SYMBOLIC SOCIAL NETWORK TIES AND COOPERATIVE COLLECTIVE ACTION

by

Monica M. Whitham

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As members of the Dissertation Committee, we certify that we have read the dissertation prepared by Monica M. Whitham, titled “Symbolic Social Network Ties and Cooperative Collective Action” and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

Joseph Galaskiewicz

Linda D. Molm

Ronald Breiger

Final approval and acceptance of this dissertation is contingent upon the candidate’s submission of the final copies of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

Dissertation Director: Linda D. Molm

Dissertation Director: Joseph Galaskiewicz
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SIGNED: Monica M. Whitham
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DEDICATION

For my mom.
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ABSTRACT

A wealth of research on social life has examined the causes and consequences of social identity. I build on this literature by expanding the study of the concept beyond its current focus on how social identity manifests in the individual to a collective-level understanding of social identity as it manifests in groups. This is achieved by bridging the study of social identity with the study of social networks. In this dissertation, I argue that sharing a social identity that meets certain criteria serves as a type of connection which binds group members together into a collective unit. I refer to these connections as symbolic social network ties.

Symbolic social network ties exist in social entities characterized by entitativity, which is the property of a social group that defines it as a coherent social unit—a social object in and of itself. Three criteria are necessary for a set of individuals to possess entitativity: boundedness, membership-based interaction, and the capacity to act and be acted upon as a manifest corporate actor in relation to other (individual and corporate) actors. Entitativity varies by degree across entities due to differences in the extent to which the entity exceeds minimal levels of the criteria defining entitativity.

The effects of symbolic social network ties are a consequence of the combined effects of entitativity and social identity. To provide an initial assessment of the effects of symbolic social network ties on social life, in this dissertation I use a two-study approach to examine their impact on cooperative collective action. In Study 1, I use the experimental method to test the effects of symbolic social network ties, and social identity more broadly, on cooperation in generalized exchange. Generalized exchange is a form of collective action that is risky but has a number of benefits for collectivities and
their members. I compare effects across three levels of social identity: no social identity, category-based social identity, and entity-based symbolic social network ties. Results strongly support my theoretical argument; entity-based symbolic social network ties have a stronger impact on cooperation than category-based social identity. Indeed, the level of cooperation in the category-based social identity condition is not significantly different from the level of cooperation found in the no social identity control condition. The second study uses survey data to assess whether the causal findings from Study 1 hold in the context of real world entities. In Study 2, I examine the relationship between symbolic social network ties and community involvement in small towns. Community involvement is a contextually specific form of collective action that can be vital to the success of a community. Specifically, I examine how variations in each of the three criteria of entitativity—boundedness, interaction, and corporate actor capacity—relate to residents’ propensity to participate in two forms of community involvement: voluntary participation in community improvement activities and active membership in local organizations. As predicted, I find that boundedness and interaction are positively related to both forms of community involvement; corporate actor capacity, however, was not found to be significantly related to either form of community involvement. Implications of these results and potential directions for future research are discussed.
CHAPTER 1
INTRODUCTION

Much of social life is organized around memberships in social groups. The family with whom we live, the organization for which we work, and the community in which we reside are just a few examples of the many groups that shape our social lives. Social identity theory provides a conceptual framework for studying the relationship between the group and the individual. Social identity theory is the study of the aspect of the social self which is derived from membership in categories and groups (Tajfel 1981). This is distinct from the study of personal identity, which focuses on the idiosyncratic characteristics of an individual, such as one’s dispositions, one’s personal narrative, and the internalized meanings and behaviors an individual attaches to a particular role (Burke 1980; McCall and Simmons 1966; Stets 2006; Stryker 1980).

Social identity theory has greatly contributed to our understanding of the effects of group memberships on individuals, groups, and society. By addressing the interconnection between group membership and the self, social identity theory helps to illuminate group-related processes and outcomes. The theory has been widely applied to intergroup relations (e.g., competition), intragroup consequences (e.g., norm enforcement), and intraindividual processes (e.g., self-categorization). (See Hogg 2006 for a summary of social identity theory applications in the social sciences.)

While the study of social identity has been tremendously valuable for understanding social life, its current conceptualization leaves room for expansion. Formulated within the tradition of psychological social psychology, the concept of social identity was developed for the study of the impact of group membership on individual-level attitudes and behaviors. In spite of numerous applications in fields outside of
psychological social psychology, including sociology and other social sciences, the concept has retained its focus on the individual.

My primary goal in this dissertation is the development of a sociological extension of social identity theory that accounts for social identity as it exists beyond the individual as a collective-level phenomenon. I argue that social identity manifests in two ways. The first is an internal manifestation of social identity as it inheres in the individual as an aspect of the self. This is how social identity has traditionally been conceived. The second manifestation is external to the individual. Social identity involves an extension of the self beyond the individual, where the I becomes the we (Brewer 1991; Turner et al. 1987). This extension beyond the individual is an external manifestation of social identity that serves as a unifying force—a network tie—binding group members together into a collective “we” or “us.” These ties form a symbolic social network, defined as a set of ties between members of a social entity (i.e., a bounded, interactive group with the capacity to act as a corporate actor) based on their shared social identity.

To conceptualize social identity as a network tie, I draw on the social networks tradition of sociology and the social exchange and structural social psychological approaches of sociological social psychology. I propose that we can conceive of a group as being overlaid by a network structure that is composed of social identity connections. These connections are symbolic in the sense that they are determined by group affiliation rather than behavior (i.e., interaction). Because they are affiliation-based, they connect all members of the group in a complete network.
Conceptualizing symbolic social network ties as collective-level social identity requires an explicit definition of what qualifies as a collective. Social identity theory is the study of the connection between the individual and the group; studies of social identity, however, typically draw no distinction between types of social groupings (Brown et al. 1992; Deaux et al. 1995; Lickel et al. 2000). In particular, they do not distinguish between social categories, in which individuals are bound together by affiliation with shared characteristics (e.g., female, Blonde, working class, Protestant) and dynamic groups, in which individuals are bound together by patterns of interdependence (e.g., a basketball team, a church congregation, the Supreme Court, a fraternity) (Lewin 1948; Lickel et al. 2000; Wilder and Simon 1998). I argue that symbolic social network ties exist in social entities, a specific type of social group. A social entity is a collection of individuals meeting the criteria of entitativity. Entitativity is the property of a collection of people that defines it as a coherent social unit—a social object in and of itself (Campbell 1958). I identify three criteria as necessary for a set of individuals to possess entitativity: boundedness (Abbott 1995; Campbell 1958), membership-based interaction, and the capacity to act as a unified corporate actor in relation to other (individual or corporate) actors (Abbott 1995; Emerson 1972). Examples of groups meeting these criteria include communities, sports teams, corporations, task groups, fraternities, and universities. Entitativity varies by degree across entities due to differences in the extent to which the entity exceeds minimal levels of the criteria defining entitativity. Boundaries vary by clarity, changeability, permeability, and duration. Membership-based interaction varies by the frequency of interaction, the intensity of the interaction, and the proportion of members who interact. Corporate actor
capacity varies by divisiveness among entity members (i.e., factional politics) and the effectiveness of leadership.

