

This article was downloaded by: [Aimei Yang]

On: 21 September 2012, At: 10:53

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of International and Intercultural Communication

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rjii20>

When Transnational Civil Network Meets Local Context: An Exploratory Hyperlink Network Analysis of Northern/Southern NGOs' Virtual Network in China

Aimei Yang

Version of record first published: 31 Aug 2012.

To cite this article: Aimei Yang (2012): When Transnational Civil Network Meets Local Context: An Exploratory Hyperlink Network Analysis of Northern/Southern NGOs' Virtual Network in China, Journal of International and Intercultural Communication, DOI:10.1080/17513057.2012.719632

To link to this article: <http://dx.doi.org/10.1080/17513057.2012.719632>



PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

When Transnational Civil Network Meets Local Context: An Exploratory Hyperlink Network Analysis of Northern/Southern NGOs' Virtual Network in China

Aimei Yang

Nongovernmental organizations (NGOs) are important communicators in the international arena, but few studies have explored the encounter between Northern NGOs (NNGOs) and Southern NGOs. This study examines how NNGOs build relationships with Chinese NGOs (CNGOs) online and how network positions affect the amount of local media coverage NNGOs receive. This study revealed three major findings: NNGOs occupied a disadvantageous network position; a close connection with CNGOs was crucial for NNGOs to attract media coverage; and NNGOs' and CNGOs' virtual networks demonstrated structural patterns similar to those of their offline networks. This study calls for attention to a mutually beneficial virtual communication structure.

Keywords: Global Civil Society; Transnational Networks; NGOs; Structural Hole Theory; Social Network Analysis

Introduction

As part of the process of globalization, a growing web of civil associations has extended its discussion and engagement from the local level to the international arena, exerting considerable influence on world politics, economics, human rights, environmental issues, and other urgent social affairs (Kenny & Germain, 2005). This web of global civil society, as defined by Castells (2008), comprises “nongovernmental organizations with a global or international frame of reference in their action

Aimei Yang is Assistant Professor at University of Dayton. The author would like to thank Dr. Maureen Taylor for her thoughtful suggestions. In addition, the author would like to thank the editor and three anonymous reviewers for their valuable comments on earlier versions of this manuscript. Correspondence to: Aimei Yang, St. Joseph Hall, 300 College Park, Dayton, OH 45469-1410, USA. Email: ayang1@dayton.edu

and goals” (p. 84). The dynamic interactions among global civil actors that unfold are an important component of current international and intercultural communication (Kwon, Barnett, & Chen, 2009; Rogers & Ben-David, 2008).

Since the 1940s, the number and activity scope of nongovernmental organizations (NGOs hereafter) have expanded significantly all over the world (Meyer, Boli, Thomas & Ramirez, 1997). Some NGOs are characterized by their eagerness to promote local civil movements (Anderson, 2000). For instance, NGOs such as the Uganda Women’s Network actively engage in movements that challenge the status quo of gender inequality in Uganda (Nabacwa, 2005). Other NGOs are known for their supranational and multinational reach, and are considered manifestations of the globalization process (Foljanty-Jost, 2005). For example, Doctors Without Borders and Action Aid are known for their advocacy for development in multiple countries and regions (Hudson, 2001).

Although they share the same label, NGOs are a diverse group of organizations (DeMars, 2005). There is little consistency in the definition and classification of this body of organizations (DeMars, 2005). One way to differentiate NGOs is by the geographic locations of organizations’ headquarters. Accordingly, NGOs can be divided into Northern NGOs (NNGOs hereafter; the term refers to NGOs with headquarters located in or originating from developed countries) and Southern NGOs (SNGOs hereafter; the term refers to NGOs with headquarters located in or originating from developing countries). When compared with SNGOs, NNGOs’ activities tend to be more transnational. Furthermore, they often play the role of transferring agencies between donors and their Southern counterparts (Nabacwa, 2005). NNGOs are capable of mobilizing and transferring large amounts of financial and organizational resources. For example, the United Nations reported that NNGOs transferred \$5 billion to developing countries in 1996 (Bradshaw & Schafer, 2000, p. 98). In contrast, SNGOs often work with fewer resources, and tend to work more closely with local communities, institutions, and organizations (Smith, Pagnucco, & Lopez, 1998). The differing roles NNGOs and SNGOs play suggest that cooperation and communication between them may help both sides to improve performance and efficiency.

Previous studies have tended to discuss the global influence of transnational NNGOs, and the local significance of SNGOs separately (Bradshaw & Schafer, 2000; Hall & Taylor, 1996), leading some scholars to note that research exploring the dynamic encounter and interactions between transnational NNGOs and local SNGOs is relatively sparse (Shumate & Dewitt, 2008). Further, studies have found that NGOs increasingly utilize the Internet to transcend the constraints of social and geographic distance and expand their networks (Shumate, 2008; Yang, 2003a). But while the Internet may provide new opportunities for NGOs to build virtual networks that facilitate North-South communication, few studies have explored the structure of NNGOs’ and SNGOs’ virtual networks and the potential effects resulting from such structures.

China presents an ideal context to examine the interaction of N/SNGOs’ virtual networks. Its burgeoning civil society has demonstrated great social and political

potential (Yang, 2003b), and Chinese NGOs (CNGOs thereafter) have actively adopted the Internet in their daily operations (Yang & Taylor, 2010). Historically, NNGOs' social influence in China has been limited (Beijing Civil Society Development Research Center, 2005). However, given the opportunities the Internet provides, it is pertinent to explore whether NNGOs have used its potential to build networks with Chinese civil actors and develop "global-local dialogue" (Su, 2010, p. 38). As will be further elaborated in this article, a well-connected and collaborative network among NNGOs and SNGOs is beneficial for both sides.

Further, in recent decades, China has paid a heavy environmental price for its rapid industrialization and overexploitation of natural resources. Public outcries over environmental problems have raised awareness of environmental issues, and many Chinese are supportive of environmentally friendly activities (Park & Yang, 2012). In addition, because of the scope of the Chinese economy and its large population, environmental problems in China often have global impacts (Chu & Tang, 2005). Therefore, the study of environmental NGOs' development has considerable social significance.

This research has two major goals. First, it investigates the network structure of N/SNGOs' virtual networks in China. Looking into the virtual networks among NNGOs and SNGOs enables this study to explore whether the Internet helps to connect them or if there is a North/South divide in the virtual world. To achieve this goal, three research questions were proposed:

- RQ1: What is the current condition of the virtual network structure of environmental NNGOs working in China?
- RQ2: What is the current condition of the virtual network structure of environmental CNGOs?
- RQ3: What is the current condition of the virtual partnership network structure of environmental NNGOs and CNGOs in China?

Second, this research explores how different network positions affect the amount of local media coverage that NGOs can attract. To understand the strategic impact of different network positions on actors' performance levels, Structural Hole Theory (SHT hereafter) offers a useful theoretical framework. SHT has been applied to studying emerging civil society (Stohl & Stohl, 2005). This theory contends that for social actors to enjoy advantages in a network, they need to develop ties with separate clusters in the network (Burt, 1992). The literature suggests that NNGOs and CNGOs may possess different network positions and it is reasonable to infer that they face different structural constraints and opportunities. Further, SHT implies that civil actors with different network positions may enjoy different levels of media attention (measured by the amount of media coverage). Based on the key concepts of SHT, four hypotheses were proposed:

- H1: In China, there will be a significant difference between the constraint level of NNGOs' and CNGOs' virtual networks.
- H2: In China, there will be a significant difference between the effective size of NNGOs' and CNGOs' virtual networks.

