

CSD Research Report

National Service Impacts on Nonprofit Community Networks

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Center for Social Development
Global Service Institute



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Abstract

National Service Impacts on Nonprofit Community Networks

As the relationship between the nonprofit and government sectors evolves to accommodate the shift to devolution of government services, new collaborations are forming to increase resources. These collaborations illustrate the shift towards network governance and the accompanying increase in participatory democracy (deLeon 1992). Community networks are perceived as tools for helping build and sustain democratic, civic cultures. Using a network-based approach to measure social capital, this research explores the relationship between the AmeriCorps*National Civilian Community Corps (NCCC) and the nonprofit groups with whom it works to understand how public policy can support nonprofit-government collaborations designed to strengthen communities in terms of civic engagement and development and to determine whether the NCCC's goal— to “strengthen the ties that bind us together as a nation”—by collaborating with nonprofit groups has been successful.

The focus of this research is the community-level interrelations within the nonprofit community. Explored are the relationship between community networks, social capital, and democracy. This type of relationship is called “state-society synergy,” that is, the “mutually reinforcing relations between governments and groups of engaged citizens” that can construct social capital within communities (Evans, 1996: 1119). Using the AmeriCorps NCCC program as the empirical subject, I examine the way sponsoring nonprofit communities handle resource allocation and strategic planning to construct social capital and strengthen the connections among the community that are often credited to an increase in social capital (Jacobs, 1961; White, 2002).

A social network analysis of the four communities prior to engaging in a relationship with the AmeriCorps NCCC is compared to the analysis after the community engages in the collaboration. Changes in the strength of ties, centrality, and structural holes, as well as correlations between strength of ties, trust, and influence are discussed as an indicator of the affect of the collaboration. The results show that the intervention of the AmeriCorps NCCC program can foster an increase of weak ties and structural holes in the communities that they partner with.

National Service Impacts on Nonprofit Community Networks

The social infrastructure that determines community capacity is highly dependent on the nonprofit sector. It is common today to find social networks within a community that consist of intersectoral partners, each participating at various levels and times. Increasingly, a single organization, agency, or corporation cannot independently handle social processes.

Relationships that involve resource and knowledge exchange throughout the three sectors are the norm and certainly the latest trend in successful social service models. How nonprofits fit into the larger picture of intersectoral processes is an emerging area of research; however, little understanding of how such processes are coordinated exist, leaving us with important questions about who can serve as a catalyst, in what capacity, and when. This paper examines the role that a national service organization, the Americorps National Civilian Community Corps, plays in community capacity development by fostering intersectoral partnerships, specifically in its role in creating bridging social capital within the nonprofit communities where they work. The particular focus of this paper is the community-level interrelations (later referred to as the weak ties and structural holes) within the nonprofit community (this community is identified by the sponsoring nonprofit when they identify who the most important partners are e.g., other nonprofits, recipients of services, business, foundations, public agencies, and community members).

Background

Processes that involve actors from various sectors at differing levels have been labeled network governance. Scholars such as Hager and Wagenaar (Hager & Wagenaar, 2004: 1) acknowledge this movement as “the shift in vocabulary that has occurred over the last ten years...terms such as ‘governance’, ‘institutional capacity’, ‘networks’, ‘complexity’, ‘trust’, ‘deliberation’, and ‘interdependence’ dominate the debate, while terms such as ‘the state’,

‘government’, ‘power’ and ‘authority’, ‘loyalty’, ‘sovereignty’, and ‘interest groups’ have lost their grip on the analytical imagination.” Network governance is the current movement towards a more democratic, participatory society, has been a part of public policy discourse for some time (Fischer, 1989, 1995, 1998, 1993; Lasswell, 1951, 1956), (deLeon, 1992, 1994, 1994a, 1995, 1997) (Dryzek, 1990, 1996) and nonprofits are playing an important role in network governance models. Community networks are perceived as tools for helping build and sustain democratic, civic cultures (Evans, 1996: 1119), linking the assumption that network governance is an indication of a more participatory, democratic society. The success of network governance is well-documented (Calton & Lad, 1995; Canan & Reichman, 2001; Cashore & Vertinsky, 2000; Hajer & Wagenaar, 2003); however, models of network governance and tools to evaluate and implement the process are rare.

The dominant reason that traditional forms of governance no longer provide the guidance to reach successful outcomes is because “certain forms of exchange are more social – that is, more dependent on relationships, mutual interests, and reputation – as well as less guided by a formal structure of authority” (Smith & Lipsky, 1993). Maybe the most prevalent appearance of network governance is illustrated in the practice of providing social services and other public goods through nonprofit-government partnerships. As the decentralization of services continues, the need for network governance (and an understanding of the phenomenon) is increasingly important to the survival of the nonprofit sector and the adequate provision of services to the public.

Historically, nonprofits have played a key role in providing services to underprivileged persons and other populations in need (Smith & Lipsky, 1993). What began as predominantly religious activists striving to meet the needs in their communities has slowly become an intrinsic part of the social infrastructure. Traditionally, funding for nonprofits was achieved in the form

of charitable donations. This is still very much true; however, the privatization of government services has resulted in a large percentage of nonprofits receiving the majority of their funding from government grants. In 1993, President Bill Clinton passed the National and Community Service Act, throwing a new twist into the relationship between nonprofits and government. This bill introduced the development of the AmeriCorps programs and in turn, the direct provision by government of personnel to work in the nonprofit sector. AmeriCorps volunteers have since been placed in a variety of positions in many communities, funded partly by the nonprofits with whom they work, and partly by government funding. One of AmeriCorps' stated goals is to "inspire a pattern of lifelong civic engagement in order to foster the development of the much-needed social networks and actively pursue alternative remedies for unmet social needs" (Jacobs, 1961; White, 2002)—a goal often ascribed to and accomplished by the nonprofit sector. This shift has intensified the collaboration between the sectors and supports the observation of increased network governance. Similarly, this example of nonprofit-public-sector partnerships illustrates the need for further understanding and development of this type of collaboration. It is yet unclear whether nonprofits will be able to maintain the necessary capacity and financial growth necessary to take on the burdens once owned by the public sector.