Because symbolic social network ties combine social identity with entitativity, they should have a powerful impact on social life. After developing the concept of symbolic social network ties, I test the effects of these ties by examining their impact on cooperative collective action. Collective action involves two or more individuals working together to achieve mutual interests (Marwell and Oliver 1993; Olson 1965). Cooperative collective action is essential for social life, but it can be difficult to motivate individuals to participate in a group effort. I develop and test two predictions. First, I predict that symbolic social network ties will have a greater impact on cooperative collective action than category-based social identity. Second, I predict that greater entitativity in an entity on each of the three dimensions—boundedness, interaction, and corporate actor capacity—will be associated with greater cooperative collective action.

I test these predictions with a two-method, two-study approach. The first study uses the experimental method to test, in a controlled laboratory setting, my theoretical argument that symbolic social network ties will produce stronger cooperation in collective action than will either category-based social identity or no social identity. In Study 1, I test the causal impact of symbolic social network ties on cooperation in generalized exchange. Generalized exchange is the practice of giving to another who will not directly repay the benefits, with either the expectation of being repaid by someone else in the future or the recollection of having been rewarded by someone else in the past (i.e., “paying it forward,” such as giving a stranger directions or donating blood). Because rewards are indirectly repaid by a third actor rather than directly repaid by the
recipient, generalized exchange is inherently collective. Generalized exchange has important benefits for collectivities, such as enhanced social capital (Adler and Kwon 2002) and greater solidarity (Molm, Collett, and Schaefer 2007), but the risk of nonreciprocity makes it difficult to establish cooperation in generalized exchange (Lawler, Thye, and Yoon 2008; Molm, Collett, and Schaefer 2007). I argue that symbolic social network ties provide a solution to this problem. As predicted, I find that symbolic social network ties motivate greater cooperation in generalized exchange in spite of the risks involved. Further, results strongly support my theoretical argument; entity-based symbolic social network ties have a stronger impact on cooperation in generalized exchange than does category-based social identity.

In Study 2, I test whether the positive causal impact of symbolic social network ties on cooperative collective action found in Study 1 holds in the context of real world entities. The second study uses survey data to assess the relationship between entitativity and community involvement in small towns. Community involvement is a contextually specific form of collective action that can be vital to the success of a community. I examine the relationship between the degree of entitativity in a community—as indicated by variations in each of the three criteria of entitativity: boundedness, interaction, and corporate actor capacity—and its residents’ propensity to be involved in two forms of community activities: voluntary participation in community improvement activities and active membership in local organizations. As predicted, I find that boundedness and interaction are positively related to both forms of community involvement; corporate actor capacity, however, was not found to be significantly related to either form of community involvement. These results support the conclusion that symbolic social
network ties have a positive impact on community involvement, and this impact varies by the degree of entitativity that characterizes the community.

**Overview of Chapters**

I develop the concept of symbolic social network ties and my theoretical argument in Chapter 2. Studies 1 and 2 are presented in Chapters 3 and 4, respectively. In Chapter 5, I summarize my dissertation project; discuss the contributions of the project, its broader impacts, and its limitations; suggest future research directions; and leave the reader with several parting cautions regarding the possible negative effects of symbolic social network ties.
CHAPTER 2
SYMBOLIC SOCIAL NETWORK TIES

A wealth of research on social life has attended to the causes and consequences of social identity. The study of social identity has addressed the relationship between the group and the individual through the study of such matters as categorization processes (e.g., Turner 1985; Turner et al. 1987), social identity-driven motivations (e.g., Simpson 2006; Tajfel 1970; Yamigishi and Mifune 2008), and the construction and maintenance of social identities (e.g., Prentice, Miller, and Lightdale 1994; Spears, Doosje, and Ellemers 1999). The concept has helped to make sense of social phenomena as diverse as stereotypes, deviance, fashion, and groupthink.

The concept was originally formulated by Henri Tajfel\(^1\) (1969; Tajfel et al. 1971), a psychological social psychologist, in an effort to connect the social cognition and behavior of individual actors with collective processes and outcomes (Hogg 2006; Hogg and Ridgeway 2003). Though the concept of social identity has since been widely applied in a variety of academic fields (e.g., sociology, psychology, communication studies), the study of social identity has maintained this focus on the individual; reflecting its psychological roots, social identity has been conceptualized as a property that—though based on attributes an individual shares with others—inheres in the individual, having individual-level impacts on cognitive processes, behaviors, and attitudes.

To move beyond the current focus on how social identity internally manifests in the individual, I propose a sociological expansion to social identity theory that offers a

\(^1\) Erving Goffman also discussed the term “social identity” around the same time as Tajfel (Goffman 1963, 1971). While Goffman’s definition was similar, it was conceptually distinct from Tajfel’s. Goffman referred to social identity as broad social categories an individual belongs to and can be seen as belonging to, such as sex or class. Goffman’s meaning was the external designation of one’s category by another individual, while Tajfel’s was the internal adoption of one’s category as part of the self-concept.
collective-level understanding of social identity as it externally manifests in groups. This is achieved by bridging the study of social identity with the study of social networks in two sociological traditions: the social networks tradition of sociology and the social exchange tradition of sociological social psychology. The study of social identity has depicted social identity as an aspect of the social self; I propose that conceptualizing social identity as a particular type of network tie provides a collective-level account of social identity as an aspect of the social group. Social identity is the internalization of the group (e.g., Smith and Henry 1996; Turner 1982), serving as a powerful “connection” linking the individual to the group and the group to the individual by transforming the I into the we (Brewer 1991; Turner et al. 1987). I extend this line of thought to argue that social identity also serves as a powerful connection to the other individuals mutually comprising the group. Not unlike network ties based on friendship, rivalry, or business partnerships, I argue that sharing a social identity is a form of network tie which binds group members together into a collective unit. I refer to these ties as symbolic social network ties.

