $p < 0.05$, between gender and go-between is −0.14, $p < 0.05$). The two attitude control variables are significantly related to both forms of general trust, in part due to common method variance.

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Lastly, additional analysis using the interaction of sample with the two structural variables and the particularistic trust variable did not produce significant results. This suggests that the functional relationships between these variables are invariant across the two samples.

DISCUSSION

We can draw several conclusions from this study. First, the 'strength of strong ties' proposition receives support in both the Chinese and Taiwanese samples. A person with informal influence (by holding a central position in a friendship network) tends to trust more people. However, it is also possible that as a person takes more colleagues as friends he or she becomes more trusting. This, in turn, may lead him or her to have a more central position in the network. Thus, a structural position, though a static concept, may reflect a dynamic process of trust formation. Future research should explore the process of trust development in social networks.

Second, a go-between position in Chinese advice networks significantly impacts the formation of particularistic trust. This is consistent with the social exchange theory I discussed earlier. Social exchange, through consultation and swapping of information, produces mutual expectations of reciprocity and trust (Blau, 1964; Coleman, 1990). However, a better explanation is the resource exchange idea. It has been previously shown as the main source of mutual trust in Chinese working environments (Luo, 2005). Go-between bridges provide the primary mechanism for mediating information exchange among otherwise unconnected people. For example, a Chinese middleman generally obtains rich resources in the process of exchange in such settings, so he or she needs to trust the goodwill of his or her connections.

Finally, particularistic trust increases the tendency to trust others in general. Successful experience of resource exchange enhances feelings of security and expectations of reciprocation of goodwill even from strangers. However, the results suggest that the influence of network positions on general trust is indirect, through particularistic trust. This is consistent with the Chinese culture where trust of 'strangers' is through trust of 'familiar persons'.

Before discussing implications of this study for future research, I acknowledge several limitations to my study. First, my data is a convenience sample from available firms, rather than a random sample from a known population. Also, the sample is very young, with an average age of less than 25 and a company tenure of less than three years. It would be necessary to replicate this study with other samples to increase the generalizability of my findings to other Chinese organizations or older employees. Second, the two attitude control variables were obtained in the same survey as the two general trust measures. The relationship between them may be contaminated by the common method variance problem. However, the main results were based on two structural measures and their rela-

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

tionships to trust are unlikely to be caused by the common method. Lastly, the nature of causality between structure and trust is unclear with cross-sectional data. Even with the possibility of reverse causation, the fact that centrality and betweenness are associated with propensity to trust other, specifically or in general, is a new insight that could add to the literatures on both social networks and trust.

Some findings deserve more discussion and elaboration of their implications for future research. Holding central positions in friendship networks implies endowment of informal influence (Krackhardt, 1992), thus investing central position holders with social influence over co-workers in an organization. This asymmetric investiture of social influence allows informal leaders to believe they can control and predict co-worker behavior. Since trust entails the risk of not being reciprocated (Yamagishi, Cook, and Watanabe, 1998), Chinese norms of reciprocity embedded in *pao* and institutionalized in *guanxi* help reduce such risks. *Pao* promotes larger networks of familiar persons. In turn, these larger networks imply greater access to resources assuming that members of the network will not cheat or renege on their obligation to reciprocate. Feeling secure in the knowledge that their friends are dependable, the person holding the central position comes to trust their friends more than the person holding the peripheral position in the friendship network. Future research should test the mediating processes (i.e., feeling of security and dependability of friends) presumed between centrality and trust in friends. Future research should also examine the possibility that it is the trusting person who gains a more central position. Thus, the relationship between centrality and particularistic trust could be reversed with trusting leading to centrality in the friendship networks. This reverse causal order also would have interesting implications. It means that being trusting of others could be as important as being trusted by others for an individual to gain friends and become influential. Longitudinal or experimental designs would be desirable to disentangle the actual causal order of these relationships and the causal mechanisms that are at work.

The results on the go-between position in the advice networks are important for understanding how bridges may serve to generate cooperation from others. The go-between bridges have control over valued information and knowledge. Others dependent on the bridge for information must behave in a trustworthy way to encourage the bridge to share the valued information and knowledge. Similar to the central position in the friendship network, bridges in the advice networks are secure in the trustworthy behavior of people in their networks. Different from the central position in the friendship network, bridges in the advice network rely on the goodwill of others rather than the sanctioned behavior of the friends in the cohesive network. In either case, the Chinese notion of *pao* plays a role. Trust derived either from friendship ties by the central person or through information exchange by the bridge makes Chinese more willing to show goodwill to social connections, to share even more resources with them, and eventually to create even

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

more opportunities to cooperate and trust in the network. The dynamic process depicted would be a rich avenue for future research.