With this background in mind, this study seeks to answer research questions related to the role that a public-private partnership between national service organizations and local nonprofit communities plays in social capital development related to collaborative governance. Research questions include: How does the social network structure of a nonprofit community change as a result of the intervention of a federal government national service program? What can the social network tell us about social capital? What kinds of structural changes to the network increase social capital?

Theoretical Framework

Using this network-based approach to social capital with a governance perspective, a theoretical approach is applied based on the works of leading network theorists (Bourdieu, 1983, 1997; Coleman, 1988; Putnam, 1995a, 1995b) and social capital authors (Bourdieu, 1983, 1997; Coleman, 1988; N. Lin, 2001a; Nan Lin, 2001b; Matthews, 2003; Portes, 1998; Putnam, 1995a, 1995b). Before Putnam (1995a) popularized the concept of social capital, it was first introduced by Bourdieu (1988, 1990) and Coleman (Coleman, 1988: 98). Bourdieu defines social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships in a group,” i.e., network ties based on trust (248). More than a simple network of ties, Bourdieu continues, social capital depends on the development of relationships that “are at once necessary and elective, implying durable obligations subjectively felt (feeling of gratitude, respect, friendship, etc.)” (1983, 249-50). James Coleman defines social capital in a functional way, based on the makeup of two components—some aspect of social structure and the facilitation of action by individuals within the structure. Determining the social capital of a community or group based upon its social structure has been applied to theories of social network analysis in the more recent years. Burt (1992) led the discussions by introducing his theories of structural holes in the early nineties. According to Burt (1992), social capital has two criteria, “first, it is a thing owned jointly by the parties in a relationship...if you or your partner in a relationship withdraws, the connection, with whatever social capital it contained, dissolves. Second, social capital concerns rate of return in the market production equation...through relations with colleagues, friends, and clients come the opportunities to transform financial and human capital into profit (9).” Lin (2001a) has also been an important voice in social networks as social capital, bringing the issue of resource embeddedness to the table.

Networks themselves are a form of social capital, and empirical research on this area is lacking in the literature. Most work done to date indicates network size as a proxy for social capital development. For example, larger networks have been shown to enable people to obtain higher paying jobs (Boxman *et al.*, 1991) and live longer (Berkman, 1979). Although Burt embraces the idea that *who* is involved in your network is important, his work focuses more on *how* the network is constructed. His findings indicate that the *who* and *how* questions are so strongly correlated that by yielding general explanations from *how* the network is connected allows him to “reconstruct much of the phenomenon” from the *who* component (Burt, 1992: 13). In other words, he assumes that “a player with a network optimized for structural holes can identify suitably endowed contacts” (Burt, 1992: 44)

These theorists can be categorized into two different ways of thinking about social capital. This includes two perspectives: social capital as “bonding capital”—meaning networks and relationships of trust *between individuals*—and social capital as “bridging capital”—meaning the networks and interrelationships *within communities* and external organizations, agencies, and resources. Coleman and Putnam have traditionally inclined closer to the school of “bonding capital,” focusing on the attributes of individuals within the network and the benefits of those attributes, coupled with connections. Bourdieu, Lin, and Burt focus more strongly on the concept of “bridging capital” – social capital is measured and evaluated by defining and analyzing the physical structure of the network. The attributes of the actors is secondary to the structure.

For this study, the working definition follows the foundation of Burt’s (and in part, Bourdieu’s) work and is defined in terms of “bridging capital,” that is, as the linkages among individuals, families, and community associations across sectors that facilitate an elevated nature of civil society.

Using a network-based approach to measuring social capital has its own set of criticisms. As social exchanges become less rewarding or important to members of a network, checks on accountability and reliability are likely to decrease (Monge & Contractor, 2003). Additionally, although collaborative governance models purport to flatten the leadership structure, Krackhardt (1994) points out the “Iron Law of Oligarchy” (which relates the tendency for groups to organize under the direction of few leaders), applies even within a networked structure. The threat of over-embeddedness (when an actor has so many linkages to other actors that has difficulties operating independently) and the “Law of N-Squared” (as network ties increase in number, they run the risk of overwhelming the ability of its members to actively participate in the network) are also potential drawbacks for collaborative public management designs (Krackhardt, 1994). Finally, many critics fear that network-based approaches are too narrow and that they could possibly leave out too many important dimensions of the relationships under study that could explain various social phenomena. If this were the case, then research on network-based approaches to social capital could become moot. However, as the Canadian report on building on a network-based approach to social capital explains:

...such concerns may be misplaced. While network-based approaches to social capital may be more modest and parsimonious than functional definitions, this may in fact greatly increase the potential explanatory power over the longer term. Rather than opening the door to an ever-expanding list of social resources that are purported to function as enablers of collective action, defining social capital in terms of social networks allows one to better define the concept, distinguishing it both from other forms of capital and from its purported effects. This in turn allows for more careful empirical testing of the theorized connections between the determinants of social capital, its outcomes, and social capital itself. Moreover, it does not force one to conclude that social capital is absent if its theorized effects are not perceptible (Matthews, 2003)

Measuring Social Capital

Most research on social capital ascribes to a micro-level approach, focusing on individual behaviors, such as voting behavior and membership affiliation (Huntoon, 2001; Putnam, 1995a;

Stone, 2001; White, 2002). A social capital construct, however, requires the ability to utilize these behaviors in a variety of multi-person interrelationships. If it is a stock measure, it is one best measured by evaluating relationships rather than skills individuals possess (Paxton, 1999). This allows a community-level assessment of social capital, as opposed to the micro-level, behavioral approach most commonly illustrated in social capital literature. Paxton (White, 2002) notes that much of the existing research on this topic has been an attempt to utilize behavioral characteristics of individuals in an attempt to illustrate the degree of stock in social capital within a community. More recent work has focused on social networks as a proxy to social capital, and whether social networks are an indicator of social capital (Stone, 2001: 1). When studying social capital at the community-level, it is necessary to develop a tool of measurement that accounts for the aggregate level of social capital that results from the way that people within the community interact. Measuring individual characteristics does not explain how the interactions between people increase social capital at the community level.