Symbolic social network ties are conceived in the spirit of Anderson’s (1991) imagined communities. He argues that nations are constructed in the minds of citizens through an awareness of their perceived affiliation. This perceived communion unites a nation’s citizens in a limited and sovereign political community, with a comradeship that equalizes citizens as a populace forming a coherent collective. In a similar vein, symbolic social network ties are also the product of shared affiliation; the shared social identity attendant with shared affiliation binds group members together into a coherent collective—a web of symbolic ties.
I present my argument in detail below. I start by briefly reviewing work on social identity and social networks. Next, I bring these schools of thought together to conceptualize symbolic social network ties as a particular type of network tie stemming from shared social identity. To this aim, I draw on ideas from social exchange theory, structural social psychology, and cultural meaning structures. I then discuss the effects of symbolic social network ties that may enhance cooperative collective action. Finally, I provide a preview of the empirical applications of symbolic social network ties that are presented in the next two chapters of this dissertation.

**Background**

**Social Identity**

The self is composed of many parts, including both personal and social identities. Personal identity includes the idiosyncratic characteristics of an individual, such as one’s dispositions, one’s personal narrative, and the internalized meanings and behaviors an individual attaches to a particular role (Burke 1980; McCall and Simmons 1966; Stets 2006; Stryker 1980). Social identity, on the other hand, is defined by shared affiliations and shared attributes. It is the part of the self-concept derived from membership in categories and groups, consisting of two necessary components: an awareness of one’s membership in the group coupled with an emotional and value significance regarding the group (Tajfel 1981).

The concept provides a framework for understanding intragroup processes and intergroup relations by addressing the nature and consequences of the relationship between the individual and the group. The basic idea behind the approach is that behavior is strongly affected by the alignment of people in social groups and categories.
Henri Tajfel (1969; Tajfel et al. 1971) developed the concept in an effort to understand intergroup relations. Motivated by a desire to make sense of World War II and the Holocaust, Tajfel was interested in explaining tensions between groups—particularly prejudice and discrimination. Initial work on social identity focused on intergroup competition for status and prestige and the consequent motivation for ingroup cooperation (Tajfel et al. 1971; Tajfel and Turner 1979). Tajfel and colleagues’ (Tajfel et al. 1971) first set of experiments examined these processes in “minimal groups” created in the lab: experimental subjects were assigned to groups either according to trivial commonalities (e.g., similarity in aesthetic preferences) or random assignment (e.g. a coin toss) and their “groups” involved no face-to-face interaction and complete anonymity. In spite of these minimal group characteristics, subjects exhibited substantial ingroup favoritism. These early studies demonstrated the impressive power of social identity to prompt individuals toward action in support of the ingroup and in opposition to the outgroup.

A wealth of research and theorizing has built upon these early social identity studies. In the four decades since Tajfel introduced the concept, the study of social identity and its associated processes has contributed to the understanding of a broad range of behaviors and outcomes, such as social influence, prejudice, cooperation, norm commitment, ethnocentrism, cultural tastes, and conformity (see Hogg 2006 for a thorough discussion of the history, forms, mechanisms, and applications of the concept). Work applying social identity theory can be organized around three main themes:2 1)
intergroup processes, such as competition (e.g., Turner, Brown, and Tajfel 1979), stereotyping (Hogg 2000), and helping the outgroup in times of need (e.g., van Leeuwen and Tauber 2012); 2) intragroup processes, such as further evidence of enhanced ingroup cooperation in support of the findings of the original “minimal group” studies (e.g., Anthony 2005; Lawler and Yoon 1996), motivations for ingroup cooperation (e.g., Simpson 2006; Yamagishi and Mifune 2008), and the construction and internalization of group norms (e.g., Abrams and Hogg 1990); and 3) intra-individual processes, including the construction, maintenance, modification, and enactment of social identities (Prentice, Miller, and Lightdale 1994; Spears, Doosje, and Ellemers 1999; Turner et al. 1987).

In spite of its wide theoretical application, social identity has not yet been conceptualized as a group-level phenomenon. Reflecting its beginnings in the field of psychology, the focus of social identity theory has been to understand the impact of social categories and groups on the internal self-concept of the individual. Although social identity is based on recognized similarities between self and others (i.e., shared group and category memberships), it has customarily been conceptualized as an internally experienced property of individuals having primarily individual-level effects. Tajfel was motivated to understand the group as it exists within the individual, how “social forces configured individual action” (Hogg 2006, p.112). The subsequent development of the concept has maintained this focus by studying the impact of group and category memberships on individual psychological processes (e.g., self-categorization, motivations), attitudes (e.g., stereotyping, ethnocentrism) and behaviors (e.g., outgroup derogation, ingroup favoritism).
Building on the substantial foundation of social identity theory, I offer an explicitly sociological, collective-level conceptualization of social identity that moves beyond this focus on the individual. Social identity theorists have thoroughly articulated social identity as an individual-level aspect of the social self; I propose that social identity can also be conceived of as a group-level phenomenon existing beyond the individuals comprising the group. The crux of the argument is that in addition to its internal manifestation as an aspect of the self-concept, social identity also manifests externally to the individual to serve as a connecting force—a form of network tie—that binds together group members. Conceptualizing social identity as a network tie allows a collective-level understanding of social identity as a social structure existing both outside of and beyond individual group members: a web of network ties. To understand how social identity manifests as a web of network ties I turn to social network theory, which provides theoretical tools to translate social identity into a network structure.

Social Networks

Networks are patterns of social relationships among interacting social units. These patterns consist of ties between individual actors (i.e., persons) and corporate actors (i.e., collective actors, such as companies, social clubs, or teams). Ties between units serve as avenues for social exchange, conduits through which social actors may trade benefits and costs such as influence, information, goods, services, competition, or companionship (Emerson 1972).

The study of social networks is the study of social relationships. Network ties may correspond to any type of social relation that connects social actors, e.g., friends, business partners, neighbors, rivals, or relatives. Adopting the framework of network
theory to conceptualize collective-level social identity allows us to take a relational approach to the study of social identity. Relational sociology accounts for social reality in dynamic, continuous, and processual terms (Emirbayer 1997, p.281); the approach involves a fundamental switch from viewing the world as a set of discrete actors with individual characteristics to viewing the world as composed of actors with particular relations among them. The concept of symbolic social networks presented below integrates social identity theory into the framework of social network theory by arguing that a shared social identity constitutes a particular type of relational tie or affiliation. This approach involves a shift from thinking of social identity as only an aspect of the individual to also imagining social identity as a connecting force which binds actors together, reorienting the study of social identity from a focus on how the social group shapes the behavior of the individual to a focus on how social identity is relationally enacted as network ties.

**Linking Social Identity and Social Networks: Symbolic Social Network Ties**

*Symbolic social network ties* are defined as connections between members of a social entity based on their shared social identity. Social identification exists at the intersection of *I* and *we*. Social identity has traditionally been conceptualized as a property that is based on shared attributes but inheres in the individual—an internal manifestation of a shared social affiliation. While this notion of social identity is important for understanding social life, it only tells half of the story. Social identity also involves an extension of the self beyond the individual, where the *I* becomes the *we* (Brewer 1991; Turner et al. 1987). The concept of symbolic social networks is an explicit conceptualization of this external manifestation of social identity as a unifying
force—a network tie—binding group members together into a collective “we” or “us.” These ties form a symbolic social network. The notion of symbolic social networks takes into account the dual nature of how social identity is experienced, with both an individual, internal, and private dimension reflecting the personal experience of social identity and a collective, external, and public dimension reflecting the social experience of social identity.