- H3: An NNGO's structural constraint level significantly predicts the amount of local media coverage it can attract in the local context.
- H4: An NNGO's structural effective size significantly predicts the amount of local media coverage it can attract in the local context.

SHT is discussed in more detail later in this paper, in conjunction with an analysis of hyperlink data between NNGOs and SNGOs. Findings and implications are presented at the end. First, however, this article considers global civil society and NGOs' activities.

Global Civil Society and NGOs' Activities

Civil society consists of a wide variety of civic enterprises such as families, communities, voluntary associations and religious bodies, and can be understood as the overall network of these civil associations (Foley & Edwards, 1996). Civil society is said to cultivate responsible citizenship, to generate democratic values and to nurture citizens' participation habits and political knowledge (Skocpol, Ganz, & Munson, 2000). Increased emphasis on the notion of civil society has positively affected the public perception of NGOs' roles. Early NGOs were viewed as assistance agencies that lent help to socially disadvantaged groups or facilitated emergency aid. More recently, NGOs have been reconceptualized as essential building blocks of civil society, which has helped them attract considerable political, economic, and human resources (Rooy, 2000).

Globalization and new communication technologies provide the wherewithal to extend the concept of civil society to the global level. Communication in the realm of global civil society is characterized by the involvement of civil actors from multiple countries. There are now numerous occasions when NGOs originating from the global North and South interact in the global arena (Castells, 2008). To help readers understand the relationships between NNGOs and SNGOs, the basic features and communication patterns of these two types of NGOs are introduced, followed by a discussion of civil actors' interactions in cyberspace.

Northern NGOs

Early NNGOs were offshoots of religious missions (Meyer et al., 1997; Skocpol et al., 2000). For example, one of the oldest missions, Les Sœurs de la Congrégation Notre-Dame, founded in 1653, has evolved into a typical NNGO and still actively engages in literacy work in Latin America (Rooy, 2000). Many NNGOs were founded as relief or welfare associations, and gradually evolved into development organizations working internationally.

In the twentieth century, the number of NNGOs increased significantly after World War II (Anderson, 2000). This was partly due to greater recognition of international responsibility. The fear that poverty and underdevelopment in third world countries might contribute to another round of wars and social turmoil also motivated many Westerners to support the formation of NNGOs (Hafner-Burton & Tsutsui, 2005). The second increase in NNGOs' influence occurred at the end of the Cold War, when

NNGOs specializing in civil education, specialist training, and human-rights advocacy received a considerable amount of financial support (Edwards, Hulme, & Wallace, 1999). Currently, three major factors contribute to furthering NGOs' global influence: the global passion for civil society, NGOs' prominence at international conferences, and NGOs' increasingly sophisticated transnational advocacy networks (Anheier & Salamon, 1998).

As this brief history of NNGOs shows, many NNGOs have established positions of global influence over a long time period, and have equipped themselves with the resources and experience to engage in civil activities. Their capacity may be further enhanced in the digital age. For example, the short film *Kony 2012*, produced by the NNGO Invisible Children, garnered more than 83 million hits on YouTube. This suggests how the Internet can exponentially magnify NNGOs' influence.

Southern NGOs

As globalization gradually spreads certain civil values around the globe, the number of SNGOs has also steadily increased over recent decades (Dichter, 1999). Now, in many developing countries, there are a huge number of community-based SNGOs engaging in civil activities, organized around marginalized interests. Many of those SNGOs are unregistered, local, and unknown to the outside world (Anderson, 2000). In Thailand, for example, there are more than 11,000 registered NGOs and many more unregistered NGOs. In India, at least two million people were working for non-profit organizations in 1998 (Anheier & Salamon, 1998). In China, by 2005, there were about 2768 registered NGOs, while the majority remained unregistered (Tang & Zhan, 2008).

SNGOs' competence has improved over time for a number of reasons. First, SNGOs have accumulated practical experiences through interactions with local communities and organizations. Second, SNGOs have also benefited from the aforementioned global trends that facilitated NNGOs' development. As more countries began to recognize the importance of civil society, SNGOs increasingly gained governmental support and social recognition. Third, over the years, NNGOs have provided a variety of capacity building programs. These programs improved the professional standards of staff and volunteers of SNGOs, and provided opportunities for SNGOs to expand their networks (Lewis & Sobhan, 1999).

Over the past decades, the growth in the number and activity scope of SNGOs has been dramatic. Nevertheless, SNGOs' relatively short history and limited resources still constrain their capacity. Many SNGOs still need NNGOs to provide financial and technical assistance. Further, for SNGOs to influence the international agenda, they may require NNGOs' transnational network to bring local issues to the international negotiation table (Dichter, 1999).

Relationship between Northern and Southern NGOs

Some scholars contend that the relationship between NNGOs and SNGOs reflects the unequal nature of the economic relationship between the global North and South

(Anheier & Salamon, 1998). This is because NNGOs have better access to resources and consequently enjoy greater power in the North–South relationship. This power difference has further influenced inter-organizational networks (Hughes, Peterson, Harrison, & Paxton, 2009).

In general, studies suggest that it is mutually beneficial for NNGOs and SNGOs to better coordinate their activities and develop functional partnerships (Anheier & Salamon, 1998; Rooy, 2000). NNGOs face several major issues. First, in many developed countries, the general public lacks an understanding of the culture and situation of developing countries (Rooy, 2000). Although many are keen donors for charity programs, few are willing to contribute resources other than money (Skocpol et al., 2000). This condition limits NNGOs' ability to carry out overseas civil activities that require wide-ranging cooperation among institutions and individuals. Second, to attract donations, many NNGOs are under pressure to allocate resources to tangible or marketable projects. Projects that require long-term support but yield fewer tangible results may be under-funded. Finally, legitimacy is increasingly an issue for NNGOs. As many SNGOs have evolved into large associations, the tension over who has the legitimacy to decide the development agenda is rising (DeMars, 2005). Yet SNGOs can also benefit from partnership with NNGOs. Although some SNGOs have begun to receive funding from overseas sources such as international foundations and official bilateral donors, direct funding may increase the chance for donors to influence SNGOs' agenda. Further, many SNGOs still lack resources and experience. For SNGOs to improve performance or influence the international agenda, cooperation with NNGOs is necessary (Brettell, 2000).

Nevertheless, due to differences in terms of background, culture, and perspective, studies reported that NNGOs and SNGO sometimes have a hard time maintaining partnerships. For example, Smith et al. (1998) surveyed nearly 300 NGOs, and found significant differences between NNGOs and SNGOs. First, NNGOs tend to define their goals according to principles, while SNGOs see the cultivation of organizing capacities as their primary goal. Second, NNGOs account for a significantly larger portion of transnational activities. SNGOs, in contrast, tend to focus on domestic issues. SNGOs also tend to pursue wider goals than NNGOs at the local level. Ahmad (2006) found that NNGOs focus on influencing international and national policy making, while SNGOs pay more attention to local civil activities. Third, when compared with NNGOs, SNGOs cooperate more frequently with multiple types of organizations, and participate in coalition work. Fourth, NNGOs are often concerned with individual rights while SNGOs value collective interests.

