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It All Starts with Forging Social Ties:

Developing School Leadership from the Social Network Perspectives

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Abstract

School leadership can be developed and strengthened from many approaches, including, but not limited to, transformational, instructional, distributed, and social justice leadership. This article presents an alternative perspective to develop school leadership from the social network perspectives. Drawing upon the growing body of research on social networks in school leadership, this article elucidates the evidence-based school leadership practices from four facets: social ties, network structure, social influence, and school culture. These four facets influence one another as the school leaders emerge, exercise leadership, and build a nurturing school culture through forging social ties, shaping network structure, and gaining social influence.

Keywords: social networks, network science, school leadership, organizational change, school culture

It All Starts with Forging Social Ties:

Developing School Leadership from the Social Network Perspectives

School leadership can be developed and strengthened from many approaches. Over the last decade, the prevailing school leadership approaches have included, but not limited to, transformational leadership, instructional leadership, distributed leadership, and social justice leadership (Wang, 2018). This article presents an alternative approach to develop school leadership from the social network perspectives, as illustrated in Figure 1. Premised on the assumption that leadership is a social process between leaders and followers (Daly, 2010), this article elucidates how school leaders can develop strong leadership through four facets: social ties, network structure, social influence, and school culture. These four facets influence one another as the school leaders emerge, exercise leadership, and build a nurturing school culture through forging social ties, shaping network structure, and gaining social influence. This article thus aims to provide the social network perspectives of school leadership, followed by a discussion on how school leaders can apply the social network perspectives to their leadership practices.

The social network perspectives of school leadership are grounded in 49 peer-reviewed, empirical research articles on school leadership (see Appendix). The empirical findings of these articles were synthesized to develop the social network perspectives of school leadership from the four facets that have been frequently researched in the 49 empirical articles on school leadership: (1) forging social ties, (2) shaping social network structure, (3) gaining social influence, and (4) nurturing school culture through the social networks (see Figure 1). In the following pages, I first elaborate on each of the four facets of the social network perspectives of school leadership, coupled with the research literature intersecting social networks and

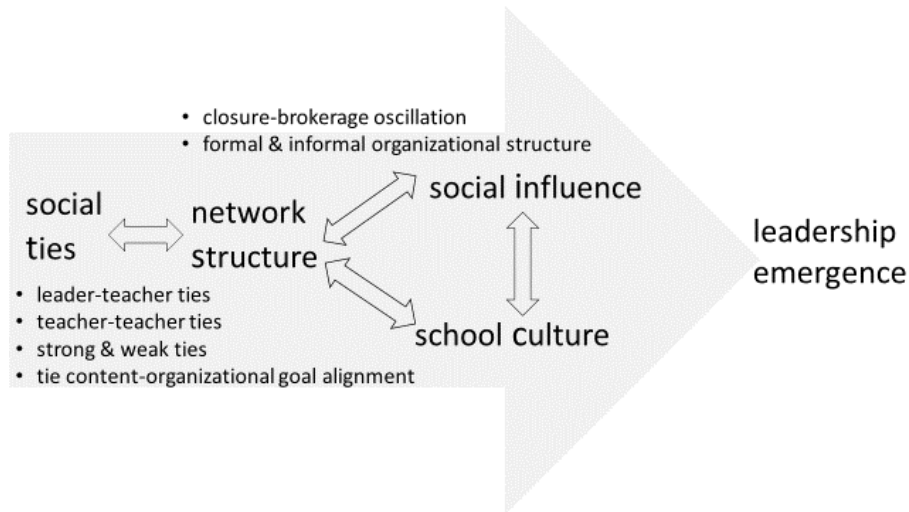


Figure 1 The social network perspectives of school leadership.

school leadership. Next, to provide evidence-based practical guidance for school leaders, I summarize and discuss school leadership behaviors from the social network perspectives.

Forging Social Ties

First and foremost, building school leadership starts with forging social ties. To understand what we mean by “social ties”, let us visualize the leader and all the teachers and staff in a school building as the dots, as seen in a hypothetical social network in Figure 2. Whenever we observe someone interacts with one another, we draw a line to connect the dots. In doing so, the lines in Figure 2 represent the social ties in the school, and arrows represent who interacts with whom. For example, the social tie connecting Teacher 10 and 19 (i.e., Teacher 10 → 19) suggests Teacher 10 initiates the interaction with Teacher 19; however, the interaction is not reciprocal because Teacher 19 does not initiate the interaction with Teacher 10. By contrast, the social tie between Teacher 3 and 4 (i.e., Teacher 3 ↔ Teacher 4) are reciprocal because both teachers initiate the interaction.