The Group-Network Connection

The concept of symbolic social network ties bridges the concepts of groups and networks by envisioning the group as a set of network ties. To this aim, I take a social exchange theory approach to defining both concepts. A group is a set of actors with a sense of collective identity that can act as a corporate actor (Emerson 1972). Note that the corporate actor component of this definition distinguishes it from the more cognitive approach used by social identity theorists, who typically define a group as three or more actors who acknowledge membership in a collective and evaluate themselves as sharing attributes collectively differentiating “us” from “them” (Hogg 2006). Social exchange theorists define a network as an “opportunity structure” consisting of a set of three or more actors linked by the ability to provide transaction opportunities (Emerson 1972). Note that this differs slightly from the way network theorists typically define a network; rather than defining a network according to performed interactions as network theorists do, social exchange theorists define a network as a structure providing a context for possible interactions. The social exchange definition of network used here accommodates the definition typically used by network theorists—i.e., behavioral ties.
performed through interaction—while also allowing for ties where interaction is structurally possible but as yet has not been performed.

To bridge these two concepts, I adopt the structural social psychology approach of Lawler, Ridgeway, and Markovsky (1993). From their point of view, the structure of a group is a network. Building on this view, I propose that we can conceive of a group as being overlaid by a network structure composed of social identity connections. Groups are sets of actors with many types of social relations among them, e.g., friends, rivals, co-workers. My argument is simple: one of these types of ties is a shared social identity, and it connects everyone in the group. Just as liking one another creates a friendship tie, competing with one another produces a rivalry tie, or working together on the same project creates a co-worker tie, sharing a social identity with a fellow group member creates a particular type of tie: a symbolic social network tie.

This approach provides an interesting extension of Feld’s (1981; Feld and Grofman 2009) work on the focused organization of ties, as well as several related arguments by other theorists (e.g., Ansell 1997). Feld and colleagues (Feld 1981; Feld and Grofman 2009) argue that network ties tend to be organized around shared foci of activity, which bring actors together and facilitate interaction, such as worshipping in the same church, living in the same community, or attending the same football game. Others have proposed related arguments. Ansell (1997) suggests networks may be focused around mutual adoption of a symbol, such as the general strike uniting French labor unions in the 1890s. Networks may also be focused around a shared cultural

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3 Although groups are structured by network ties, network ties do not necessarily form a group. For example, I have a network tie to my tailor, but our relationship is not part of a group. 4 Ties may also result from non-focused origins, such as chance meetings or “adjacency along some continuum” (Feld 1981: 1018).
structure (Erickson 1996; Lizardo 2006; Pachucki and Breiger 2010), which serves to
“organize social interaction around commonly shared knowledge or interests” (Lizardo
2006, p.785). By providing a center of attraction, a shared focus—whether it be an
activity, a cultural structure, or a symbol—coordinates action, fostering opportunities for
interaction and the development of behavioral social network connections.

Feld’s work on the focused organization of ties explicitly addresses the
relationship between groups and networks—a relationship that is often neglected by
network theorists. Groups are also constructed around shared foci—typically a
combination of each of the foci noted above—from a church congregation organized
around attending the same services and adhering to the same belief system to a book club
organized around reading and subsequently discussing the same literature. Groups
provide interaction opportunities among members, which may (or may not) translate into
the formation of behavioral network ties. Feld and colleagues do not suggest that group
membership itself comprises a set of network ties. Rather, a group is merely a set of
actors more likely to have interactive ties among them than a set of actors who are not
organized around a focus (Feld 1981; Feld and Grofman 2009).

Taking Feld’s work one step further, I argue that group membership does
comprise a set of network ties. Conceived within the framework of structural social
psychology and social exchange theory, the concept of symbolic social network ties
allows us to envision the group as overlaid by a set of ties based on shared social identity.
These ties are symbolic social network ties.
Symbolic Ties

Symbolic social network ties are symbolic in that they are determined by affiliation rather than behavior. Network ties are traditionally conceptualized as behaviorally determined—network theorists define ties as the product of interactive relationships and social exchange theorists define them as the product of a structure that enables interactive relationships. The structure of a symbolic social network, on the other hand, is determined by shared affiliation with a group. Group affiliation also accommodates behavioral ties, but these are distinct from the symbolic, affiliation-based ties which connect all group members to one another.

Figure 1 presents a visual representation of this idea. Imagine Amy, Tom, Dan, Tre, Kay, and Jan are members of a group. The thick black lines represent friendship ties connecting Amy and Jan, Amy and Dan, Tre and Dan, Tre and Kay, and Jan and Kay. The dashed lines represent social identity-based symbolic ties, which bind together all members of the group—even those who are not connected by a behavioral tie—in a symbolic social network.

The (Symbolic) Structure-Culture Connection

Networks are “interwoven with meaning” (Fuhse 2009, p.51): expectations, symbols, stories, identities, schemata, cognitive frames, and cultural practices—all of which form the cultural meaning structure of the network (Fuhse 2009; Mohr 1998). Though often overlooked in network research in favor of more structural explanations, attending to the cultural meaning structure of a network avoids a (behavioral) structuralist reduction of network ties and allows a better understanding of the relational patterns and processes that exist within it (Fuhse 2009; Mohr 1998; Pachucki and Breiger 2010).
The cultural meaning structure of a symbolic social network includes the shared expectations, experiences, and symbols that are attendant with mutual group membership. This shared cultural meaning structure is a vital part of the connecting force creating the symbolic structure of the network. Social identity promotes the construction and internalization of norms within the group (e.g., Abrams and Hogg 1990); put another way, social identity enhances the process of constructing and internalizing the culture of the group. Sharing this non-unique part of the self creates a connection between group members—having internalized the culture of the group as part of their identity coupled with the recognition that fellow entity members shape and share this social identity, group members are tied to one another by their shared cultural meaning structure.

A Complete Network

In social network theory terms a symbolic social network is a complete network, meaning all members are connected to one another. This is depicted in Figure 1 by the dashed lines representing the symbolic social network ties—these ties exist between each pair of group members, even those not connected by a friendship tie. While some

Figure 2.1. An Illustration of Symbolic Social Network Ties.
individuals in the entity are tied by a behavioral relationship (e.g., Jan and Kay), others are not (e.g., Tom and Kay). Because they are affiliative ties rather than behavioral ties, symbolic social network ties are able to go beyond traditional network ties to connect all members of a social entity. Symbolic social network ties thus supplement the behavioral direct and indirect (e.g., friend of a friend) ties that exist in a social entity, filling in absent ties between actors and creating a complete symbolic network in which all actors are connected by their shared affiliation and its attendant social identity.