In sum, although partnerships between NNGOs and SNGOs are beneficial for the overall development of global civil society, it is unclear if existing divisions may block cooperation. The following section introduces the specific situation for N/SNGOs working in China.

Chinese NGOs and Northern NGOs in China

As discussed earlier, SNGOs engage in a variety of activities (DeMars, 2005). In China, the most active SNGOs are environmental NGOs (ENGOS hereafter) (Ho, 2001; Saich, 2000). ENGOS have been credited for “stimulating the civil movements in China” (Lee, 2007, p. 270). Studies have documented that Chinese ENGOS actively promote citizens’ negotiation with local governments and organize civil participation in pro-environmental activities (Saich, 2000). Three main reasons explain the exceptionally active status of Chinese ENGOS: the urgent environmental deterioration in China, the government’s recognition of the beneficial function of ENGOS, and broad social support for environmental activities (Harris, 2006; Tang & Zhan, 2008; Xie & Ho, 2008; Yi, 2006).

Early Chinese environmental activists, mostly professionals and scientists, began to advocate for environmental issues in the mid-1980s. The first citizen-founded Chinese ENGO is the Friends of Nature, which publishes its own publications regularly, and organizes conferences to gather domestic activists with international organizations (Yang, 2005). It was also the first citizen association to recruit members nation-wide. After the founding of Friends of Nature, many citizen-run ENGOS began to emerge across the country and gradually obtained official recognition. Some ENGOS even have access to mainstream media (Ho, 2001).

Northern ENGOS such as Greenpeace started working in China in the 1980s (Beijing Civil Society Development Research Center, 2005). Most NNGOs kept a low profile from the 1980s to the mid 1990s. They rarely registered as NGOs, but rather as investment agencies or for-profit organizations. NNGOs’ activities in China became more high-profile after the 1995 UN Fourth World Conference on Women was held in Beijing (Zhang, 2009). Although the conference mostly focused on feminist activism, its impact extended beyond feminism, influencing a broad range of social movements. Currently, China’s pervasive environmental issues call for international cooperation, and China is increasingly integrated into global networks (Castells, 2009). The changing social environment may offer NNGOs unprecedented opportunities to enhance their influence in China. Further, the Internet may also provide an alternative channel for NNGOs to reach out to millions of Chinese.

Civil Society in the Internet Age

Media are often considered an indispensable part of the global civil society (Castells, 1996). Traditional mass media are usually based on national systems and promote a sense of loyalty and obligation towards nation-states. New media such as the Internet and mobile devices disrupt the linkage between media and local context, and support collective actions that transcend national boundaries (Shirky, 2009). Examples such as Wikileaks and the 2011 “Arab Spring” demonstrate how the Internet has helped unleash the networking power of civil actors in an unprecedented way, opening up possibilities for the marginalized and disadvantaged to challenge authorities.

A considerable number of studies have examined the impact of Internet use on the development of civil societies (Biddix & Park, 2008; Chu & Tang, 2005; Yang, 2003a, b). Civil groups in different countries tend to eagerly adopt websites and social media to advance their cause (Yang & Taylor, 2010). These studies demonstrate how the Internet empowers individuals and organizations in various ways, and how civil actors use the Internet to communicate their missions and goals to the general public, coordinate action across wide geographic distance and influence nation-states' policies.

In China, the state has substantial influence over mass media (Zhang, 2009). Information that is inconsistent with mainstream ideology can have a hard time getting into media channels. The Internet may provide an ideal channel for NGOs who lack access to mass media to reach out to the general public. For example, Yang (2005) found that the bulletin board system run by Friends of Nature had 2,380 registered users and 14,151 postings by 2004.

To examine the pattern of NNGOs and SNGOs' virtual networks in China, and the effects derived from those networks, this paper employs Structural Hole Theory as its theoretical framework. The following section outlines this theory and its applicability for explaining the effects of different network positions (Burt, 1992).

Structural Hole Theory and Hyperlink Network Analysis

Structural Hole Theory is rooted in social network theories such as the strength of weak ties (Granovetter, 1973), betweenness centrality (Freeman, 1977), network exchange theory (Cook & Emerson, 1978), and Burt's (1980) observation of the autonomy among conflicting affiliations. According to Burt (1992), "a structural hole is a relationship of nonredundancy between two contacts . . . as a result of the hole between them, the two contacts provide network benefits that are in some degree additive rather than overlapping" (p. 18).

SHT describes the effect of different network positions (Burt, 1992). In a given network, the importance level of an actor does not entirely depend on the actor's attributions, but also on the actor's network position. Network position is a concept widely studied by social network researchers (Monge & Contractor, 2003). Burt (1997) defines network position as "the specified set of relations to and from each actor in a system" (p. 343). Research has shown that network position significantly influences actors' performance levels (Zaheer & Bell 2005).

Although networks are saturated with information, information does not spread evenly in networks (Burt, 1992). Actors occupying strategically favorable network positions tend to have advantages over others in terms of information access. SHT defines the benefits of social relationships in terms of information advantages deriving from linkages among otherwise disconnected individuals (Burt, 1992). Although Burt (1992) mainly discusses structural holes from a management perspective, scholars have applied this theory to study the effect of structural holes on the maintenance and creation of civil society (Stohl & Stohl, 2005; Taylor & Doerfel, 2003). These studies found that filling structural holes helps to strengthen

NGOs' positions within the civil global network and reinforces the overall robustness of the network.

The existence of structural holes indicates disconnections among actors within networks. For example, Rogers and Ben-David (2008) studied the virtual networks of NGOs that participated in the Palestinian–Israeli peace process. This study found that local SNGOs' campaigns were ignored by transnational NNGOs. SNGOs and NNGOs formed respective issue networks that rarely connected with each other. This network structure separated SNGOs' issue discourse from that of NNGOs, and limited the influence of both types of NGOs. In contrast, if an actor can bridge the structural hole, the actor can gain more benefits through mechanisms such as (1) better access to valuable information, (2) getting faster information, and (3) gaining more valuable and important acquaintances in a network.

SHT proposes the concept of *constraint* to measure the number of structural holes surrounding an actor and the actor's level of dependency on other actors in the network (Burt, 1992). A higher constraint value suggests that an actor has fewer others to gain support or get alternative resources from. SHT maintains that actors who locate in diversified networks and connect to important social actors can gain considerable benefits, and enjoy great influence. For example, Foljanty-Jost's (2005) examination of NGOs' network positions in Japan and Germany found that German NGOs tend to position themselves in pluralistic networks and are well integrated in policy-making networks. By contrast, the study found that in Japan, NGOs are relatively weak in terms of occupying advantageous network positions. This difference helps to explain German NGOs' powerful influence and Japanese NGOs' relatively passive role.