Network Theory

Granovetter (1973) proposed the idea that “weak ties”—measured by the amount of time, emotional intensity and intimacy, and the reciprocal services that characterize each tie—have a cohesive power in between-group interactions. Using network analysis, he illustrated how people were more likely to get a job when they utilized their connections through weak ties. He showed an increase in knowledge sharing when people moved beyond their intimate relationships and began interacting with acquaintances. When jobseekers tap into resources beyond their strong, immediate tie networks, they have better chances of hearing about opportunities. Putnam’s (1982) explanation of the increase in social capital gained through an increase in “horizontal ties” is similar to Granovetter’s (Ashman *et al.*, 1998; Berscheid & Walster, 1969; Hansen, 1999; Laumann, 1968; Newcomb, 1961) theory. Empirical evidence

suggests that the stronger the ties between individuals, the more similar they are (Forrest & Kearns, 2001: 2125). For this reason, groups with strong ties, such as families and close friends, have a more homogenous group, limited in the number of connections they can access outside of their group. Weak ties, on the other hand, are unique in their ability to have a greater diffusion of connections. This is because weak ties, for example between a group of acquaintances, provide a greater opportunity for the creation of bridges. Bridges are those connections between groups that allow a greater diffusion of linkages.

Claims such as those made by Forrest and Kearns and even Paxton suggest that the construction of social capital might not be best tackled through the initiation of connectedness through the development of strong ties. Particularly in this day and age, when information technology is creating “a new virtuality in social networks and a greater fluidity and superficiality in social contact...further eroding the residual bonds of spatial proximity and kinship” (1995a, 1995b), it is the weak ties that are posited as being crucial to developing greater stocks of social capital. Perhaps by fostering the establishment of bridges between community groups that create weak ties, we will see an influx of the stock of social capital throughout communities. Putnam (1998) might have been correct in his observations that this country is experiencing a collapse of the strong ties between individuals that are reminiscent of the strong ties of the early years. That, however, does not necessarily mean that the stock of social capital in the country is also declining. On the contrary, as communities can form many new weak ties, creating numerous bridges across interests, sectors, and associations, there lies a possibility that bridging social capital, and, with it, social cohesion will increase.

Structural Holes

Granovetter’s “strength of weak ties” theory was later expanded by the work of Ronald Burt (1992) in his book *Structural Holes: The Social Structure of Competition*. As Burt (1992)

states “Granovetter’s weak tie argument provides an illuminating aside on the information benefits of structural holes” (25). Structural holes are the relationship of nonredundancy between two contacts. The basic premise behind the structural hole theory is that the more redundant ties you have in a network, the less effective and efficient your network will be. For example, if you have four ties to four other actors in your network, and none of them are related to each other, then you are being the most efficient possible. However, if two of the actors you are connected to are related to each other, than your time and energy is less efficient because you are maintaining two relationships that individually give you the same benefits. If you were interested in becoming a competitive network, you would most likely want to remove the redundancy of this tie and instead direct your energy and time into a new, nonredundant relationship.

Structural Holes and Weak Ties

So, what is the connection between weak ties and structural holes? As Burt (1992) states “the weak tie argument is elegantly simple...why complicate the situation with a structural hole argument” (26-27)? The weak tie argument says that people who know each other well, will often have access to the same information. The spread of information and resources must therefore occur through weak ties. This is a critical element of social structure, made even more critical because it is so often ignored by social scientists. As we can see though, weak ties and structural holes seem to describe the same phenomenon.

The combination of using the weak ties and structural hole arguments to empirically measure the social capital of a community is strengthened by the ability of the structural hole argument to “capture the causal agent directly and thus provides a stronger foundation for theory and a clearer guide for empirical research” (Burt, 1992: 28). In addition the structural hole argument speaks to the control benefits of a network and the possibility of network changes

based on the findings. Identifying bridges that span chasms (weak ties) is important and if you add to that the identification of structural holes, you now have a stronger case for indicating where information should be spread (over a bridge that spans a structural hole). The weak tie argument predicts that nonredundant ties (the bridges that provide information benefits) are more likely weak than strong. What is important to note is that not all weak ties are bridges; however, all bridges are weak ties. In the structural hole argument, information is said to flow over all bridges, strong or weak. The structural hole argument takes Granovetter's argument one step further and encourages the maintenance of all bridge ties that cover structural holes. The inclusion of Burt's structural hole argument in this research not only strengthens Granovetter's theory, but contributes to the literature. McCarty (2002: 4) found that "while some researchers have written on the concept of structural holes (Krackhardt, 1987) or issues with its measurements (Borgatti, 1997), very few have actually collected personal network data and applied Burt's concepts and one, including Burt have done so outside of a business context".

Data and Method

The goal of this research is to explain the changes in the network structure that might occur in a community because of the collaboration with the AmeriCorps NCCC program. The method used was Social Network Analysis (SNA), a tool used to gather and analyze data that explains the degree to which people connect to one another and the structural makeup of collaborative relationships (Scott, 1991; Wasserman & Faust, 1994). SNA is a methodology that gathers data on who is connected to whom and how those connections vary and change under specified circumstances. The social environment is "expressed as patterns or regularities in relationships among interacting units" referred to as structure and the corresponding quantities that measure structure, that is, structural variables (Wasserman & Faust, 1994: 3). As White (White, 2002: 259) has observed, measuring a concept such as social capital is "inherently

problematic...in part due to the dependence upon qualitative notions such as trust and participation, the lack of standard measures or instruments and the wish to aggregate measure for statistical purposes” (White, 2002). For this reason, social networks are used, because of its commonality among all social capital theorists that it is a reliable measure of social capital (Scott, 1991).