Because everyone in the group is connected, a symbolic social network has different properties than a behaviorally-defined social network. Although there may be subsets within the group based on various types of behavioral ties, such as friends, coworkers, and kinship (consider, for example, the friendship ties in Figure 1), a symbolic social network connects all members of the group. Thus symbolic social networks do not vary according to typical network measures; there is 100% density in the network and all actors are structurally equivalent—so there are no clusters or structural holes, no actors are more central, and transitivity does not apply. Symbolic social networks, however, do vary from group to group. They vary according to the degree of entitativity defining the group.

**Entitativity**

Developing a concept of social identity at the collective-level requires an explicit distinction between which social groupings qualify as an appropriate collective and which do not. For symbolic social network ties, the key to drawing this distinction is entitativity. Alternatively referred to as “thingness” (Abbott 1995), entitativity is the property of a collection of individuals that defines it as a social unit having a coherent
social reality—a social unit in and of itself (Campbell 1958). The simple idea behind the concept is that some social groupings (e.g., a basketball team, a family) are more coherent social units than others (e.g., Catholics, Yankee fans), and this coherence has consequences.

There are three types of social groupings: aggregates, categories, and entities. An aggregate is a set of people who happen to be in the same place at the same time, such as people in line at the bank or the audience at a movie. A social category consists of a set of individuals who are bound together by affiliation with shared characteristics (e.g., female, Blonde, working class, Protestant) (Lewin 1948; Lickel et al. 2000; Wilder and Simon 1998). A social entity is a social unit characterized by the criteria of entitativity (see Abbott 1995; Campbell 1958; Hamilton and Sherman 1996; Hogg 2006; Lickel et al. 2000), defined here as a set of individuals who are bound together by shared boundaries, patterns of interaction, and the ability to act as a corporate actor (e.g., a basketball team, a church congregation, The Supreme Court, a fraternity).

While some might refer to social entities as groups, I use the term entity for two reasons. First, entities are defined by the criteria of entitativity, which are discussed in detail below. Second, studies of social identity typically draw no distinction between types of social groupings (Brown et al. 1992; Deaux et al. 1995; Lickel et al. 2000), including the distinction between categories and groups: “When we talk of groups we are talking about categories of people, social categories” (Hogg 2006: 118). Social identity

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5 A few social identity researchers have proposed typologies of groups (see Brown et al. 1992; Deaux et al. 1995; Hinkle and Brown 1990), but these typically fail to draw a distinction between entities and categories. One exception is Lickel et al. (2000), who use perceived entitativity to classify four types of collectivities: intimacy groups based around family and friends, such as small friendship groups or a couple in a romantic relationship; task-oriented groups such as committees or coworkers; social categories such as women, Jews, and Americans; and loose associations, which include temporary and waiting groups (e.g.,
theorists typically define a group as a collection of individuals who share the same social identity (Turner 1982). This is a broad definition which includes entities as well as many social categories, such as gender and race. Indeed, Tajfel’s conception of social identity tends to emphasize social identities based on category memberships, such as race, gender, or so-called “minimal groups” (i.e., lab created groups consisting of individuals sharing trivial commonalities which involve no face-to-face interaction and complete anonymity) (e.g., Tajfel et al. 1971; Rabbie et al. 1989), and often tends to equate such “groups” with groups possessing entitativity. The confounding of categories and groups developed alongside the conceptualization of social identity. The minimal groups Tajfel and colleagues studied were essentially lab-constructed categories. They were designed to demonstrate the powerful effects of social identity, with the assumption that “real” groups would have even more powerful effects on the actions of individuals. Setting aside potential differences stemming from the type of affiliation on which social identity could be based (e.g., category, large group, small group, dyad) and focusing instead on social groupings with minimal levels of groupness provided a level of simplicity to the theorization of social identity while demonstrating its powerful effects.

A collective-level understanding of social identity, however, requires that a clear distinction be made between collectivities and non-collectivities. For the concept of symbolic social network ties, a social unit qualifies as a collectivity if it is characterized by the criteria of entitativity. Various criteria have been proposed for entitativity; a non-exhaustive list includes boundaries, common fate, structure, interdependence, interaction,
similarity, proximity, shared goals, causal authority (i.e., the ability to bring about consequences as a social actor), and endurance (Abbott 1995; Campbell 1958; Hamilton and Sherman 1996; Hogg 2006; Lickel et al. 2000). While each of these characteristics contributes to entitativity in some way, I argue there are three essential criteria: boundaries allowing for the distinction between what is part of the entity and what is not part of the entity, membership-based interaction among at least some members, and the ability to act and be acted upon as a manifest corporate (collective) actor. As described below, as we progress through the list of criteria each more clearly distinguishes an entity from other social groupings (i.e., aggregates and categories): boundaries are necessary to begin drawing a distinction between entities and non-entities, interaction based on membership furthers that distinction, and capacity to act as a corporate actor draws a firm line between entities and non-entities.

**Boundedness**

Entities cannot exist without boundaries (Abbott 1995; Campbell 1958). Boundaries differentiate the entity as separate from other entities, specifying which things are part of it and which belong elsewhere, including the distinction between members of the entity (the ingroup) and nonmembers of the entity (the outgroup) (Allport 1954; 1954; 2013).

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6 These criteria encompass to a greater or lesser degree each of the various criteria other theorists have proposed. Boundedness implies structure and the potential for endurance, as well as a certain amount of similarity on whatever property qualifies individuals as falling within the boundaries of the entity, such as living in the same community, working at the same corporation, or maintaining membership in the same association. The ability to act as a corporate actor in relation to other actors is causal authority, and it also encompasses common fate, interdependence, and shared goals. Interaction allows for proximity (though modern technology does not require proximity for interaction) and similarity on some dimension that either requires or facilitates interaction, such as living in the same community or sharing a similar motivation to join a particular entity, such as a concern for wildlife conservation prompting membership in the World Wildlife Federation.
Abbott 1995). Rarely consisting of clear physical borders such as walls or fences, the boundaries of an entity are socially determined and their structure varies across entities—e.g., a town is bounded by demarcated city limits, a basketball team is bounded by the roster of players along with supporting personnel such as the coach and team manager, and a fraternity is bounded by the process of initiation into the brotherhood.