The finding that particularistic trust is related to general trust could be explained and understood by referring back to the network circles in Figure 1. The normative structure of *pao* implies that particularistic trust (with familiar ties as shown in the second circle in Figure 1) can arise through the process of reciprocal exchange in the second, favor exchange circle. Network positions (centrality in friendship and betweenness in advice networks) contribute to the rise of individual-placed trust through *pao*. *Pao* then produces reductions in risk and uncertainty of exploitation in general, leading to general trust with weak ties such as colleagues in general or the organization as a whole. *Pao* allows for gradually incorporating working relations into positions of particularistic trust through favored exchange and obligation. The accumulation of trust toward many individuals through *pao* is likely to lead to general trust. The concept of *pao*, similar to the idea of *guanxi*, is an indigenous term but its cross-cultural equivalence would be worthwhile to explore. Most scholars equate *guanxi* to networks (Yang, 1994). In what ways is *pao* similar to or different from the concept of reciprocity, which is presumed to be universal in sociological literature (Blau, 1964; Gouldner, 1959).

Finally, the lack of relationship between the two structural variables and the two forms of general trust is not so surprising in retrospect. Social networks are made up of dyadic relationships. Therefore, network position has a more direct implication for particularistic trust, which in turn spills over to general trust. However, there is the possibility that the lack of a relationship between network position and general trust may be unique to this Chinese setting. China is known as a highly particularistic and relation-oriented culture (Trompenaars, 1994). Therefore, network position may produce particularistic trust but not general trust. As I argue in the section on hypotheses development, a central or go-between individual should feel secure and come to trust colleagues in general, due to his or her better control over the organizational environment. However, the evidence shows that Chinese can't directly generate general trust from their confidence on strange others. Confidence encourages Chinese to embrace more social relations, but trust must be built on actual interaction experience in dyad relations. Future research should explore the structural antecedents of general trust in colleagues and in the organization.

CONCLUSION

Originating in the West, there is an assumption that culture has little or no effect on organizational networks. The results are consistent with this general assumption. I found that network-based structural positions influence the formation of particularistic trust, and then general trust. The underlying logic based on the Western perspective is largely rational. If you have friends or are an in-between

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

person, you have more power or influence because people depend upon you for support (friendship) or information (advice). Others' dependence upon you makes you more confident that those around you will behave themselves and won't renege. Therefore you trust them more. A different explanation emerged based on the cultural or normative importance of *pao*. People who have friends and who mediate information flows have 'relations' to others. The principles of *pao* that govern these relations ensure that favors granted in the present will be reciprocated in the future. People who have many ties – whether affective or instrumental – feel more confident that others will reciprocate in the future. It is the normative security of being embedded in a host of relationships that gives one the confidence to trust in others. In summary, this study offers the benefits of integrating both a rational (Western) and an emotional (Chinese) explanation for the occurrence of trust in networks. The findings both confirm and extend the social network theory and suggest many fruitful directions for future research. Further, I hope the study adds one small piece to the large puzzle of Chinese management research by yielding some understanding on trust, a commodity which is vital to efficient management in a 'favoritism' and relation-oriented society of the Chinese type.

NOTES

[1] I thank the financial support of Academia Sinica for my 'Information Technology and Social Transformation' project, and the National Science Foundation of Taiwan for my research project NSC 89-2416-H-155-041. Previous versions of this paper have been presented at the 2003 International Association for Chinese Management Research Inauguration Convention and the 2002 Convention of the Hong Kong Sociological Association. I am grateful for the valuable comments from various reviewers and in particular senior editors Yanjie Bian, Anne Tusi, and Joseph Galaskiewicz, who patiently guided me through the development of this paper. The help of Herm Smith in improving the English writing of the paper and providing the concept of assurance is also appreciated.

[2] A confirmatory factor analysis has also been conducted. It supports the three factors. The fit statistics Bentler & Bonett's Non-normed index is 0.947 and RMSEA is 0.067.

[3] I treated these categories of age as a continuous variable to conserve degree of freedom. However age is not a significant factor for trust, and using dummy codes for age did not change the results.

REFERENCES

Barber, B. (1983). *The Logic and Limits of Trust.* New Brunswick: Rutgers University Press.

Baron, R. M. and Kenny, D. A. (1986). 'The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations'. *Journal of Personality and Social Psychology*, **51**, 1173–82.