Network theory suggests that the strength of ties within a network, as well as the number of various ties, serve as indicators for the level of social capital in that community (Granovetter, 1973). Additionally, Burt’s (1992) theory of structural holes as a proxy measure of social capital, is also examined as a means to support the strength of the weak ties argument. This research attempts to standardize one measure of social capital that emphasizes the structural component of the concept, rather than the conceptual component.

In addition to measures of weak ties and structural holes, other social network measures including density, transitivity, and centrality measures were analyzed. The density of a network was used to describe how connected (by number of connections) networks are before and after intervention. Transitivity measures the connectedness of transitive triples, hence giving us important information about the ability of information flow within the network. Centrality measures can indicate what the best positioning within a network is for a particular actor. According to researchers such as Borgatti (Prell, 2003), characteristics, such as the greatest number of ties to others, can indicate that this actor holds the most amount of social capital. Centrality measures are a relatively recent tool for measuring social capital within communities (Scott, 1991: 92).

Together, the measures of tie-strength, structural holes, density, transitivity, and centrality lend themselves in this research to the exploration of the effect on a community’s level of trust, social interaction, and resource exchange. Scott notes that these are “important

complimentary measures” because density describes the general level of cohesion in a graph, centralization describes the extent to which this cohesion is organized around particular focal points, and tie-strength describes the nature of the relationships (Smith & Lipsky, 1993).

Through survey research, focus groups, and in-depth structured interviews, four communities were studied in detail. Each of these communities was assessed in terms of their network structure prior to entering into collaborations with the AmeriCorps programs and then again after the intervention took place. Changes to the strength of ties, the addition or removal of network actors, and the positioning of such actors, allowed us to understand the contextual nature of these specific network governance examples. In addition, SNA is used here to measure the levels of social capital in local communities. In order to describe the impact of this type of collaboration (i.e. network governance), social capital is used as a dependent variable.

To document existing community networks (that is, the partnerships/collaborations between the nonprofit and their supporting community), staff from each nonprofit was asked to complete a survey. At the start of the survey, the respondents were asked to identify the partners they interacted with in regards to the work the NCCC team would complete. For example, in one community, the NCCC team supported after-school programs at a Boys and Girls club. The sponsor identified the partnerships/collaborations with other organizations that were a part of the after-school programs, constructing the initial “network boundary” (the set of organizations that are considered network members for the purpose of analysis). The partners identified by the nonprofit staff were asked to go through the same exercise later in the study.

The second half of the survey asked a series of fourteen “relational” questions about the network members identified in the first part of the survey. These responses provided information about the frequency, quality, and type of interactions within the community, and provided attribute data on trust and influence as perceived by the all the network members. In addition,

the actual structure of the network based on the number of connections, the pattern of connections, and the length of the path between members, provided measures of such elements as structural holes, weak ties, bridges, and key players. Survey administration was repeated six months following the intervention. Change related to the intervention was captured through questions that incorporated the phrase, “because of the intervention,” when asking about various elements.

The data derived from the interviews and surveys were analyzed using Social Network Analysis (SNA). A software tool, UCINET (Borgatti *et al.*, 2002) was used in the analysis and its embedded program tool, Netdraw, was used for visualizations.

Study Population

The AmeriCorps NCCC is a ten-month, full-time community service program for men and women ages 18-24. There are five NCCC campuses across the nation, each serving its own designated region. After a six-week training period, corpsmembers are dispersed throughout their region to work on projects jointly designed in advance by the NCCC and sponsoring communities. The NCCC places teams of 10-12 volunteers in communities beset by environmental, educational, public safety, and human needs problems. For six to eight weeks, the NCCC works with a national or local nonprofit organization, engaging in various defined community service activities. At the completion of their project, each team is required to complete a portfolio detailing accomplishments and service-learning aspects of the project.

Sponsoring communities are those that request that an NCCC team assist them in a community service project in one of the areas listed above. For the purpose of this research, the term sponsoring community was chosen because a nonprofit organization must be awarded a grant through the CNCS, which allows it to “sponsor” NCCC teams into their community.

These sponsors include nonprofits such as Habitat For Humanity, Communities In Schools, Power Up!, and others. The sponsoring community includes many different members, depending on the type of project, demographics of the community, and size/structure of the nonprofit (these community partners are identified by the interviewees). The collaboration often consists of nonprofits who sponsor (financially) NCCC teams by providing room and board and project work for the volunteers who have signed up to be NCCC “corpsmembers.”

The four sponsoring communities (and their missions) selected for this study were: The University of Montana, Division of Biological Sciences, which runs a “noxious weed removal program” in Missoula, MT; the Fremont County Youth Camp, which runs a camp for youth providing education about the importance of environmental protection and care out of Lander, WY; a Boys & Girls Club that provides a safe place for youth to come after-school to gain life skills in Cody, WY; and the Yellowstone Youth Conservation Corps, a program that selects aspiring high school students to work in the park during their summer breaks with mentorship and education from a Yellowstone employee in Yellowstone, WY. The Yellowstone was not used in the final analysis because they decided not to take an AmeriCorps NCCC team; therefore, no post-intervention results are available.

The Intervention

The intervention that is the subject of this study is the collaboration between the AmeriCorps NCCC and the sponsoring communities. This collaboration has many dimensions including funding, project support, direct work completed by volunteers, and requirements between the AmeriCorps NCCC program and the community members. Several requirements of the collaboration include providing housing, food, service learning opportunities, and community recognition for the AmeriCorps volunteers. Interviews conducted during the pilot test suggested that the most important dimension of the intervention is the time period prior to

the AmeriCorps NCCC team arriving in the community when most of the “planning” is happening to meet all the aforementioned requirements. This is when the sponsoring nonprofit must reach out to others within the community, hence the catalyst activities that affect the network structure.