Boundaries between entities are typically symbolic boundaries—“conceptual distinctions made by social actors to categorize objects, people, practices, and even time and space” (Lamont and Molnár 2002, p.168). Though symbolic, the boundaries to which I am referring are predominately spatial, legal, or organizational (e.g., city limits, team rosters) rather than cultural, such as differences in consumption practices (Mark 2003; Lamont and Molnár 2001), preferred identity narratives (Smith 2007), or language (Billig 1995). While cultural boundaries follow from organizational boundaries, and vice versa (Lizardo 2006; Pachucki and Breiger 2010), I am interested in boundaries that relate specifically to the demarcation of social entities, and spatial, legal, and organizational boundaries are typically better suited for this task; cultural boundaries, such as musical tastes or fashion preferences, may be associated with either entity or category distinctions, and thus may be too inclusive to draw sharp lines of division between entities.

Though boundedness is a necessary criterion, it is the most inclusive of the three; aggregates and categories may also have boundaries. In order to further distinguish entities from aggregates and categories the other two criteria must also be present: some

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7 A primary feature of boundedness is that it allows for delimited membership. This accommodates Breiger’s (1974) definition of a group as a set of social actors for which a membership list could be produced through some means (e.g., obtaining an official group roster or constructing a list through field observations).
degree of membership-based interaction and the ability to act as a corporate actor.

**Membership-Based Interaction**

Social entities entail membership-based interaction among at least some members. Intragroup contact results from a shared focus of activity (Feld 1981) stemming from membership in the same social entity. This may involve collective action to achieve group goals (e.g., a town hall meeting), may be task-oriented (e.g., teamwork on a group project), may be purely social (e.g., a company holiday party), or may be more informal (e.g., co-workers chatting about work by the water cooler). Interaction has three key consequences, discussed in turn below: it creates and maintains behavioral network connections between interacting members, it is important in shaping and maintaining the entity’s meaning structure, and it facilitates the achievement of the other two criteria for entitativity.

Membership-based interaction builds behavioral network connections among members, which are vital in creating alliance in a complete symbolic network. Interaction motivates an awareness of harmony and unity by focusing attention and making group members aware of one another (Durkheim 1912/1965; Collins 2004). By generating the sense of being connected as mutual members of a social unit, interaction produces a sense of “we-ness” and community that binds together all members of the entity, even if not all members interact or have the potential for interaction.

In addition to creating behavioral network ties, membership-based interaction provides an avenue for the establishment, enactment, and enforcement of the unifying cultural meaning structure of the symbolic social network. Interaction establishes cultural frames and practices by creating shared symbolism, shared experience, and
shared expectations (Brown and Wade 1987; Collins 2004; Durkheim 1912/1965; Feld 1981). The enactment of group norms through interaction may range from mundane (e.g., chatting with a fellow community resident while waiting in line at the grocery store) to ceremonial (e.g., celebrating community life at an annual heritage festival). Interaction also exerts pressure toward conforming to group culture by creating a context for positively sanctioning normative behavior and negatively sanctioning deviant behavior (Durkheim 1912/1965; Coleman 1988; Collins 2004).

Finally, interaction facilitates the achievement of the other two criteria of entitativity (and vice versa). Boundaries are socially enacted through interaction based on group membership, which by definition excludes non-group members and thus enhances the sense of division between “us” and “them.” Acting as a corporate actor often involves interaction, such as discussing possible courses of action at a group meeting.

**Corporate Actor Capacity**

The most important criterion of entitativity is the ability to act and be acted upon as a manifest corporate actor with the capacity to bring about consequences as a single, coherent social actor. Abbott (1995) refers to this as “causal authority,” writing that a “crucial property of entities is their ability to originate social causation, to do social action” (873). Having the ability to act as a corporate actor capable of bringing about consequences in relation to other actors means an entity exists as a social actor beyond the individuals who comprise it. For example, a town may interact with other corporate actors such as other towns, the state, or an organization, as well as with individual actors, such as a resident or a politician.
Acting as a corporate actor is often handled through leaders who make decisions regarding the entity and represent the entity in relations with other entities, e.g., corporate boards of directors, city mayors, and team coaches. Acting as a corporate actor could also involve the aggregation of the actions of some or all members of the entity, such as voting to reach an entity-wide decision (e.g., the residents of a town voting to determine whether to raise the local sales tax) or acting in concert to represent the entity (e.g., members of a union going on strike in an effort to advance union interests or members of a basketball team working together to beat an opposing basketball team).

The capacity to act as a single social unit means entities exist as something separate and distinct from the individual members forming the entity. The ability to bring about consequences as a social actor is key for a collectivity to have a life of its own beyond the individuals composing it. The capacity to act as a corporate actor means an entity is a social unit in and of itself; an entity is a collection of individuals capable of entity-level accomplishments achieved as a unified social unit, such as the members of a rock band playing a show or the members of the Supreme Court ruling on a case.

Note that having the ability to act as a singular corporate actor is not the same as taking collective action. Collective action is coordinated action taken by two or more individuals with a collective outcome, such as a number of Habitat for Humanity volunteers working together to build a house. Acting as a corporate actor, on the other hand, means the entity acts as a single causal actor achieving outcomes in relation to other (individual or corporate) actors, such as the CEO of Habitat for Humanity representing the entity in interactions with a potential donor.

This criterion ties into the traditional social exchange theory distinction between
### Low Entitativity

<table>
<thead>
<tr>
<th>Aggregates</th>
<th>Categories</th>
<th>Entities</th>
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</thead>
<tbody>
<tr>
<td>Students in line at the food court</td>
<td>Transfer students</td>
<td>Sociology majors</td>
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<tr>
<td></td>
<td></td>
<td>Academic colleges</td>
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<td>Academic departments</td>
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<td></td>
<td></td>
<td>Fraternities and sororities</td>
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### High Entitativity

<table>
<thead>
<tr>
<th>Aggregates</th>
<th>Categories</th>
<th>Entities</th>
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**Figure 2.2.** Entitativity Continuum Using Social Groupings within a University as Examples.

...groups (social entities) and networks. Emerson (1972) defined groups as corporate actors and networks as sets of relations among (individual or corporate) actors. The concept of symbolic social networks provides a unified understanding of groups and networks: a symbolic social network is a set of relations among actors in a group which has the ability to act as a corporate actor.