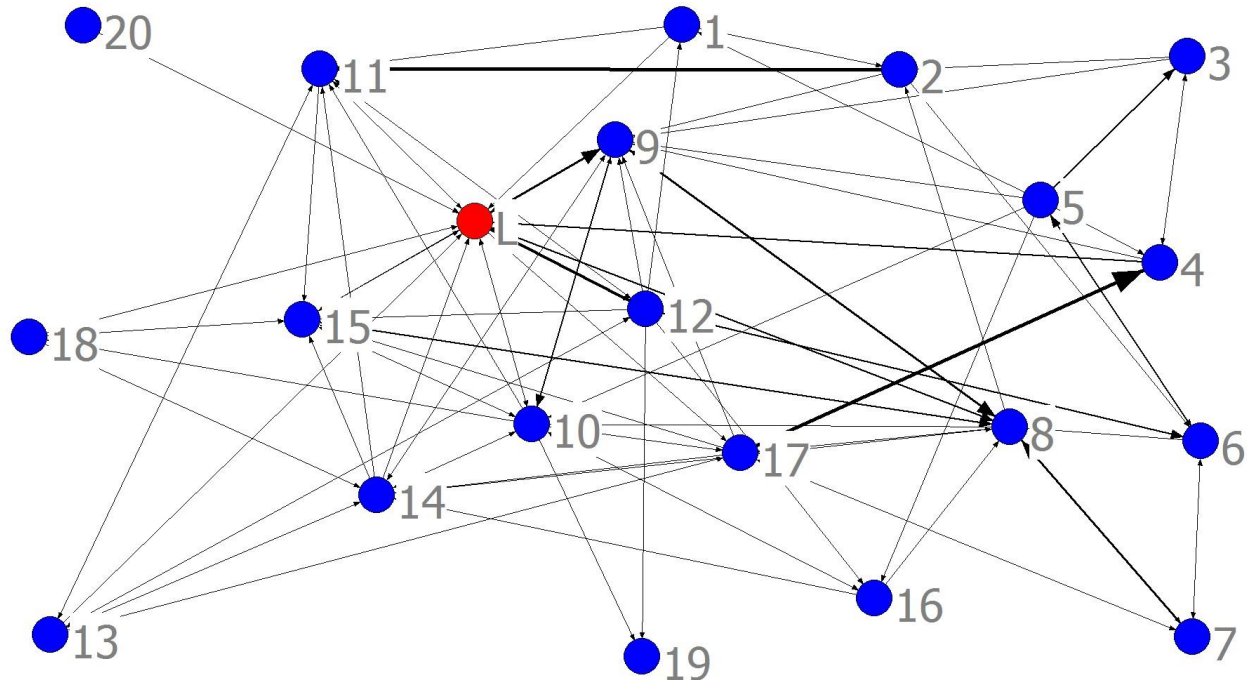


Figure 2 A hypothetical social network of advice-seeking on mathematics instruction in a school. In the network, the school leader is represented as the red dot and labeled as “L”; all teachers are represented as the blue dots. Teacher 9, 11, and 15 are likely the teachers who have the disproportionately larger influence than others on mathematics instruction in the school, because they are the most sought-after individuals by others for the advice on mathematics instruction. The arrows represent who goes to whom to seek advice. The width of the tie represents tie strength.

There is much flexibility in what the social ties mean to us, because we can define them in a way that suits a given school’s context as we draw the lines connecting people in the school building. If we want the social ties to represent how the advice and information on instructional practices flow from one individual to another in the school, we observe and/or ask people in the school building, “To whom do you go for advice on instructional practices?” We can also obtain more fine-grained details about the advice-seeking ties on a particular subject such as mathematics, as illustrated in Figure 2, by observing and/or asking, “To whom do you turn for advice and support on teaching mathematics?” If we define social ties as the teachers’ influence on one another’s professional growth, we can observe and/or ask the teachers, “Who and to what extent your colleagues contribute to your own professional development as a teacher during the

current school year?” (e.g., de Lima, 2008). The similar questions can also be used to gauge the social ties on teachers’ work-related issues and personal matters in the schools (e.g., Moolenaar, Daly, & Slegers, 2011), as well as the social ties by grade level (e.g., Woodland, Barry, & Roohr, 2014).