SHT suggests effective collaboration requires close communication that fosters trust (Burt, 1992). *Effective size* measures the strength of one actor's connection with other contactors and reflects trust. Effective size is positively associated with the observed number of contacts. According to Burt (1992), outside actors need to develop relationships with indigenous actors to gain mutual trust. As Burt (1992) puts it, "the question is not whether to trust, but whom to trust" (p. 15). For transnational NGOs that are unfamiliar to locals, building strong relationships with local organizations may be the first step towards gaining trust in a local context.

As far as China is concerned, Ma (2002) noted that the sensitivity of the NGO issue, "and the impossibility of conducting survey research in China in the ways that have become standard in the United States make the study of Chinese nongovernmental behavior a very difficult task" (p.307). With the development of data-mining technology, hyperlink network analysis enables the collection of NNGOs' and CNGOs' virtual network data. The following section introduces this method.

Hyperlink Network Analysis

The emergence of the Internet as an important communication context calls for the development of new methods, such as hyperlink network analysis (HNA hereafter), to gather virtual network data and offer measures that illustrate online social

relationships (Park & Thelwall, 2003). Derived from social network analysis, the method examines hyperlinks, a basic structural element of the Internet which allows a website to “play the role of an actor who could influence other websites’ trust, prestige, authority, or credibility” (Park, 2003, p. 53). HNA enables researchers to trace how information flows through direct and indirect network ties and how websites form coalitions or cliques (Garton, Haythornthwaite, & Wellman, 1997). Studies have found that hyperlink networks reflect relationships among individuals or organizations, and that the hyperlinks of an organization’s website are illustrative of its choice of alliances (Park, 2003; Shumate & Lipp, 2008). Since websites receive different numbers of hyperlinks, the uneven distribution of hyperlinks suggests that different websites occupy different network positions (Park, 2003; Wellman, 2001). Thus Jackson (1997) contends that HNA provides a robust quantitative approach for studying network structures on the web (Bennett, Foot, & Xenos, 2011).

Methodology

Sample

The following methods were used to obtain data on the hyperlink networks of NGOs’ websites. First the profile of 200 NNGOs working in China was obtained from the Beijing Civil Society Development Research Center (2005). The majority of these NNGOs have collaborated with Chinese government agencies, local communities, and organizations. For the purpose of this study, only NNGOs focusing on environmental protection were included. Overall, 32 NNGOs such as Greenpeace and International Rivers Network were identified, all of which had functioning websites.

The access to CNGOs’ websites was established through a website named *Chinese Environmental NGOs Online* (www.greenngo.cn). This website is by far the most comprehensive information source about Chinese ENGOS. To date, 151 ENGOS from Mainland China had registered as members of this website, of which 83 (55 percent) either had bad links or led to sites that were not actually the sites for the registered websites. Overall, 68 (45 percent) valid ENGO websites were identified for further analysis.

In order to obtain the hyperlink data, a web crawler, LexiURL Searcher, was employed. LexiURL Searcher can mine hyperlinks among websites. The study used the default setting, which commended the crawler to mine two levels under the top-level domain with a maximum of 10,000 queries per day. The obtained data were further processed, and transformed into three directional network data matrixes: NNGOs’ network, CNGOs’ network, and the combined NNGOs’ and CNGOs’ network.

Measure

To assess NGOs’ virtual network positions, the in-degree and out-degree centrality for each website was calculated. In-degree centrality represents the total number of

links a focal website receives. Out-degree centrality refers to the hyperlinks a website sends out (Thelwall, 2009). To assess NGOs' virtual structural hole condition, two variables were calculated: constraint and effective size. This paper adopted Burt's (1992) measure of structural holes constraint which is calculated according to this equation:

$$\left(p_{ij} + \sum_{q \neq i,j} p_{iq} p_{qj} \right)^2$$

where i represents the focal actor, q and j are two contactors of i , p_{ij} is the proportional strength of p 's relationship with j , p_{iq} is the proportional strength of i 's relationship with q , and p_{qj} is the proportional strength of q 's relationship with j .

Effective size is another structural hole measure. Effective size measures the strength of connection and is measured by the following equation (Burt, 1992):

$$q - m_{jq}$$

where q represents the number of alters, and m_{jq} represents the average degree of alters within the network.

To assess the amount of media coverage an NNGO received in China, the search function of Baidu was utilized. Baidu (www.baidu.com) is the largest Chinese-language search engine, and its news search function was used to identify both online and offline news coverage (in Chinese) containing the name of an NNGO. The name of each NNGO was fed into the search engine, with the number of returned search results indicating the amount of news coverage.

Results

Hypothesis 1 predicted that there was a significant difference between the constraint level of NNGOs' and CNGOs' networks. To test H1, an independent sample- t test was performed to compare the mean score of NNGOs' and CNGOs' constraint level within the combined network. A significant difference was found: $t(98) = 3.53$, $p < .01$. The mean of CNGOs was significantly lower ($M = .73$, $SD = .33$) than that of NNGOs ($M = .96$, $SD = .24$). H1 was therefore supported. A higher constraint value suggests that an actor has fewer others from whom to gain support or resources. This finding suggests that in China, NNGOs are surrounded by more structural holes, and have fewer alternative connections than SNGOs. This finding is consistent with previous studies, which found that in developing countries, NNGOs tend to have fewer local connections than SNGOs (Ahmad, 2006; Smith et al., 1998). It also reveals that NNGOs' offline communication pattern may have been reproduced online.

Hypothesis 2 predicted that there was a significant difference between the effective size of NNGOs' and CNGOs' virtual networks. An independent-sample t test was performed to compare the mean score of NNGOs' and CNGOs' effective size within the combined network. A significant difference was found: $t(98) = 2.66$, $p < .05$. The

Table 1 Results from OLS Regression of NNGO's Publicity Level on Constraint Level and Effective Size

Predictor	df1	df2	Standard coefficients	Adjusted			p
				R ²	R ²	F	
Constraint	2	29	.24	.84	.71	35.61	.12
Effective size	2	29	1.00***	.84	.71	35.61	.00

* $p < .05$, ** $p < .01$, *** $p < .001$.

mean of CNGOs was significantly higher ($M = 6.36$, $SD = 7.95$) than that of NNGOs ($M = 2.48$, $SD = 3.07$). H2 was also supported. Since effective size is positively associated with the strength of connections among network actors, this finding suggests that CNGOs are more closely connected with other actors than NNGOs. Again, this finding is consistent with previous studies, and implies that SNGOs are better embedded in the local networks (Ahmad, 2006; Smith et al., 1998).

Hypotheses 3 and 4 predicted that an NNGO's constraint level and effective size would determine the amount of news coverage NNGOs received in a local context. To test H3 and H4, a multiple regression analysis was performed on network data drawn from the combined network. This regression analysis used two Structural Hole variables, NNGOs' constraint level and effective size, to predict the amount of media coverage each NNGO could get. H3 was rejected, and H4 was supported. For constraint, the effect was not significant: $\beta = .24$, *ns*. For effective size, the effect was significant: $\beta = 1.00$, $p < .001$, adj. $R^2 = .71$, $F(2, 29) = 35.61$, $p < .001$ (see Table 1 for details). This finding suggests that for NNGOs to gain media attention in China, it is just as important to build multiple connections as it is to develop close connections with CNGOs. It is possible that NNGOs that closely interact with CNGOs are more likely to be noticed by local media.