**Aggregates, Categories, and Entities: The Entitativity Continuum**

In combination, the criteria of entitativity—boundaries defining what is part of the entity and what is not, interaction based on mutual membership in the entity, and the capacity to act as a corporate actor in relation to other actors—work in concert to clearly distinguish entities from aggregates and categories. It is useful, however, to think of social groupings along a dimension of “groupness” (Moreland 1987). Entitativity exists along a continuum (Campbell 1958; Hamilton, Sherman, and Lickel 1998), ranging from aggregates of disparate individuals on one end, to tightly bound, highly interactive, well-coordinated groups on the other end, with categories falling somewhere between aggregates of disparate individuals and groups with low entitativity. Consider Figure 2.
Entitativity varies by degree across social groupings according to the three criteria specified above:

1) Boundedness varies due to the clarity, changeability, permeability, and duration of boundaries, as well as membership stability (i.e., the extent to which membership is in flux). Entities which have clearer, less changeable, less permeable, and longer lasting boundaries, and those with greater membership stability have greater entitativity. Aggregates can have boundaries, such as the physical structure of a movie theater or an airplane. Aggregate boundaries, however, are typically temporary (e.g., lasting only the duration of the flight) and quite permeable (e.g., bank customers entering and exiting). Categories may also have boundaries, such as visible cues like hair color or gender markers, or credentials such as an accounting degree or having passed the bar exam. Category boundaries, however, often lack clarity because they are subjectively determined (e.g., the precise range of shades that can be classified as “brunette”) and highly permeable (e.g., one can easily become a brunette by dying one’s hair). Categories which have clearer and less permeable boundaries, such as race and gender, can be placed higher on the entitativity continuum than categories which have less clear and more permeable boundaries. It is important to note that categories which fall higher on the entitativity continuum typically have a greater impact on social life.

2) Interaction between members varies according to the frequency of interaction, the intensity of the interaction, and the proportion of members who interact.
Like boundedness, interaction may also characterize aggregates and categories. For example, two travelers on a plane may strike up a conversation during the flight. Such interactions based on aggregate membership, however, are typically one-shot, not very intense, and do not involve a high proportion of aggregate members. Interaction is often segregated by similarities—we tend to prefer interaction with others who are similar to us (McPherson, Smith-Lovin, and Cook 2001). As such, interaction is sometimes segregated along category lines (e.g., an all-female book club, an all-male softball team).

Interaction is best sustained through mutual entity membership. Entity membership facilitates more frequent interaction through opportunities such as bumping into a fellow community resident about town. It also facilitates interaction with a greater proportion of members through opportunities such as a town meeting. Entities can host very mild to very intense interactions—chatting with a neighbor about the weather is typically a rather mild form of interaction, while initiation into a gang might be very intense. Further, like interaction among category members, interaction among entity members may also be motivated by our preference to interact with similar others, such as teammates, fellow countrymen, or coworkers.

3) The ability to act and be acted upon as a manifest corporate actor varies across entities as a consequence of variations in the frequency with which an entity acts as a corporate actor, variations in the level of divisiveness among entity members (i.e., factional politics), and variations in the effectiveness of
leadership. Entities that more frequently exercise their corporate actor capacity will have better honed their capacity to act by establishing and putting into practice a process for doing so. Entities with greater divisiveness among members may be less able to make and subsequently implement corporate-level decisions, which reduces the ability to act as a coherent corporate actor. For example, greater divisiveness in Congress can lead to gridlock and policy inaction (Binder 2003; Jones 2001). Variations in leadership also impact corporate actor capacity. Leadership effectiveness is typically defined as the extent to which a leader’s organizational unit is able to successfully perform tasks and attain goals (Yukl 2002). Leadership may be more or less effective due to variations in the formalization of leadership positions and expectations, the capability of leaders, the coverage of leadership positions, and the support leaders receive from entity members. Without effective leadership, an entity will have more difficulty accomplishing tasks and meeting goals as a collective unit.

In spite of such variation, this criterion most clearly distinguishes entities from aggregates and categories—which lack this capacity altogether.\(^8\) Social categories, however, often provide a potential basis for the formation of an entity. An entity could be rooted in a categorical distinction based on activities, tastes, or demographics, such as members of a particular profession.

\(^8\) Here I would like to remind the reader that corporate actor capacity is distinct from collective action. Corporate actor capacity is the ability to act as a single social unit existing beyond the individuals comprising the entity. Collective action is two or more individuals (who may or may not share membership in an entity) working together to accomplish a goal. Collective action may occur in aggregates, such as two audience members collectively shushing a third audience member who is talking during a movie. Collective action may also be facilitated by shared category membership as a consequence of the homophily principle (McPherson, Smith-Lovin, and Cook 2001).
(a category) forming a professional association (an entity) (e.g., the American Sociological Association), people who share a fondness for the music of particular pop star (a category) forming a fan club (an entity) (e.g., Beiber Fever), or members of a demographic classification (a category) forming a civil rights association (an entity) (e.g., the National Organization for Women). Entities rooted in categorical memberships, however, differ from the categories on which they are based. For one thing, they typically do not include all members of the category (e.g., not all sociologists are members of the American Sociological Association). More importantly, the entity has the capability to bring about social accomplishments as a unified actor in the name of the entity, but not in the name of the entire category (e.g., the mission statement published by the National Association for the Advancement of Colored People does not necessarily reflect the goals of all African Americans).

**Studying Symbolic Social Network Ties**

The concept of symbolic social networks offers a number of potential research directions. Previous work on social identity has thoroughly examined social identity as an aspect of the social self. Conceptualizing social identity as a connecting force forming symbolic social network ties allows for a collective-level examination of social identity as an aspect of the social group—a group-level phenomenon with group-level causes and consequences. One of the major benefits of the concept is that it makes possible the study of social identity at the collective-level, independent of the individual members of the group. The bulk of sociological social identity research has focused on the impact of
categorically-based social identity on individual behaviors and attitudes, such as studies of the impact of gender identity on feminist activism (Burn, Aboud, and Moyles 2000) or the connection between race identity and consumption practices (Lamont and Molnár 2001). A number of sociological subfields correspond with the study of categorical distinctions (e.g., race, gender, sexuality), and social identity is a useful concept for understanding the impact of such social distinctions. Studying social identity in groups with at least a minimum level of entitativity, however, enables social scientists to also assess social identity as it externally manifests as a point of connection. By conceptualizing social identity as a network tie, the varied effects of social identity can be studied as they apply to collective activities and outcomes in collective-level contexts, such as communities, task groups, corporations, or social movement organizations.

The Strength of Symbolic Ties

Symbolic social network ties are collective-level social identity occurring in entities with entitativity. By combining social identity with entitativity, symbolic social network ties will have a stronger impact on social life than category-based social identity, which is not characterized by entitativity. Research indicates entitativity and its criteria enhance individual-level social identity: individuals tend to rate their memberships in groups with greater entitativity as more important to them than their memberships in groups with less entitativity (Lickel et al. 2000), they tend to identify less with groups that have more permeable boundaries (Ellemers, Kortekaas, and Ouwerkerk 1999), they tend to be less committed to social identities stemming from more permeable groups (Wright 1997), and they tend to demonstrate greater relational commitment and cooperation in more interactive groups (Lawler and Yoon 1996). Entitativity also
provides channels for the expression of entity-wide social identity effects; while a social identity based on a shared categorical classification is simply an indication of having something in common with others who are also in the category, sharing a social identity with others based on membership in a social entity provides a symbolic connection to all other entity members.