Social ties are fundamental in school leadership both theoretically and empirically. Theoretically, one way to understand the functions of social ties is to consider them as the access to resources in our social networks, thereby building social capital. Social capital, according to Lin’s (1999) network theory of social capital, is deemed as the “resources embedded in a social structure which are accessed and/or mobilized in purposive actions” (p. 35). The social ties, therefore, function as the conduits through which the individuals access their social contacts’ resources (Bourdieu, 1986; Coleman, 1988, 1990; Putnam, 1993, 2000). To that end, to generate social capital is to gain access to socially embedded resources through forging social ties. Put differently, an individual’s access to the embedded resources is subject to his or her social ties in the social networks: the more ties an individual has, the more access (i.e., conduits) to the resources the individual has. Social capital, therefore, can be considered as “a level of network advantage to be developed and preserved” (Burt & Merluzzi, 2016, p. 370). To develop social capital (i.e., to access and mobilize the resources embedded in the social networks), an individual needs to be an active agent to instrumentally forge and sustain social ties.

In addition to considering social ties as the conduits to resources embedded in social networks, another way to understand the function of social ties is to consider them as the conduits of social contagion and social influence (Borgatti & Foster, 2003; Wasserman & Faust, 1994). What is contagious via the social ties is subject to how the ties are defined. The ties are the channels to spread not only tacit knowledge (e.g., ideas, practices, information, advice, and

expertise), but also psychological influences (e.g., beliefs, attitude, trust, distrust, and emotions; Burt, 2005). Individually, whether one adopts the tacit knowledge or whether one is influenced by a psychological effect is subject to the social ties surrounding the individual (e.g., the proportion of the people who have adopted and how strong the social ties are). For example, in Figure 2 Teacher 14's instructional expertise is more contagious than that of Teacher 20, because more teachers (i.e., Teacher 9, 10, 13, and 18) go to Teacher 14 for instructional advice, whereas no one goes to Teacher 20 to seek advice. Moreover, seen from the vantage point of a group as a whole, people mutually influence and inform each other in a socially contagious process that leads to an increasing homogeneity within the group. Take the social ties in Figure 2 as an example. Over time, the instructional expertise held by the teachers and the school leader will flow across the school's social networks through the social ties, because no one is completely isolated in the social networks. From this point of view, we see that the more connected the social network is in the school, the faster the instructional expertise travels across the network.

Empirically, it has been found that within the schools, the leader ↔ teacher social ties are positively associated with transformational leadership (Moolenaar et al., 2010). Transformational leadership is demonstrated through the leadership behaviors such as initiating and identifying a vision for the school's future, offering individual support, and providing intellectual stimulation (Bass & Avolio, 1994; Burns, 1978; Leithwood & Jantzi, 2006). To practice transformational leadership, it entails school leaders to demonstrate all these leadership behaviors through the leader ↔ teacher social ties. Without the social ties, there would be no school leadership, because leadership, as a social process, does not exist in a vacuum. Further, the more teachers going to their school leaders to seek for advice on professional expertise and personal matters (i.e., the more social ties from teachers to the school leader in Figure 2), the more trust and

support the teachers believe they receive from the school administration (Price, 2015). With the social ties, the leaders place themselves at the center of the school's social networks, thereby building social capital and establishing the conduits of social contagion. Moreover, the leader ↔ teacher social ties are essential to implement district policies (Coburn & Russell, 2008). The policies by themselves are merely words on paper, if no leader ↔ teacher social ties could function as the social conduits in which the district policies take effect.