Research question 1 directed attention to the virtual network structure of environmental NNGOs working in China. As the black nodes on the left side of Figure 1 and the results reported in Table 2 indicate, the NNGOs' network structure is not highly centralized. The sizes of nodes in Figure 1 are in proportion to their in-degree centralities, and the larger nodes have higher levels of in-degree centrality than

Table 2 Out-Degree Centrality, In-Degree Centrality, and Density of the NNGOs' Network, SNGOs' Network, and the Combined Network

	Out-degree centrality		In-degree centrality		Density	
	M	SD	M	SD	M	SD
NNGOs' Network	0.132	0.561	0.132	0.570	0.013	0.319
SNGOs' Network	0.344	0.983	0.344	0.895	0.065	0.079
Combined Network	0.496	1.325	0.496	1.208	0.496	5.844

Note. The figures reported in this table are normalized.

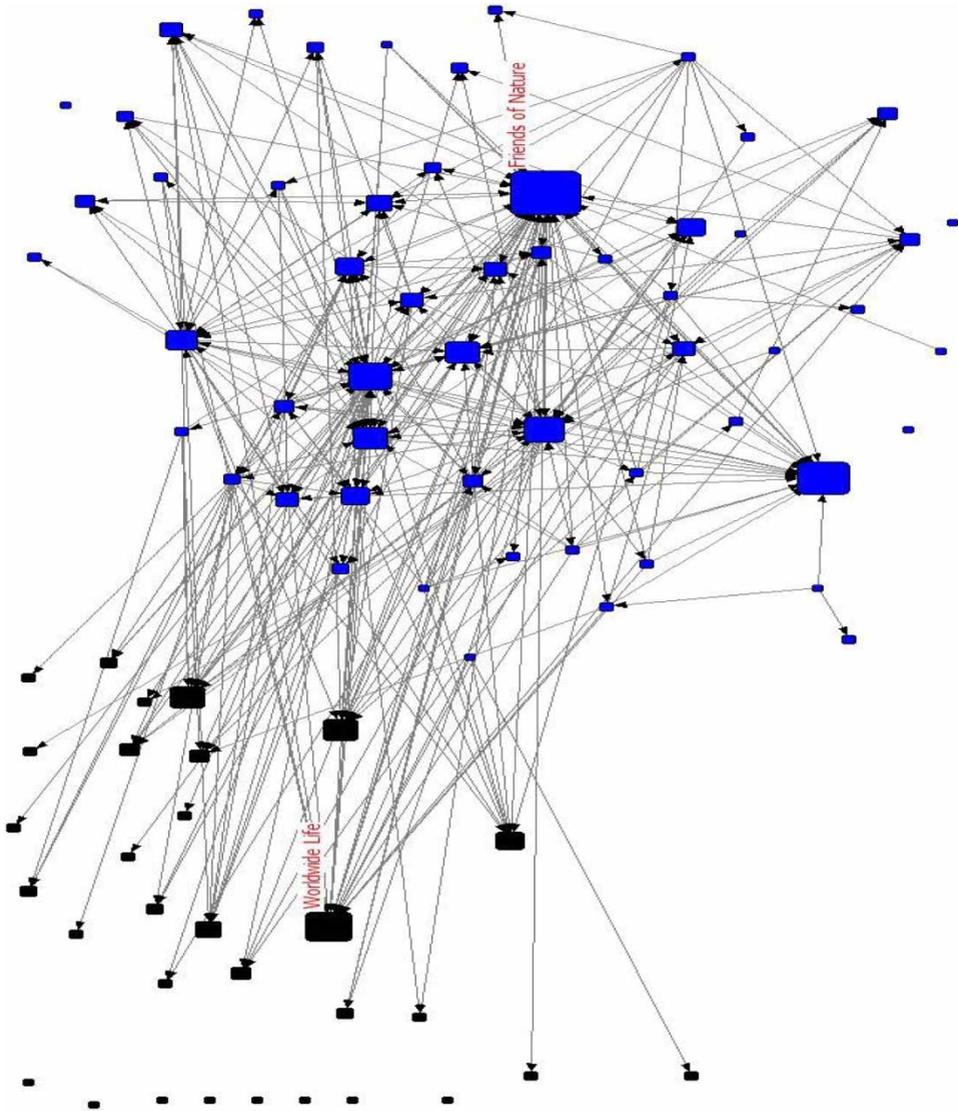


Figure 1 Northern and Southern Environmental NGOs' Virtual Network. Black nodes are Northern NGOs. Blue Nodes are Southern NGOs. The Sizes of Nodes Are in Proportion to Their in-Degree Centralities.

smaller nodes. The network had low degree centralization for both out-degree centrality (3.19 percent) and in-degree centrality (3.26 percent). This finding revealed that only 3.19 percent of all possible outgoing-ties were present and only 3.26 percent of all possible incoming-ties were present. The mean normalized out-degree centrality was 0.13 ($SD=0.56$); the mean normalized in-degree centrality was 0.13 ($SD=0.57$). The two means were fairly close and indicated a low level of network centrality. In terms of the density of this network, the study found that connections

among NNGOs working in China were not very close either, which was revealed by the average density score = 0.01 ($SD = 0.32$). Figure 1 visualizes the network, and shows that 8 NNGOs had no connection with other NNGOs/SNGOs. Although these NNGOs all worked in China and focused on the same issue area, environmental protection, they did not develop virtual connections. Among the NNGOs that were well connected, *Worldwide Life* was the largest recipient of ties among NNGOs.

Research question 2 explored the virtual network structure of CNGOs. The finding suggests that CNGOs' structure is more centralized than that of NNGOs. This was demonstrated through the centralization indexes which revealed that 5.53 percent of all possible outgoing-ties were present and 4.18 percent of all possible incoming ties were present. The mean normalized out-degree centrality was 0.34 ($SD = 0.98$); and the mean normalized in-degree centrality was 0.13 ($SD = 0.90$). This suggests that CNGOs are far more likely to initiate ties to other NGOs, and when compared with NNGOs, CNGOs are also more likely to send links to each other. In terms of network density, the analysis showed that connections among CNGOs were more intensive when compared with NNGOs, as indicated by the average density score = 0.07 ($SD = 0.08$). This finding suggests that CNGOs are more eager to participate in coalition in the virtual context than NNGOs. The blue nodes on the right side of Figure 1 reveal a network with denser ties than the NNGOs' network. *Friends of Nature* was the largest recipient of ties among CNGOs.

Research question 3 directed attention to the current condition of the virtual partnership network structure of environmental NNGOs and CNGOs. The findings suggest that this combined network has the most centralized structure among the three networks (NNGOs' network, CNGOs' network, and the combined network). This was demonstrated through the centralization indexes for both out-degree centrality (8.91 percent) and in-degree centrality (5.83 percent) which suggested that 8.91 percent of all possible outgoing ties were present and 5.83 percent of all possible incoming ties were present. The mean normalized out-degree centrality was 0.50 ($SD = 1.33$), and normalized in-degree centrality was 0.50 ($SD = 1.21$). In terms of the density of this network, the study found that NGOs included in this network were closely connected, which was indicated by the average density score = 0.50 ($SD = 5.84$). Given that the density and centrality indexes of this combined network were larger than the values found in separate NNGOs' and CNGOs' networks, it seems interconnections among NNGOs and CNGOs are more frequent. The overall structure of Figure 1 also shows that NNGOs and CNGOs have close connections.