Blau, P. (1964). *Exchange and Power in Social Life.* New York: Wiley.

Brass, D. and Burkhardt, M. (1992). 'Centrality and power in organizations'. In Nohria, N. and Eccles, R. G. (Ed.), *Networks and Organizations* (pp. 191–215). Boston: Harvard Business School Press.

Brown, T. F. (1997). *Theoretical Perspectives on Social Capital.* Working paper located in http://hal.lamar.edu/~BROWNTF/SOCCAP.HTML.

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Burt, R. (1992). *Structural Holes: The Social Structure of Competition.* Cambridge: Harvard University Press.

Butler, J. (1991). 'Toward understanding and measuring conditions of trust: Evolution of a condition of trust inventory'. *Journal of Management*, **17**, 643–64.

Butler, J. K. and Cantrell, R. S. (1984). 'A behavioral decision theory approach to modeling dyadic trust in superiors and subordinates'. *Psychological Reports*, **55**, 19–28.

Cammann, C., Fichman, M., Jenkins, D. and Klesh, J. (1979). *The Michigan organizational assessment questionnaire.* Unpublished manuscript, University of Michigan, Ann Arbor.

Chen, C.-H. (1994). *Subcontracting Networks and Social Life.* Taipei: Lien-Jin Press.

Coleman, J. (1990). *Foundations of Social Theory.* Cambridge: The Belknap Press.

Creed, D. and Miles, R. (1996). 'Trust in organizations'. In Kramer, R. M. and Tyler, T. (Eds.), *Trust in Organizations* (pp. 16–39). London: Sage Publication Inc.

Cummings, L. L. and Bromiley, P. (1996). 'The organizational trust inventory: Development and validation'. In Kramer, R. M. and Tyler, T. (Eds.), *Trust in Organizations* (pp. 302–30). London: Sage Publication Inc.

Deutsch, M. (1958). 'Trust and suspicion'. *Journal of Conflict Resolution*, **2**, 265–79.

Downes, M., Hemmasi, M., Graf, L. A., Kelley, L. and Huff, L. (2002). 'The propensity to trust: A comparative study of United States and Japanese managers'. *International Journal of Management*, **19**, 614–21.

Fei, H.-T. (1948). *Peasant Life in China.* London: Routledge & Kegan.

Fukuyama, F. (1996). *Trust: The Social Virtues and the Creation of Prosperity.* NY: Free Press.

Gambetta, D. (1988). 'Can we trust trust?' In Gambetta, D. (Ed.), *Trust: Making and Breaking Cooperative Relations* (pp. 213–38). Oxford: Basil Blackwell.

Gouldner, A. W. (1959). 'The norm of reciprocity: A preliminary statement'. *Symposium on Sociological Theory* (pp. 241–70). Evanston, IL: Row. Peterson.

Granovetter, M. (1973). 'The strength of weak tie'. *American Journal of Sociology*, **78**, 1360–80.

Granovetter, M. (1985). 'Economic action and social structure: The problem of embeddedness'. *American Journal of Sociology*, **91**, 481–510.

Hardin, R. (2001). 'Conceptions and explanations of trust'. In Cook, K. S. (Ed.), *Trust in Society* (pp. 3–39). NY: Russel Sage Foundation.

Hollon, C. J. and Gemmill, G. R. (1977). 'Interpersonal trust and personal effectiveness in the work environment'. *Psychological-Reports*, **40**, 454.

Hwang, K. K. (1987). 'Face and favor: The Chinese power game'. *American Journal of Sociology*, **92**, 944–74.

Krackhardt, D. (1992). 'The strength of strong ties: The importance of philos in organizations'. In Nohria, N. and Eccles, R. G. (Eds.), *Networks and Organizations* (pp. 216–40). Boston: Harvard Business School Press.

Krackhardt, D. and Hanson, J. (1993). 'Informal networks: The company behind the chart'. *Harvard Business Review*, **July–Aug**, 104–11.

Krackhardt, D. and Porter, L. W. (1985). 'When friends leave: A structural analysis of the relationship between turnover and stayer's attitudes'. *Administrative Science Quarterly*, **30**, 242–61.

Lin, N., Fu, Y.-C. and Hsung, R.-M. (2001). 'The position generator: Measurement techniques for investigation of social capital'. In Lin, N., Cook, K. and Burt, R. (Eds.), *Social Capital: Theory and Research* (pp. 57–81). NY: Aldine De Gruyter.

Luo, J.-D. (2005). 'Toward a theory of trust in Chinese organizations'. Paper presented at Sunbelt XXV, Los Angeles, Feb. 2005.