Of concern is the limited time that the AmeriCorps NCCC team works in each community. A typical project lasts from 2-3 months. While this may not appear to be adequate time for substantial change to occur, it should be noted that the entire collaboration process typically lasts from one year to many years. Once the nonprofit decides to apply for a team, they must start their “networking” process – finding enough work, locating housing, food, service learning opportunities, and community appreciation functions. By the time the team arrives, a period of up to 8 months typically ensues where the community prepares for the team by tapping into and expanding its network. With this in mind, it should be noted that the intervention is not merely the time the team is working in the community, but the months prior and following the time the team is working.

Comparative Discussion of the Four Community’s Descriptions

The first task of data analysis was to evaluate the descriptive characteristics of each network structure, followed by the task of comparing changes in the network by topic (weak ties, structural holes). Specific details of the analysis are illustrated as appropriate but the majority of the following discussion focuses on aggregating all the analyses together for a holistic picture of the changes within each community.

The descriptive analysis of each community’s social network structure aids in understanding why different outcomes occurred as a result of the intervention and what unique feature of the network structure might aid/deter successful partnerships. The network visualizations (the Missoula network is shown as an example here in Figure 1) give us an idea of

the denseness of these networks, but social network analysis allows us to specifically aggregate different network relations.

Figure 1. Graph Displaying Missoula Network Pre-Intervention
 Note: Core Network Indicated as Subset to the Larger Network

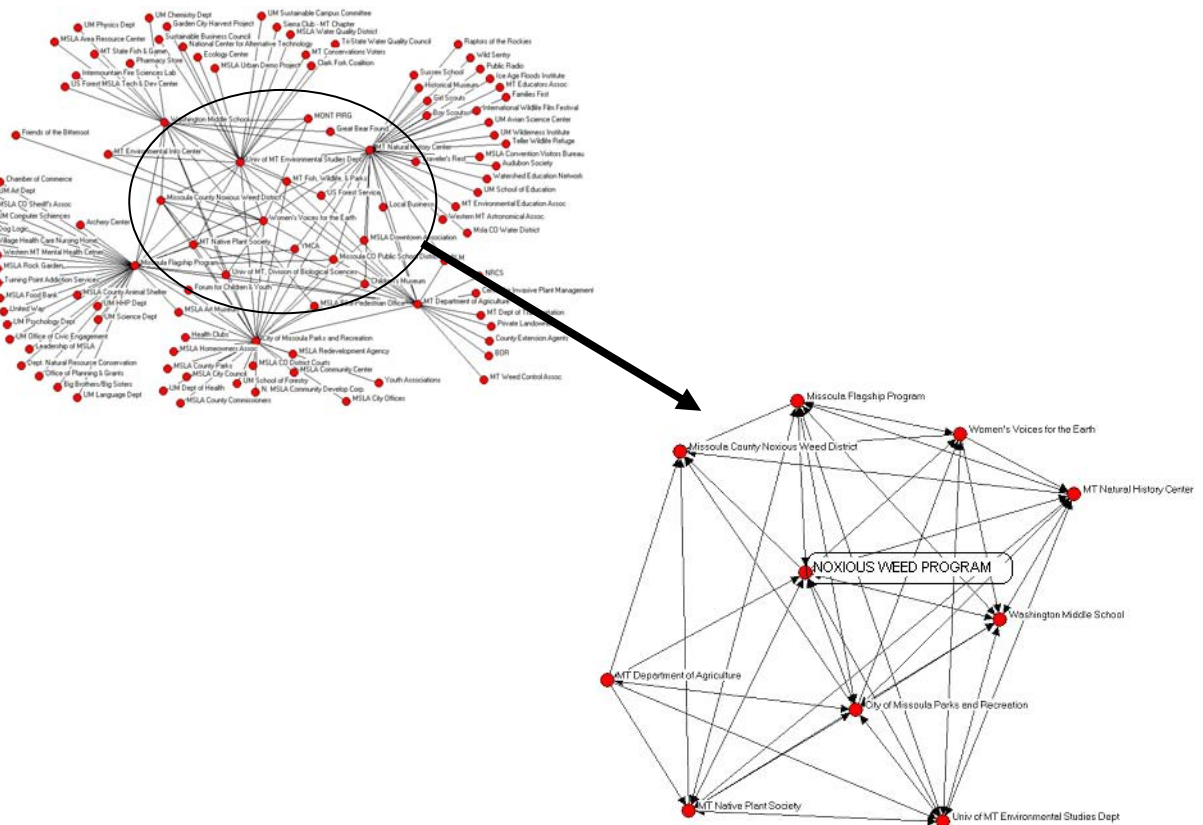


Table 1 provides a summary of the descriptive statistics of each community. Some general conclusions are evident from these numbers. The first is that as each community increases the size of its network connections, it is common for the transitivity and density scores to decrease. This is expected from much of the social network literature because as the number of potential connections increase, it becomes less likely that the network actors will foster ties with all of them (particularly in the short amount of time between the pre- and post-intervention - approximately two months) (Scott 1991). This is not a rule, however, as illustrated in the case of Missoula’s transitivity score, which increased after new members were identified into the

network. Changes to transitivity and density have the potential to affect the strength of ties and structural holes within a network, but there is no pattern for this behavior to either strengthen ties or increase structural holes. Whenever a network changes, all other network properties (such as the strength of ties) could be affected by the change, but the change is most likely contingent on the network itself.