Table 3 Density of Ties Among NNGOs and Chinese NGOs in the Combined Network

Organizations	NNGOs	Chinese NGOs
NNGOs ($n = 32$)	0.012	0.535
Chinese NGOs ($n = 68$)	0.535	0.847

Note. Overall density = 0.496; $SD = 5.844$.

In addition, to explore the patterns of connections among NNGOs and CNGOs in the combined network, the study employed blockmodeling and E-I index analysis to demonstrate tie distribution patterns. First, the study imposed two separate blocks on the original network based on the NGOs' origins: Northern and Chinese. As Table 3 suggests, CNGOs were more likely to work with other CNGOs than NNGOs were to collaborate with other NNGOs; connections among NNGOs and CNGOs also surpassed cooperation among NNGOs.

Next, to examine the overall patterns of interblock (between NNGOs and CNGOs) relations, an E-I (external–internal) index analysis was conducted. E-I index analysis indicates whether connections within groups are more frequent than between groups or vice versa (Krackhardt & Stern, 1988). In this network, 63.9 percent ties were internally distributed within each group, while only 36.1 percent ties were externally distributed between NNGOs and CNGOs (E-I index = $-.0279$, $p < .05$, a negative value suggests that more ties are internal within each group than between groups). Given that the expected E-I index = $-.047$ and the absolute value of the observed E-I index is larger than that of the expected value, on the one hand, it can be concluded that this network displays a preponderance of internal over external ties. On the other hand, the E-I index analysis also further confirmed the validity of the block classification and suggested that there were, indeed, two blocks in the combined network.

Overall, the findings reveal important patterns of NGOs' online communication structure. NNGOs had less diversified networks when compared with CNGOs. In terms of effective size, CNGOs were more closely connected with other actors. NNGOs were less likely to develop virtual ties with other NNGOs but more likely to connect with CNGOs. By contrast, CNGOs were eager to develop connections with other CNGOs and NNGOs in cyberspace. Overall, relationships between NNGOs and CNGOs tended to be internally distributed within each group. These findings suggest that opportunities exist for closing the gap between NNGOs and CNGOs in cyberspace. Finally, the findings suggest that for NNGOs to attract more media coverage, it is important for them to develop close connections with local NGOs.

Discussion

Communication and information networks have become prominent social structures in contemporary society (Castells, 2008). The impact of new media such as the Internet on transnational and domestic civil networks is increasingly apparent and has changed the mobilization and organization of social movements (Shumate & Lipp, 2008). This paper explored the structure of NNGOs' and SNGOs' virtual networks in the context of China, and offers a benchmark description of the relationship structure of the two types of organizations. Several aspects of the analysis deserve further attention.

First, NNGOs in this local context occupy a less powerful network position when compared with CNGOs. NNGOs were surrounded by more structural holes and had fewer alternative connections. The virtual network among NNGOs working in China

is not very cohesive. This finding is consistent with studies of NNGOs' offline networks (Ahmad, 2006; Atouba & Shumate, 2010; Smith et al., 1998). It is, however, slightly divergent from Shumate and Dewitt's (2008) study of NNGOs' and SNGOs' (working in the field of HIV/AIDS prevention) hyperlink patterns, which found that NNGOs are more willing to develop hyperlinks with other NGOs. Further research should explore if the observed difference is caused by the different issue areas—environmental protection vs. HIV/AIDS protection—or the political context of China. Although the Internet helps NNGOs to expand their virtual network, it seems that NNGOs still follow their offline communication patterns in cyberspace (Smith et al., 1998). The social network literature has documented the value of diverse networks for civil actors (Foljanty-Jost, 2005). This study reveals the need for NNGOs to further explore opportunities afforded by the Internet and to allocate resources to relationship building with their counterparts, from both of the global North and South.

Also consistent with previous findings about SNGOs' coalition, this research found that CNGOs were eager to develop connections with other civil actors in the virtual environment. CNGOs were better embedded in the combined network: not only did they have better connections with other CNGOs, but also they were willing to build relationships with NNGOs. Since many NNGOs lack the local connections needed to reach out to local residents, CNGOs that actively connect with NNGOs may build mutually beneficial relationships with international civil actors. It is worth mentioning here that although CNGOs received more hyperlinks within this local context, this does not necessarily mean that SNGOs obtain more hyperlinks than NNGOs at the global level, as transnational NNGOs tend to receive hyperlinks from multiple countries and regions. Gonzalez-Bailon (2009) found that NGOs with the greatest economic resources receive the largest number of hyperlinks. Hence, CNGOs' connections with NNGOs can be advantageous, allowing them to promote their issues and agenda in the international arena. In addition, the domestic political environment in China is not conducive to the development of a thriving civil society. International connections and assistance may strengthen CNGOs and lay the foundation for the development of civil society, while for NNGOs, connections with CNGOs may introduce their missions and issues to millions of Chinese.

Second, the analysis suggests that for NNGOs to attract more media coverage in China, close connection with CNGOs is vital. Media coverage is essential for introducing NNGOs to the Chinese population at large. For NNGOs' issues to rise to the top of public consciousness, they need to effectively communicate their causes. Nowadays, many Chinese journalists collect news online and Internet users also actively search for information in cyberspace (Yang, 2003a). NNGOs' websites may present an ideal channel for them to disseminate information and attract visitors. However, since many local residents lack understanding and knowledge of NNGOs, they may be less likely to visit NNGOs' websites. The hyperlinks among NNGOs and CNGOs may direct some local NGOs' visitors to NNGOs' sites, and therefore help NNGOs draw local attention.

Third, the analysis demonstrated the ways in which the new technological context of global communication has opened up relationship building opportunities for emergent organizational cooperation between the North and South. Interconnections between NNGOs and CNGOs help increase the network intensity of the combined network. This finding suggests that NNGOs and SNGOs see each other as valuable strategic allies and are making efforts to build virtual connections.

Finally, in cyberspace, although each NGO has the freedom to decide how to develop hyperlink ties, collectively, their relationship building choices reflected a pattern that is influenced by their offline social relationships. This phenomenon reveals that organizations' offline social contexts may, to a certain extent, constrain or precondition their online relationships. For scholars and policy makers, it is important to understand the connection between NGOs' online and offline relationships, and to be more cautious about arguments that isolate the two contexts. A deeper understanding of NGOs' online and offline relationship would allow decision makers to set policies or programs that strengthen benign offline relationship patterns with virtual tools and, at the same time, adjust problematic tendencies.

Overall, findings suggest that NNGOs' transnational networks have started to connect with local NGOs' networks in cyberspace, but this partnership has yet to fulfill its full potential. NNGOs tend to reproduce their offline communication pattern, and are reluctant to build up connections not only with other international civil actors working in the same country and issue area, but also with local civil actors. Further studies should explore the reasons behind these phenomenon.