School leaders not only forge social ties with teachers, but also play a key role in encouraging and guiding teachers to forge social ties among themselves (Coburn & Russell, 2008). Teachers' social ties have been found to have an extensive, salient impact on teachers themselves and the school as a whole. First, how many advice-seeking ties a teacher has in the school is positively associated with the teacher involvement in decision making (Moolenaar et al., 2011), teacher's instructional practices (Hopkins et al., 2013; Penuel et al., 2012), teacher's collective efficacy (Daly et al., 2010), and teacher's job satisfaction (Daly et al., 2010). Second, the teachers' social ties, along with the resultant teachers' social networks, have an extensive impact on the schools as organizations as a whole. Specifically, the teachers' social ties and their social networks are positively associated with the innovative school climate (Moolenaar et al., 2011, 2014), collective actions on organizational change (Daly et al., 2010), diffusion of research-based evidence (Brown, Daly, & Liou, 2015; Finnigan, Daly, & Che, 2013), organizational learning on the Common Core State Standards (Liou, 2016), trust in schools (Brown et al., 2015), and school performance (Finnigan & Daly, 2012; Friedkin & Slater, 1994). To that end, building leader ↔ teacher ties is necessary but not sufficient in effective school leadership. School leaders should also exert efforts to facilitate the formation of teacher ↔ teacher ties, such as by encouraging teachers' joint examination of instruction and student

learning, as well as by creating an environment in which teachers feel free to communicate with one another (Stosich, 2016). In doing so, school leaders help shape a well-connected social network in which some teachers (e.g., Teacher 9, 11, and 15 in Figure 2) might have disproportionately more social ties than others. Those who emerge at the center of the school's social networks by establishing more social ties, therefore, have disproportionately larger social influence than others over how the expertise and information flow in schools.

Strong Ties and Weak Ties

The social ties in schools can be further differentiated by how strong the ties are. For example, if a school leader interacts with a teacher on instructional practices every day or intensively, then the social tie is considered, relatively speaking, strong. Strong ties can also imply how strongly the individuals feel emotionally close to one another (Moolenaar et al., 2010). In Figure 2, the school leader has four strong ties to Teacher 4, 8, 9, and 12; teachers have many strong ties among themselves (e.g., Teacher 17 \rightarrow 4, Teacher 7 \leftrightarrow 8, Teacher 9 \leftrightarrow 8, and Teacher 11 \leftrightarrow 2), as illustrated by thick ties. Strong ties are the glue, binding together people who exert a strong influence on one another. By contrast, if a school leader interacts with the teacher less frequently or less intensively, then the tie is considered relatively weak. However, labeling the ties as “weak” can be misleading, because weak ties do not necessarily mean the value of ties is diminished. In fact, the weak ties might not be weak at all. Granovetter's (1973) strength of weak tie theory is supported by the strikingly counter-intuitive finding on the relationship between personal social ties and job search: our weak ties (acquaintances) are more likely to provide information that leads to landing a job successfully than our strong ties (close friends), despite the fact that our close friends are arguably more motivated in helping us land a job. The weak ties can be highly valuable, because novel information is more likely to come

from the weak ties with their bridging function in information flow between different groups; whereas the strong ties are unlikely to be the sources of novel information, as our close friends tend to know one another and thus share the same information source. If the strength of weak tie theory is applied to the schools' social networks, then the individuals with more weak ties are more likely than others to bring in new ideas and think out of the box. On the contrary, the individuals who are connected by strong ties, thanks to social contagion, tend to share the same viewpoints and echo similar beliefs, thereby creating an echo chamber. As a result, school leaders are recommended to forge a mixture of strong ties and weak ties, a point I will return shortly.

The Content of Social Ties

To nurture a positive school culture and initiate an organizational change, school leaders also need to evaluate whether the existing social ties, particularly the content of the social ties, are aligned with the desirable school culture and the goal of an organizational change. When the content of the social ties (e.g., instructional expertise, positive emotions, and optimism) is aligned with the goal of the organizational change (e.g., implementing a new curriculum), school leaders encourage the formation of both leader ↔ teacher ties and teacher ↔ teacher ties (Daly, Liou, & Brown, 2016). On the contrary, when the content of the social ties (e.g., distrust, toxic perceptions, and negative emotions) is misaligned with the goal of the organizational change, school leaders are expected to break down and cut off the negative ties that are counter-productive to achieve the organizational goal (Daly, Moolenaar, Liou, Tuytens, & del Fresno, 2015).

In addition to the strength and content of face-to-face social ties, school leaders glean insights into interactions through examining digital social ties. For example, the digital social ties

can represent who sends emails to whom, and who interacts with whom on social media. In fact, some school leaders have already used social media to build digital social ties with the communities. A recent study examined how superintendents in the 100 largest U.S. school districts used Twitter to communicate with the public, and found that the public expressed significantly less negative emotions toward the superintendents' personal Twitter communication than their districts' official Twitter communication (Wang, 2016).