Marsden, P. and Campbell, K. (1984). 'Measuring tie strength'. *Social Forces*, **63**, 483–501.

Miles, R. and Creed, D. (1995). 'Organizational forms and managerial philosophies'. *Research in Organizational Behavior*, **17**, 333–72.

Mishra, A. K. (1996). 'Organizational responses to crisis: The centrality of trust'. In Kramer, R. M. and Tyler, T. (Eds.), *Trust in Organizations* (pp. 261–87). London: Sage Publication Inc.

Mowday, R. T., Steers, R. M. and Porter, L. W. (1979). 'The measurement of organizational commitment'. *Journal of Vocational Behavior*, **14**, 224–47.

Porter, L. W. and Smith, F. J. (1970). *The etiology of organizational commitment.* Unpublished manuscript, University of California, Irvine.

Robinson, S. L. and Morrison, E. W. (1995). 'Psychological contracts and OCB: The effect of unfulfilled obligations on civic virtue behavior'. *Journal of Organizational Behavior*, **16**, 289–98.

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press

Rotter, J. B. (1971). 'Generalized expectations for interpersonal trust'. *American Psychologist*, **26**, 443–52.
Sheppard, B. H. and M. Tuchinsky. (1996). 'Micro-OB and the network organization'. In Kramer, R. M. and Tyler, T. (Eds.), *Trust in Organizations* (pp. 140–65). London: Sage Publication Inc.
Sitkin, S., and Pablo, A. (1992). 'Reconceptualizing the determinants of risk behavior'. *Academy of Management Review*, **17**, 9–34.
Smith, H. W. (1995). 'Predicting stress in American-Japanese business relations'. *Journal of Asian Business*, **12**, 79–89.
Smith, H. W. (2002). 'Confirming and disconfirming supervisor–subordinate relationships in Japan, the USA, Germany and China'. 2002 Association of Japanese Business Association Best Papers and Abstracts, pp. 265–64.
Trompenaars, A. (1994). *Riding the Waves of Culture: Understanding Diversity in Global Business.* Burr Ridge, IL: Irwin.
Tsai, W. and Ghoshal, S. (1998). 'Social capital and value creation: The role of intra-firm networks'. *Academy of Management Journal*, **41**, 464–78.
Tsui, A. S. and Farh, J.-L. (1997). 'Where *guanxi* matters–Relational demography and *guanxi* and technology'. *Work and Occupations*, **24**, 57–79.
Uzzi, B. (1996). 'The sources and consequences of embeddedness for the economic performance of organizations'. *American Sociological Review*, **61**, 674–98.
Wasserman, S. and Faust, K. (1994). *Social Network Analysis: Methods and Applications.* Cambridge: Cambridge University Press.
Wellman, B. (1992). 'Which types of ties and networks give what kinds of social support?' *Advances in Group Process*, **9**, 207–35.
Wellman, B. and Frank, K. A. (2001). 'Network capital in a multilevel world: Getting support from personal communities'. In Lin, N., Cook, K. and Burt, R. (Eds.), *Social Capital: Theory and Research* (pp. 233–73). NY: Aldine De Gruyter.
Yamagishi, T., Cook, K. and Watabe, M. (1998). 'Uncertainty, trust, and commitment formation in the United States and Japan'. *American Journal of Sociology*, **104**, 165–95.
Yamagishi, T. and Yamagishi, M. (1994). 'Trust and commitment in the United States and Japan'. *Motivation and Emotion*, **18**, 129–66.
Yang, M. (1994). *Gifts, Favors, and Banquets: The Art of Social Relationships in China.* NY: Cornell University Press.
Zucker, L. G. (1986). 'Production of trust: Institutional sources of economic structure, 1840–1920'. *Research in Organizational Behavior*, **8**, 53–111.

Jar-Der Luo (j-d-luo@yahoo.com.tw) is a Professor in the Sociology Dept. and Public Administration School of Tsinghua University in Beijing. He earned his Ph.D. degree in the Sociology Dept. of the State University of New York at Stony Brook. He researches numerous topics in social network studies, including social capital, trust, social network structures and their impacts on organizational behaviors, such as knowledge sharing, organizational citizenship behavior and turnover.

Manuscript received: May 17, 2003
Final version accepted: June 22, 2005
Accepted by: Yanjie Bian

© 2005 The Author
Journal compilation © Blackwell Publishing Ltd. 2005

https://doi.org/10.1111/j.1740-8784.2005.00022.x Published online by Cambridge University Press