Table 1. Summary of Changes in Density, Transitivity, and Number of Ties

	CODY PRE	CODY POST	CHANGE	MSLA PRE	MSLA POST	CHANGE	FREMONT PRE	FREMONT POST	CHANGE
NETWORK DENSITY (CORE)	52.73%	31.90%	↓	63.33%	56.41%	↓	21.43%	21.43%	NA
NETWORK TRANSITIVITY (CORE)	57.76%	62.53%	↑	73.38%	67.22%	↓	23.72%	23.73%	NA
NETWORK DENSITY (COMPLETE)	23.90%	20.50%	↓	1.52%	1.73%	NA	1.81%	1.78%	NA
NETWORK TRANSITIVITY (COMPLETE)	32.79%	32.36%	NA	25.47%	25.28%	NA	15.50%	15.27%	NA
# TIES (CORE NETWORK)	10	14	4%	9	12	3%	15	16	7%
# TOTAL TIES	83	86	3.6%	106	122	15%	85	86	1%

The second conclusion is one regarding the level of density and transitivity of each organization and the seeming likelihood that networks that have high levels of transitivity and density pre-intervention had greater change in their network structure post-intervention. The surveys indicate that the Fremont County network has a level of transitivity and density that are strikingly lower than Missoula, Cody, or Yellowstone (as reflected in Table 1). These numbers were derived from the responses of all members of the core network. The low scores of Fremont County illustrate its initial fragmented network. Further research would support the likelihood

that networks that start out with low transitivity and density scores are less likely to increase the organization’s (and subsequently, the community’s) social capital through network changes.

Finally, the centrality of each network actor tells us something about the positioning of certain organizations. The key observation here is the differences suggested between the centrality positions of each organization and the rankings of trust and influence of each organization. It appears that in Fremont County and Yellowstone, the government agencies are regarded highly in terms of influence and trust. In the other communities, the distribution of organization type is more balanced in terms of trust and influence. Table 2 provides an example of the centrality scores of one community (Cody) and the trust and influence scores that correspond.

Table 2. Degree Centrality, Trust, and Influence Cody Pre-Intervention

CODY PRE-INTERVENTION	DEGREE	CLOSE-NESS	BETWEENESS	TRUST 1=most trusted	INFLUENCE 1=most influential
WALMART	35.37	60.74	35.64	8	8
KEYS	34.15	58.57	28.55	9	11
LAW ENFORCEMENT	34.15	60.29	32.56	3	4
CRISIS INTERVENTION SERVICES	32.93	59.85	22.39	2	7
CEDAR MOUNTAIN CENTER	23.17	55.03	16.45	5	6
CHRIST EPISCOPAL CHURCH	21.95	56.16	10.84	6	2
BOYS & GIRLS CLUB	12.20	53.25	1.22	1	1
CYBERIS CAFÉ	12.20	47.67	9.77	10	10
BRIGHT FUTURES MENTORING	10.98	51.57	0.43	4	9
SENIOR CENTER	6.10	45.30	0.00	7	3
CODY ARCHERY CLUB	4.88	40.39	0.00	11	5

One interesting nuance that presented itself during the analysis was the very central position of Walmart in the Cody network. Walmart has the highest level of centrality in the entire network. However, on the scale of influence and trust, Walmart is ranked in the lower third of organizations within the network. This tells us that although an organization might be

identified as “popular” in terms of network connections, it does not necessarily give us viable information about the network.

Weak Ties and Structural Holes

The preceding sections have set the stage for the discussion on weak ties and structural holes, the central theoretical application of this thesis. Beginning with weak ties: as discussed previously, there are two ways to measure the strength of a tie (Wasserman & Faust, 1994). The most common measurement is based on frequency and intensity of contacts between a pair of actors (dyadic relationships). The second, less common, measure of weak ties, is based on the structural characteristics of a network where weak ties are identified as cut-points (bridges) between groups. Both measures were applied to these data to determine changes in the number of weak ties. The findings, it was posited, could determine whether a change in social capital has occurred post-intervention.

Weak Ties: Frequency and Intensity

To measure weak ties using frequency and intensity, a cumulative score was determined based on nine variables from the network survey, including committee memberships, sharing of facilities, two questions on financial exchanges, program interactions, sharing of clients, material exchanges, non-material exchanges, and frequency of contact, then combined to create one “strength” score for each dyadic tie. The average score of each dyadic relationship was compared to the average strength score for the entire network. Any number greater than the entire network average was considered a strong tie while any number below the average was considered a weak tie. The results of this analysis are summarized in Table 3.

Table 3. Number of Weak Ties: Frequency and Intensity

	CODY - PRE	CODY- POST	CHANGE	MSL - PRE	MSL- POST	CHANGE	Fremont- Pre	Fremont- Post	CHANGE
# OF WEAK TIES (FREQUENCY & INTENSITY)	5	8	60% (3-ties)	3	7	130% (4- ties)	10	10	0% (0 ties)

As the scores in the table indicate, based on the measures of frequency and intensity, both Cody and Missoula increased the number of *weak* ties within their networks post-intervention. Fremont County did not increase the number of weak ties, a result that was expected given that the network saw very little change, and no change that was attributed to the AmeriCorps intervention. Although the number of new weak ties is small for each community, the percent of change in both Cody and Missoula is impressive. Cody increased its number of weak ties by 60 percent and Missoula increased by 130 percent.

Weak Ties: Cut-points and Density

The second measure of weak ties counts the number of cut-points within a network. Cut-points are the “bridges” that connect subgroups to each other. When measuring weak ties in this way, it is common to include any node in the network that has a degree score of one because it is assumed that each node that has a degree of one is located at the end of a bridge – for example, in this thesis, many of the alters’ alters will have a degree of one because there is only one other organization that is connected to them. Each of these nodes, if asked to fill out the network survey, would most likely link the network to new connections. For this reason, nodes with a degree score of one are often included in this measure. Table 4 indicates the number of weak ties measure by cut-points, both with and without degree measurements.

Table 4. Number of Weak Ties: Cutpoints and Degree

	CODY - PRE	CODY- POST	CHANGE	MSL - PRE	MSL- POST	CHANGE	Fremont- Pre	Fremont- Post	CHANGE
# of CUTPOINTS (BRIDGES)	7	9	28.6% (2 ties)	7	9	28.6% (2 ties)	5	5	0.00% (0 ties)
# of CUTPOINTS & DEGREES (BRIDGES)	89	92	3.4% (3 ties)	61	72	18.0% (11 ties)	69	70	1.5% (1 tie)

The results show that again, the number of weak ties in Cody and Missoula have increased as a result of the AmeriCorps intervention when measured by observing cut-points and degree measures. Measured in this manner however, there is a *smaller* percentage of change for each community.