In sum, school leadership is the outcome of both the quantity and quality of the resources controlled by whom the leaders have social ties with. Therefore, from the social network perspectives, school leadership can be gauged by asking the questions on the quantity and quality of the leaders' social ties. How many social ties does a leader have? Is the leader at the center of the school's social networks? How many strong ties and weak ties does the leader have, respectively? Is the content of the social ties aligned with the organizational goals?

Shaping Social Network Structure

The network structure is shaped by a pattern of social ties connecting individuals in the social networks (Borgatti, Everett, & Johnson, 2013). Social ties, along with the individuals who interact through the social ties, shape the structure of the social networks and serve as the conduits of social influence. To shape a social network structure that fosters positive school culture, school leaders forge social ties purposely to create a closure-brokerage oscillation and build both formal and informal social networks in schools.

Closure-brokerage Oscillation

With the forging of leader ↔ teacher ties and teacher ↔ teacher ties, the social networks in a school begin to emerge. To build an optimal social network structure in organizations, the social network structure is recommended to strike a balance between strong ties and weak ties

(Burt, 1992). That is, the individuals in an organization are well-connected by dense, strong social ties into subgroups (i.e., closure), and a relatively few weak ties function as the bridge and thus connect the subgroups across the organization's social networks (i.e., brokerage; Brass, Galaskiewicz, Greve, & Tsai, 2004). The network structure of closure offers well-connected people in the subgroups strong support and collaboration (Podolny, 1993), whereas the network structure of brokerage offers information diversity because novel information is usually channeled into the network through weak ties (Granovetter, 1973). When social capital is conceptualized as the brokerage and closure network structure in social networks (Burt, 2005), the individuals who position themselves as a bridge across distinct subgroups tend to have more social capital than those who interact with only the people in the same subgroup. In comparison with those who are in the same subgroup, the people who function as a bridge are more likely to generate new ideas, because "opinion and behavior are more homogeneous within than between groups" (Burt, 2004, p. 349). As such, new ideas are likely to emerge from the individuals who have access to alternative ways of thinking and behaving in different subgroups, and thus formulate new ideas through selecting and synthesizing diverse information embedded in different subgroups.

Moreover, social networks are not static. They evolve with the formation of new social ties and the decay of old ones (Burt & Merluzzi, 2016). When the factor of time is taken into account in shaping an optimal network structure, the better organizational performance is associated with the closure-brokerage oscillation: a period of deep engagement within a subgroup (closure) is followed by a period of connecting across subgroups (brokerage), followed by deep engagement in a subgroup, and so on and so forth (Burt & Merluzzi, 2016). To build the network structure of closure, school leaders embed themselves in a well-connected subgroup for

a period by forming dense, strong ties with individuals in the subgroup. The leaders' time spent working closely with those who are in the subgroup offers an opportunity for the leaders to build a positive reputation within the subgroup. The leaders' positive reputation is essential when they build the brokerage network structure later on by functioning as the bridge of information among different subgroups. This is because the subgroups are likely to accept new information brokered by the leaders who have already established a positive reputation (Burt & Merluzzi, 2014).

As a corollary, school leaders are recommended to alternate between strengthening strong ties within a subgroup (e.g., by grade level, subject, or topic) and initiating weak ties across subgroups (e.g., across grade level, subjects, or topics) as they shape the school's social network structure. The oscillation between closure and brokerage not only offers a mixture of closure and brokerage in the social network structure, but also allows the leaders to establish a positive reputation which is sorely needed when they function as a bridge between the subgroups.