Implications and Conclusion

Civil associations are often viewed as indicators of a vibrant civil society (Putnam, 2001). NGOs, as important components of global civil society, contribute to the solution of a wide range of social issues. However, the mere presence of NGOs in a local context may not be adequate to assume that they can exert considerable influence. This study contributes to the international and intercultural communication literature by revealing communication patterns between transnational and local civil actors in cyberspace. Findings suggest that understanding whether transnational organizations are representative of the emergence of globalization from below should not be evaluated solely on their quantitative presence in the global south but should also be based on the dynamics of their cooperation with local civil actors.

Given the magnitude of many global issues such as global warming and poverty, it is imperative that NNGOs and SNGOs develop integrated transnational networks that connect global to local. Networks that link NNGOs to SNGOs can be beneficial for both sides. When NNGOs carry the SNGOs' agendas to the international tables, it helps SNGOs to influence global discourse (Castells, 2009). Close cooperation with SNGOs also legitimizes NNGOs' advocacy, and allows them to plan their programs from a local viewpoint (Lindenberg & Dobel, 1999). The Internet may potentially facilitate North and South communication in important issues such as environmental protection. However, as revealed in this study, the Internet does not automatically

guarantee better connections. It is important that both NNGOs and SNGOs strategically expand their virtual networks. A functioning global civil society requires negotiation to reach agreement and the participation of all civil actors. A vibrant and representative global civil society may be contingent on the proper management of existing differences.

Methodologically, this project attempts to increase appreciation among communication scholars of the value of network analysis for communication research. A major concern for scholars studying the Internet is the insufficiency of traditional research methods (Howard, 2002). Most traditional research methods are designed for physically centralized, boundary specific social interactions. Those methods used to be sufficient because communication through traditional media was thought to involve more direct patterns of social relationships. Online interactions are less territory-bounded, and online content is networked among and incorporates many social relational aspects of communication. The characteristics of the Internet require alternative research methods such as social network analysis. The combination of social network analysis and the online context is especially powerful because it utilizes data-mining techniques and computer software.

This study does have limitations. First, it focuses on Chinese environmental NGOs. Therefore, the findings may not be applicable to other types of NGOs or NGOs working in other countries. Further studies should examine if similar patterns can be observed in alternative contexts. Second, this study only examined the effect of two Structural Hole measures on the amount of media coverage that NNGOs can attract in a local context. It is possible that audiences' perceived credibility of NNGOs, and the number of visitors to NNGOs' websites are also influenced by NNGOs' network positions. Further studies should test the effect of multiple network position indexes. Third, because of the difficulty in obtaining reliable information about NNGOs and CNGOs working in China (Ma, 2002), the sample size of the study was limited by information sources. The unequal sample sizes of NNGOs and CNGOs may have influenced the network density and centrality measures. If the political environment in China becomes more tolerant, researchers should gather more comprehensive information about NGOs working in China to facilitate future research.

In sum, this study provides an excellent snapshot of an emerging social trend that may have implications in ways we cannot yet anticipate. As the Internet increasingly shrinks the distance between the global North and South, along with opportunities, come issues or even conflicts. The study calls for more academic attention to the vital role of an egalitarian, harmonious, and mutually beneficial communication structure that could lay the ground for a thriving global civil society.

References

- Ahmad, M.M. (2006). The NGO debate in "development." In M.C. Behera (Ed.), *Globalising rural development: Competing paradigms and emerging realities* (pp. 183–208). New Delhi: Sage.
- Anderson, I. (2000). Northern NGO advocacy: Perceptions, reality, and the challenge. *Development in Practice*, 20(3&4), 445–452.

- Anheier, H.K., & Salamon, L.M. (1998). *The nonprofit sector in the developing world*. Baltimore, MD: Johns Hopkins University Press.
- Atouba, Y., & Shumate, M. (2010). Interorganizational networking patterns among development organizations. *Journal of Communication*, 60, 293–317.
- Beijing Civil Society Development Research Center. (2005). *200 International NGOs in China*. Beijing: Beijing Civil Society Development Research Center.
- Bennett, W.L., Foot, K., & Xenos, M. (2011). Narratives and network organization: A comparison of fair trade systems in two nations. *Journal of Communication*, 61(2), 219–245.
- Biddix, J.P., & Park, H.W. (2008). Online networks of student protest: The case of the living wage campaign. *New Media & Society*, 10(6), 871–891.
- Bradshaw, Y.W., & Schafer, M.J. (2000). Urbanization and development: The emergence of international nongovernmental organizations amid declining states. *Sociological Perspectives*, 43, 97–116.
- Brettell, A. (2000). Environmental non-government organizations in the People's Republic of China: Innocents in a co-opted environmental movement? *Journal of Pacific Asia*, 6, 27–56.
- Burt, R.S. (1980). Autonomy in a social topology. *American Journal of Sociology*, 85, 892–925.
- Burt, R.S. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.
- Burt, R.S. (1997). The contingent value of social capital. *Administrative Science Quarterly*, 42, 339–365.
- Castells, M. (1996). The information age: Economy, society, and culture. In *The Rise of the Network Society (Vol. 1)*. Oxford: Blackwell Publishers.
- Castells, M. (2008). The new public sphere: Global civil society, communication networks, and global governance. *The ANNALS of the American Academy of Political and Social Science*, 616, 78–93.
- Castells, M. (2009). *Communication power*. New York: Oxford University Press.
- Chu, Y.W., & Tang, J.T.H. (2005). The Internet and civil society: Environmental and labor organizations in Hong Kong. *International Journal of Urban & Regional Research*, 29(4), 849–866.
- Cook, K.S., & Emerson, R.M. (1978). Power, equity, and commitment in exchange networks. *American Sociological Review*, 43, 721–739.
- DeMars, W.E. (2005). *NGOs and transnational networks: Wild cards in world politics*. London: Pluto Press.
- Dichter, T.W. (1999). Globalization and its effects on NGOs: Efflorescence or a blurring of roles and relevance? *Nonprofit and Voluntary Sector Quarterly*, 28, 38–58.
- Edwards, M., Hulme, D., & Wallace, T. (1999). NGOs in a global future: Marrying local delivery to worldwide leverage. *Public Administration and Development*, 19, 1–23.
- Foley, M.W., & Edwards, B. (1996). The paradox of civil society. *Journal of Democracy*, 7, 38–52.
- Foljanty-Jost, G. (2005). NGOs in environmental networks in Germany and Japan: The question of power and influence. *Social Science Japan Journal*, 8, 103–117.
- Freeman, L.C. (1977). A set of measures of centrality based on betweenness. *Sociometry*, 40, 35–40.
- Garton, L., Haythornthwaite, C., & Wellman, B. (1997). Studying online social networks. *Journal of Computer Mediated Communication*, 3, Paper retrieved from <http://jcmc.indiana.edu/vol3/issue1/garton.html>.
- Gonzalez-Bailon, S. (2009). Opening the black box of link formation: Social factors underlying the structure of the web. *Social Networks*, 31(4), 271–280.
- Granovetter, M.S. (1973). The strength of weak ties. *American Journal of Sociology*, 78, 1360–1380.
- Hafner-Burton, E.M., & Tsutsui, K. (2005). Human rights in a globalizing world: The paradox of empty promises. *American Journal of Sociology*, 110, 1373–1411.
- Hall, P.A., & Taylor, R.C.R. (1996). Political science and the three new institutionalisms. *Political Studies*, 44, 936–957.