Structural Holes

The final indicator of an increase in social capital is a measure of structural holes. Structural holes are measured using the UCINET algorithm that produces a constraint score. Each community was evaluated in terms of its level of redundancy. A decrease in the level of constraint on a network indicates that more structural holes exist, which means that there is less redundancy in the network. The results are summarized in Table 5.

Table 5. Constraint Score as a Measure of Structural Holes

	CODY- PRE	CODY POST	CHANGE	MSLA PRE	MSLA POST	CHANGE	Fremont Pre	Fremont Post	CHANGE
STRUCTURAL HOLE (CONSTRAINT)	0.36	0.26	-0.1 (27%)	0.40	0.29	-0.11 (28%)	0.23	0.21	-0.02

The results show that the number of structural holes in both Cody and Missoula increased, as indicated by the lower constraint scores. Again, Fremont County showed little to no change. These lower scores indicate that the level of redundancy in each network decreased,

lending support to the proposition that there was an increase in social capital within the community.

The summation of these changes is illustrated in Table 6. In this table, it is clear that the greatest amount of change occurred in the Missoula and Cody networks. Missoula increased its number of weak ties by 130 percent and Cody by 60 percent, which indicate large proportions of change (however not a large absolute number of ties). This finding suggests that in Missoula and Cody, the network was expanded in terms of network connections, albeit those that are considered “weak,” which, according to Granovetter (1973) indicates that now these communities have increased availability to resources. Similarly, the number of bridges increased in these two communities, indicating that there are new connections to subgroups within the network. The implication of this finding is that in Missoula and Cody, entire groups of relations are now within their reach because they have fostered ties with at least one other actor in those subgroups. For example, by forming a new weak tie to the Missoula Food Bank, the Noxious Weed Program could potentially access those actors that are connected to the Missoula Food Bank. If network data gathering continued, we would begin to see which actors are now connected, by a bridge, to the Noxious Weed Program and vice versa through the Missoula Food Bank.

The finding of an increase in structural holes in Missoula and Cody further supports these implications. For each new bridge created, new structural holes were created between the nonprofits and the other actors in the subgroups. According to Burt (1992), this puts these nonprofits at an advantage in terms of possessing information benefits. At first, each of these bridges connects the nonprofit to at least one actor in the subgroups. In the future, the nonprofits will have to consider whether it is in their best interest to maintain less redundancy and only retain this one connection to the subgroup or whether they should begin to foster relationships

with others in the subgroups. By fostering new relationships with others in the subgroup, they are increasing redundancy and decreasing structural holes.

The density and transitivity of each community is also noted in Table 5. Density and transitivity indicate how “active” each of these networks is. We can see that Missoula has the highest density (63.33 percent) and transitivity (73.38 percent) scores pre-intervention. Cody also shows relatively high scores (52.73 and 57.76 percent) compared to Fremont’s lower scores (21.43 and 23.72 percent). These scores indicate that networks with higher density and transitivity scores pre-intervention best foster new ties which lead to an increase in weak ties, bridges, and structural holes. This suggests that part of the reason the change occurred in these communities was due to the ability of the network to do so. By that, we mean that those networks that actively engage their network partners pre-intervention might be more likely to engage partners during the intervention.

Table 6. Summation of Change

	Weak Ties	Bridges	Structural Holes	New Connections	Density - Core Pre-Intervention	Transitivity – Core Pre-Intervention
Missoula Network	130%	28.57%	28.0%	33.33%	63.33%	73.38%
Cody Network	60%	28.57%	27.0%	40.00%	52.73%	57.76%
Fremont Network	0.0%	0.0%	8.9%	6.67%	21.43%	23.72%
Interpretation	Social Capital Increases	Social Capital Increases	Social Capital Increases	Intervention Caused Synergy for Change	More Density = More Change	More Transitivity = More Change

Conclusions, Limitations, and Implications

What do these results mean for the levels of bridging social capital in the communities studied? As discussed in the literature review, an increase in the number of weak ties (Granovetter, 1973) and bridges, coupled with an increase in the number of structural holes (Burt, 1992) indicate an increased level of social capital within a network. These theories independently have been tested empirically for several years. Coupled together, their strength and accuracy increases (Burt, 1992).

Holistically, these analyses provide a broad picture of understanding of network changes as a result of the AmeriCorps intervention. The information obtained from these analyses indicates that those communities with high levels of transitivity and density pre-intervention are the most preferred communities in which to foster a synergistic state-society relationship that will result in bridging social capital development. In short, these cases indicate that bridging social capital has only been re-conformed, i.e., it cannot be created out of whole cloth.

Four conclusions are drawn from these data analyses. They are summarized in Table 6 and discussed in detail in the following section.

Table 6. Summation of Conclusions, Their Meaning, and Implications

	Finding	Meaning	Implication
Conclusion 1: Increased Social Capital	Missoula and Cody show increased levels of weak ties and structural holes.	Effectiveness and efficiency of these networks increased from the ANCCC intervention.	AmeriCorps NCCC can foster the development of weak ties and structural holes.
Conclusion 2: Diversity, Density/Transitivity Matter; Centrality Does Not	Those networks with diverse networks, coupled with high transitivity and density scores had more change.	Communities with higher transitivity and density scores may be more successful at state-society collaborations.	AmeriCorps NCCC can increase the diversity in groups that are highly active.