Formal & Informal Social Networks in Schools

The structure of schools' social networks can also be shaped by both informal and formal social interactions. The informal social networks are shaped by the social ties such as who goes to whom for advice on work-related issues or personal matters. Such informal social networks, albeit invisible in the schools' organizational charts, have a profound impact on whether the teachers are engaged in organizational change (Daly, 2010), as noted earlier. By contrast, when a school's organizational charts, policies, and procedures designate who interacts with whom under a given circumstance, the resultant social ties shape the formal social networks in schools. The formal organizational infrastructure plays an important role in shaping the schools' social networks as well. The organizational factors that have been identified to be associated with shaping schools' social networks include the designated school leaders (Spillane & Hopkins,

2013), adding subject specific (e.g., mathematics) leaders (Spillane, 2005), professional development (Spillane, Hopkins, & Sweet, 2015), and promoting formal collaborations (Penuel, Riel, Joshi, Pearlman, Kim, & Frank, 2010). More importantly, the organizational factors have a more potent effect on the schools' social networks than the individual factors such as that teachers are more likely to interact with those who are in the same racial group and with the same gender than otherwise (Spillane, Kim, & Frank, 2012). This potent effect of the organizational factors provides valuable practical guidance for school leaders to institutionalize the formal organizational infrastructure that facilitates and sustains the social ties for a desirable organizational change. To initiate an organizational change, school leaders can ask the questions from the social network perspectives: How to institutionalize an organizational structure that sustains the social network structure in professional learning communities? How to maximize the influence of department chairpersons and instructional coaches on instruction improvement through shaping the leaders' and teachers' social networks both within and between schools? How to build a professional-, intellectual-, and emotional-stimulating school culture by strengthening existing social ties and creating opportunities to forge new social ties among the people in schools and communities?

Gaining Social Influence

Social influence, as the proxy for leadership (Jackson & Marriott, 2012; Ogawa & Bossert, 1995; Parsons, 1963), is a function of school leaders' social ties and network structure. A leader's social influence is less about how a leader perceives his or her own influence, but more about how others perceive the leader's influence. Leaders might have an egoistic belief that they are influential among their followers (Keltner, 2017). This self-inflated belief might be incongruent with the influence perceived by their followers. Only when perceived influential can

a leader influence “followers to act for certain goals that represent the values and the motivations—the wants and needs, the aspirations and expectations—of both leaders and followers” (Burns, 1978, p. 19). To that end, those top-down appointed leaders are not necessarily the *real* leaders who have a strong social influence on the followers. Instead, the individuals who emerge as the leaders are usually those who are at the center of the social networks and have a few bridging ties across the subgroups in the networks, thereby having the disproportionately larger social influence than those at the network periphery. Yet this does not mean that the people at the network peripheries are not important. They might be marginalized to the periphery because their physical workspace does not enable them to build social ties frequently and extensively, or because their ideas are so innovative, or outlandish, or different from the dominant ideas in the school. For leaders, it is important to identify the peripherals in a timely fashion, develop formal and informal social network structure to draw them closer to the center of the network, so that they feel they are part of the team. Otherwise, the social isolation felt by the people at the periphery of the school social networks would undermine their motivation to be involved in decision making and negatively affect their job satisfaction (Burt & Merluzzi, 2014).

Nurturing School Culture through the Social Networks

From the social network perspectives, to build a nurturing school culture is to build the social networks in which people are cared for and nurtured. When the schools’ social networks evolve, the school culture changes as well. School culture is shaped by three interrelated levels: (1) the visible artifacts, practices, and behaviors; (2) the values and norms of what people believe to be good, right, or desirable, and (3) the underlying assumptions and taken-for-granted beliefs shared by the people in schools (Schein, 2010). Given the social contagion within social

networks, the schools' social networks, both formal and informal, are linked to the contagion of practices, behaviors, values, norms, values, underlying assumptions, and beliefs in schools.

Whether an individual adopts the tacit knowledge or whether one is influenced by a psychological effect is subject to the social ties surrounding the individual, as noted previously. Therefore, to change the school culture is to re-wire the social ties in schools and re-shape the school's social networks. More importantly, a social network has a life of its own (Christakis & Fowler, 2009). People join school organizations or emerge as leaders in a non-random manner, following the homophily effect: like-minded people are more likely to interact with one another (McPherson, Smith-Lovin, & Cook, 2001). Considering the social ties as the conduits of social contagion and social influence, school culture is thus self-reinforcing. A nurturing school culture tends to be more nourishing for the individuals over time; a toxic culture tends to be in a downward spiral. As a result, for school leaders to change the school culture, it is important to focus on the social ties and build the optimal network structure (i.e., a mixture of closure and brokerage in the network as well as the closure-brokerage oscillation), to encourage positivity and expertise sharing, and dismantle toxic ties.