- Harris, P.G. (2006). Environmental perspectives and behavior in China: Synopsis and bibliography. *Environment and Behavior*, 38, 5–21.
- Ho, P. (2001). Greening without conflict? Environmentalism, NGOs and civil society in China. *Development and Change*, 32, 893–921.
- Howard, P.N. (2002). Network ethnography and the hypermedia organization: New media, new organizations, new methods. *New Media & Society*, 4(4), 550–574.
- Hudson, A. (2001). NGOs' transnational advocacy networks: From "legitimacy" to "political responsibility"? *Global Networks*, 1, 331–352.
- Hughes, M.M., Peterson, L., Harrison, I.A., & Paxton, P. (2009). Power and relation in the world polity: The INGO network country score, 1978–1998. *Social Forces*, 87, 1711–1742.
- Jackson, M.H. (1997). Assessing the structure of communication on the World Wide Web. *Journal of Computer-Mediated Communication*, 3. Paper retrieved from <http://www.ascusc.org/jcmc/vol2003/issue2001/jackson.html>.
- Kenny, M., & Germain, R.D. (2005). The ideal of global civil society: Introduction. In R.D. Germain & M. Kenny (Eds.), *The idea of global civil society: Politics and ethics in a globalizing era* (pp. 1–15). New York: Routledge.
- Krackhardt, D., & Stern, R.N. (1988). Informal networks and organizational crises: An experimental simulation. *Social Psychology Quarterly*, 51(2), 123–140.
- Kwon, K., Barnett, G.A., & Chen, H. (2009). Assessing cultural differences in translations: A semantic network analysis of the universal declaration of human rights. *Journal of International and Intercultural Communication*, 2(2), 107–138.
- Lee, S. (2007). Environmental movements and social organizations in Shanghai. *China Information*, 21, 269–298.
- Lewis, D., & Sobhan, B. (1999). Routes of funding, roots of trust? Northern NGOs, Southern NGOs, donors, and the rise of direct funding. *Development in Practice*, 9(1 & 2), 117–129.
- Lindenberg, M., & Dobel, J.P. (1999). The challenges of globalization for Northern international relief and development NGOs. *Nonprofit and Voluntary Sector Quarterly*, 28, 4–24.
- Ma, Q. (2002). The governance of NGOs in China since 1978: How much autonomy? *Nonprofit and Voluntary Sector Quarterly*, 31(3), 305–328.
- Meyer, J.W., Boli, J., Thomas, G.M., & Ramirez, F.O. (1997). World society and the nation-state. *The American Journal of Sociology*, 103(1), 144–181.
- Monge, P.R., & Contractor, N.S. (2003). *Theories of communication networks*. New York: Oxford.
- Nabacwa, M.S. (2005). Gender networking and advocacy work in Uganda: Controlling the agenda and strategies of resistance. *Gender and Development*, 13, 34–41.
- Park, H.W. (2003). Hyperlink network analysis: A new method for the study of social structure on the web. *Connections*, 25, 49–61.
- Park, H.W., & Thelwall, M. (2003). Hyperlink analyses of the World Wide Web: A review. *Journal of Computer Mediated Communication*, 6. Paper retrieved from <http://jcmc.indiana.edu/vol8/issue4/park.html>
- Park, N., & Yang, A. (2012). Online environmental community members' intention to participate in environmental activities: An application of the theory of planned behavior in the Chinese context. *Computers in Human Behavior*, 28, 1298–1306.
- Putnam, R.D. (2001). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Rogers, R., & Ben-David, A. (2008). The Palestinian–Israeli peace process and transnational issue networks: The complicated place of the Israeli NGO. *New Media & Society*, 10, 497–528.
- Rooy, A.V. (2000). Good news! You may be out of a job: Reflections on the past and future 50 years for Northern NGOs. *Development in Practice*, 10(3&4), 300–318.
- Saich, T. (2000). Negotiating the state: The development of social organizations in China. *The China Quarterly*, 161, 125–41.
- Shirky, C. (2009). *Here comes everybody: The power of organizing without organizations*. London: Penguin Books.

- Shumate, M. (2008, January). The evolution of the HIV/AIDS hyperlink network. Paper presented at the 2008 International Communication Association Annual Meeting, St. Pete Beach, FL.
- Shumate, M., & Dewitt, L. (2008). The north/south divide in NGO hyperlink networks. *Journal of Computer Mediated Communication*, 13, 405–428.
- Shumate, M., & Lipp, J. (2008). Connective collective action online: An examination of the hyperlink network structure of an NGO issue network. *Journal of Computer Mediated Communication*, 14, 178–201.
- Skocpol, T., Ganz, M., & Munson, Z. (2000). A nation of organizers: The institutional origins of civic voluntarism in the United States. *The American Political Science Review*, 94, 527–546.
- Smith, J., Pagnucco, R., & Lopez, G.A. (1998). Globalizing human rights: The world of the transnational human rights NGOs in the 1990s. *Human Rights Quarterly*, 20, 379–412.
- Stohl, M., & Stohl, C. (2005). Human rights, nation states, and NGOs: Structural holes and the emergence of global regimes. *Communication Monographs*, 72, 442–467.
- Su, W. (2010). To be or not to be? China's cultural policy and counterhegemony strategy toward global Hollywood from 1994 to 2000. *Journal of International and Intercultural Communication*, 3(1), 38–58.
- Tang, S., & Zhan, X. (2008). Civic environmental NGOs, civil society, and democratization in China. *Journal of Development Studies*, 44, 425–448.
- Taylor, M., & Doerfel, M. (2003). Building interorganizational relationships that build nations. *Human Communication Research*, 25, 30–65.
- Thelwall, M. (2009). *Introduction to Webometrics: Quantitative web research for the social sciences*. San Rafael, CA: Morgan & Claypool Publishers.
- Wellman, B. (2001). Computer networks as social networks. *Science*, 293, 2031–2034.
- Xie, L., & Ho, P. (2008). Urban environmentalism and activists' network in China: The cases of Xiangfan and Shanghai. *Conservation and Society*, 6, 141–153.
- Yang, A., & Taylor, M. (2010). Relationship-building by Chinese ENGOs' websites: Education, not activation. *Public Relations Review*, 36, 342–351.
- Yang, G. (2003a). The Internet and civil society in China: A preliminary assessment. *Journal of Contemporary China*, 12, 453–475.
- Yang, G. (2003b). The co-evolution of the Internet and civil society in China. *Asian Survey*, 43, 405–422.
- Yang, G. (2005). Environmental NGOs and institutional dynamics in China. *The China Quarterly*, 182, 46–66.
- Yi, W. (2006). China's environmental and developmental issues in transition. *Social Research*, 73, 277–291.
- Zaheer, A., & Bell, G.G. (2005). Benefiting from network position: Firm capabilities, structural holes, and performance. *Strategic Management Journal*, 26, 809–825.
- Zhang, L. (2009). Chinese women protesting domestic violence: The Beijing conference, international donor agencies, and the making of a Chinese Women's NGO. *Meridians: Feminism, Race, Transnationalism*, 9, 66–99.