<p>Conclusion 3: Trust is a significant attribute</p>	<p>Trust correlates to the occurrence of strong ties.</p>	<p>Trust is significantly related to the development of strong ties.</p>	<p>AmeriCorps NCCC can act as an intermediary between trusted and less-trusted organizations.</p>
<p>Conclusion 4: State-Society Synergy Fosters Social Capital</p>	<p>A state-society synergy is created that can increase levels of social capital when certain conditions exist.</p>	<p>Certain conditions as described by Warner (2001) and Lemmel (2001) such as having partners as clients, not customers increase state-society synergy.</p>	<p>The AmeriCorps NCCC/nonprofit collaborations have the required conditions to create state-society synergy.</p>

The most important conclusion is that *bridging* social capital has increased in two communities. The “strength of weak ties” and “structural holes” theories state that an increase in weak ties and bridges and decrease in redundancy leads to higher levels of *bridging* social capital. In this way, networks *themselves* can be seen as a proxy or surrogate for bridging social capital (Burt 1992). Measuring social capital in this way suggests that bridging social capital increased in both of these communities as a result of the AmeriCorps NCCC/nonprofit collaboration.

In one specific example, Missoula formed weak ties with two Forest Service Ranger Districts and the local food bank. These weak ties have opened new possibilities for the Noxious Weed Program in terms of future work and sustainability of their missions. The finding of less constraint in this same network shows that less redundancy exists and that the Missoula network is running more efficiently and effectively than pre-intervention.

The conclusion is not drawn, however, that these changes in the network *could not* have happened without the intervention of the AmeriCorps NCCC program. The assumption that other changes to the network occurred during this same time period (and continuously) is made. Changes other than those that were a result of the AmeriCorps NCCC were not measured.

The cases described in this study show multisector networks with business, nonprofits, and government agencies as partners. A goal of the AmeriCorps program is to bring people within communities together and strengthen the ties that bind us together. In these cases, both Missoula and Cody increased their network size by creating new connections within the network. For example, the noxious weed community in Missoula would not likely have many reasons to partner with the Missoula Food Bank; however, the AmeriCorps intervention allowed this to happen. One of the most significant effects of the AmeriCorps NCCC partnership is that it encourages (and requires) that nonprofits reach out to those in their community that are not their obvious partners. Other examples of new ties that might not otherwise have occurred in these particular examples include newspaper agencies, colleges, other social service nonprofits, forest rangers, and food banks. The next step in empirically understanding the benefits of increasing diversity in a network analysis is to examine how organizations of varying types can benefit these nonprofits. For example, what exactly is the benefit to the new partnership between Cody Boys and Girls Club and Northwest College? Or even more problematic, what benefit exists for the Noxious Weed Program by fostering a tie with the Missoula Food Bank (aside from the obvious tie that the intervention caused)? Each of these new connections (perhaps with the exception of other social service nonprofits) increases the variety of resources available to the network, adding the benefits mentioned above. Diversity in networks increases the potential that these characteristics will exist. Burt (1992: 17) notes that “increasing network size without considering diversity can cripple a network in significant ways.”

Centrality did not play a pivotal role in the success of each community. In fact, in some cases (e.g. Walmart in the Cody Community), an actor identified as central in several ways (degree and betweenness) has little correlation with the trust and influence of that organization. This finding indicates that possessing a large number of connections does not affect the amount

of trust and influence an organization possesses. Some might question whether an increase in the number of ties in a community might naturally increase the number of weak ties and structural holes. We propose that degree centrality does not play a crucial role in social capital development, which lends itself to the conclusion that the number of ties an organization has does not necessarily imply an increased level of social capital. Further research would be appropriate to study this issue more definitively.

Next Steps

Perhaps the most important next step in the progression of this research is the clarification of the terminology and definitions regarding the concepts applied in this paper. The confusion between weak ties, bridges, and structural holes is evident and like the concept of social capital itself, cannot be applied in their full capacities until we can distinguish between the concepts and therefore, make conclusions that are applicable. Future studies need to distinguish between weak ties based on frequency and intensity and those based on structural characteristics (bridges). Further, weak and strong ties should be examined in terms of their bridging and inter-group connectivity abilities. Finally, consistent measurements of these concepts should be adopted to provide consistency in results. The benefits of weak ties and bridges are not the same (although they often compliment each other) and the distinction between their benefits is enormously important to conclusions about what makes a community healthier, stronger, or more successful.

Additionally, subsequent research could examine the question of whether increasing the number of weak ties in the social network *causes* a decrease in the amount of trust and influence one has in the network. For example, Walmart in Cody has fostered *many* network connections, but does not have a *trusted* position within the network. This leads one to question, if the increase of weak ties jeopardizes the amount of trust and influence that an organization can

possess in a social network. In other words, if we assume that trust is fostered by the amount of time and attention between two organizations, then we might question whether *decreasing* the frequency and intensity of a connection (in order to increase the number of weak ties) leads to less overall trust between that organization and its partners. For example, if Walmart is busy managing many weak ties, do they have really have the time to develop trust within the network?

Concluding Thoughts

Evans (Evans, 1996: 1119) asks, “Can state-society synergy be created in the short-run, or does it require historically deep institutional and normative foundations?” In other words, what role can an outside party—such as a government, state actor, or nonprofit organization—play in constructing social capital when it is not a permanent fixture of the existing interrelationships within a community? The findings of this research provide some guidance to what these roles might be, and suggest certain characteristics that the state and social organizations must possess to be most prepared for these types of partnerships. In Salamon’s (1984) view, nonprofit organizations represent an unusual opportunity to improve the relationship between government and voluntary institutions.

What is groundbreaking from this and similar studies is that *bridging* social capital (that type of social capital measured by weak ties, bridges, and structural holes) is a crucial element to our understanding of how society “ticks” and the concept of open networks should not be underestimated. Social capital in its holistic form has the ability to provide insight into the importance of its presence, or lack thereof, for the well-being of individuals and groups. “More broadly, social capital may represent a useful tool for complementing other policy approaches and instruments (such as investment in the creation of human and financial capital) that cannot address by themselves the complexities of the modern world” (Matthews, 2003: 14). As policymakers attempt to credit social capital as a successful policy outcome, it is important to

continue to perfect the operationalization of this concept. A conceptual focus on networks provides a means of ensuring consistent measurement across a variety of policy applications.

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