Implications for School Leadership Practices

To recap, developing school leadership from the social network perspectives is not contradictory to the current prevailing approaches to school leadership (e.g., transformational, instructional, distributed, and social justice leadership). Rather, it adds an alternative approach to developing school leadership. From the social network perspectives, school leadership starts with forging social ties which serve as the foundation for shaping network structure, gaining social influence, and building a nurturing school culture. The school leadership behaviors manifested from the social network perspectives are summarized in Table 1. Demonstrating these leadership

Table 1 *School Leadership Behaviors from the Social Network Perspectives*

Social network perspectives of school leadership	Leadership behaviors
Forging social ties	<p>Evaluate the existing social ties in the school building by observing and/or asking the questions about people's interactions;</p> <p>Build both strong ties and weak ties in schools;</p> <p>Create opportunities for teachers and staff to forge ties among themselves;</p> <p>Ensure that the content of the social ties is aligned with the organizational goals;</p> <p>Optimize the value of social ties;</p> <p>Dismantle toxic social ties.</p>
Shaping social network structure	<p>Build a mixture of closure and brokerage in the network;</p> <p>Create the closure-brokerage oscillation: a period of deep engagement within a subgroup is followed by a period of connecting across subgroups, followed by deep engagement in a subgroup, and so on and so forth;</p> <p>Encourage teachers and staff to build informal social networks;</p> <p>Develop organizational policies and procedures to sustain the social network structure in professional learning communities;</p> <p>Maximize the influence of department chairpersons and instructional coaches on instruction improvement through shaping the leaders' and teachers' social networks.</p>
Gaining social influence	<p>Emerge at the center of the social networks in schools;</p> <p>Establish a few bridging ties across the subgroups in the social networks in schools.</p>
Nurturing school culture	<p>Build a professional-, intellectual-, and emotional-stimulating school culture by strengthening existing social ties, rewiring some social ties, and creating opportunities to forge new social ties among the people in schools and communities.</p>

behaviors, school leaders build a sturdy social infrastructure that allows them to emerge as strong leaders who exert the positive influence on people and nurture a positive school culture. To that end, leadership is less about working the system, but more about working with the people.

Certainly, “bowling alone” dose not work well in school leadership (Putnam, 2000).

As a final note, please bear in mind that there is a cost of building and maintaining social ties. Considering the limited resources—such as time and energy—school leaders have, it is “a cross-eyed strategy” (Burt, 2005, p. 11) for the leaders to focus only on the *volume* of social ties. Instead, the leaders are encouraged to optimize the *value* of social ties. It is the weak ties (Granovetter, 1973) that funnel diverse perspectives into the social networks in organizations, as well as break down the entrenched ways of thinking and organizational inertia that perpetuate the status quo. To that end, school leaders who focus only on developing a bundle of redundant social ties—the ties with those who belong to the same subgroup rather than distinct subgroups—might not facilitate an organizational change, but run the risk of creating a self-deceptive bubble trapping the people in the box, metaphorically speaking. When the social ties are redundant (i.e., the individuals are socially connected to those who share similar characteristics, rather than dissimilar ones), the resultant convergence could be detrimental in the sense of trapping people in groupthinking—a psychological phenomenon in which people strive for consensus within a group (Janis, 1982). The individuals are thus vulnerable to stereotyped views of out-groups, hostility towards dissenters, unquestioned beliefs, self-censorship, and collective rationalization.

On the contrary, the leaders who purposely position themselves as the brokers in the social networks use their limited time and energy more efficiently, and tend to perform better professionally (Burt, 2005). Thus, school leaders are encouraged to contemplate how to build

value-added social networks. The value of a new social tie is subject to the information the leader already has. If a new tie provides information the leader already has, the new tie has the “coordinated cost but no value” (Burt, 2005, p. 19). Burt asserted that people were not accustomed to identifying the brokerage opportunities in social networks, and it was stressful to have new information, particularly the information that contradicted one’s beliefs and perspectives, introduced to their social networks. As such, school leaders may benefit from the training on how to identify the brokerage opportunities in schools’ social networks in a timely manner, and how to strategically build the brokerage and closure that are instrumental in creating social capital to build a nurturing school culture for teachers, students, and communities.

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Appendix The List of 49 Reviewed Articles

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