**Measuring Symbolic Social Network Ties: Degree of Entitativity**

While a symbolic social network is a property of all social entities, symbolic social networks differ in scope and intensity across entities as a result of variations in position along the entitativity continuum. Because the effects of symbolic social network ties are a consequence of the combined effects of entitativity and social identity, they are contingent upon the social context—the degree of entitativity characterizing the entity—rather than individual-level factors (e.g., commitment to an identity or behavioral ties to others). As such, greater entitativity should be associated with greater symbolic social network consequences.

The strength of a symbolic social network can thus be measured according to the degree of each of the criteria of entitativity present in the entity. Boundedness can be measured by the clarity, changeability, duration, and permeability of boundaries. Membership-based interaction can be measured by the frequency and intensity of interaction and the proportion of members who interact. Corporate actor capacity can be measured by assessing the effectiveness of leadership and the divisiveness (or coordination) that characterizes efforts to act as a corporate actor. Note that because symbolic social network ties are social identity conceived at the collective-level, this is a collective-level measurement.
Consequences of Symbolic Social Network Ties

Symbolic social network ties should impact social life in various meaningful ways. The effects of symbolic social network ties are a consequence of the combined effects of entitativity and social identity. They are predicted based on the established effects of social identity, with the expectation that because they exist in groups with entitativity, the effects of symbolic social network ties (i.e., entity-based social identity) will be more powerful than the effects of social identity not characterized by entitativity (i.e., category-based social identity).

The theoretical focus of this dissertation is on the effects of symbolic social network ties on cooperation. An extensive body of research has demonstrated the power of social identity to motivate ingroup\(^9\) cooperation in a variety of social contexts. Social identity has been found to inhibit inequality and exploitation in power-imbalanced negotiated exchange structures (Lawler and Yoon 1998), minimize defection in Prisoner’s Dilemma games (Simpson 2006; Yamagishi and Kiyonari 2000; Yamagishi and Mifune 2008), promote self-restraint in commons dilemmas (Brewer and Kramer 1986; Kramer and Brewer 1984), and contribute to the production and maintenance of collective goods (Anthony 2005; Brewer and Kramer 1986).

Mechanisms Driving Ingroup Cooperation

Social identity-enhanced cooperation is proposed to operate through two mechanisms: (1) concern for the outcomes of the group and fellow group members and (2) the expectation that fellow group members will reciprocate cooperation. The

\(^9\) Because social identity theorists typically do not draw a distinction between categories and entities, the term “group” is used to describe any collective an individual may belong to—including categories and entities—and the terms “ingroup” and “outgroup” are used to refer to members and non-members (respectively) of either categories or entities.
traditional social identity explanation for ingroup cooperation is that social identity engenders concern for the outcomes of the ingroup, or ingroup favoritism (e.g., Tajfel et al. 1971). Ingroup outcomes come to be perceived as one’s own, leading to a preference for collective gains over individual gains. For example, Kramer and Brewer (1984; Brewer and Kramer 1986) found that when identified as members of a common category, individuals sacrificed personal gain by exhibiting restraint in a commons dilemma so that others could share in the benefits. Drawing on the meta-contrast principle, which proposes that group members try to maximize intergroup differences and minimize ingroup differences (Turner 1985), Simpson (2006) argues that group members cooperate with others to maximize ingroup payoffs while also minimizing ingroup inequality. His work suggests actors cooperate with ingroup members due to concern for fellow group members’ outcomes as well as overall group outcomes.

Others have argued that social identity motivates cooperation by creating an expectation that fellow ingroup members will reciprocate cooperation (e.g., Brewer 1999). Yamagishi and colleagues (Yamagishi and Mifune 2008; Yamagishi and Kiyonari 2000) posit that people have a naïve theory of group operations, and an important feature of this theory is the expectation that the group accommodates cooperative exchange. That is, people believe that a generalized norm of reciprocity exists among ingroup members. As such, group members expect cooperation to be reciprocated and are free to cooperate without fear of nonreciprocity.

**Symbolic Social Network Ties as Symbolic Social Capital**

Symbolic social networks can be thought of as a symbolic form of collective-level social capital which enhances the benefits of (non-symbolic) social capital. Social capital
is a network-based resource inhering in the structure of social relations between and among persons and groups (Coleman 1988; Lin 2001). Like social identity, social capital is experienced both individually and collectively (Coleman 1988; Putnam 1993, 2000). Social capital is a private good experienced at the individual-level as a matter of relational ties to others—to whom one is connected and the value of those connections for achieving desired outcomes. Social capital is a public good experienced at the collective-level as a matter of both the extent of social ties within the collective as well as the larger social context within which those ties exist—collective social capital is typically conceived to be available only through networks of a certain type: those characterized by trust and norms of reciprocity (Putnam 1993, 2000).

Symbolic social network ties integrate both parts of the collective social capital equation: 1) shared social identity in an entity is a set of symbolic network ties, and 2) shared social identity enhances both trust and norms of reciprocity within the collective by engendering concern for the outcomes of fellow group members and expectations that fellow group members will reciprocate cooperation. Symbolic social network ties are thus symbolic social capital in the sense that they combine symbolic network ties with the proper conditions for collective-level social capital.

As a symbolic form of collective social capital, symbolic social network ties enhance the benefits of structural forms of social capital within the group. This is achieved through the combined benefits of entitativity and social identity. The criteria of entitativity work in concert to promote social capital outcomes: interaction enables the achievement of the benefits of structural social capital (e.g., information flow), while boundedness and corporate actor capacity provide symbolic closure—a property of social
systems with complete ties among members which enhances the effects of social capital (Coleman 1988). These ties provide channels for the expression of group-wide social identity effects, including expectations of reciprocity within the group and concern for the outcomes of the group and its members.

**The “Dark Side” of Symbolic Social Network Ties**

The effects of symbolic social networks are not all positive, however. Like other forms of social capital (Schulman and Anderson 1999; Portes and Sensenbrenner 1993; Putnam 2000), symbolic social network ties have a “dark side.” A symbolic social network may be constrictive in its pressure toward conformity; group norms are not always in the best interests of individuals within the group (e.g., Portes and Sensenbrenner 1993) and an individual may experience “cross-pressures” of conflicting normative prescriptions across relevant reference groups (Merton and Rossi 1968). Additionally, symbolic social networks may prompt problematic intergroup relations. The flip side of motivating group-oriented behavior is the potential evocation of disharmony and competition between groups. Tajfel’s original motivation for developing social identity theory was to explain tensions between groups such as prejudice and discrimination. Symbolic social network ties may motivate cooperation and trust within groups, but they may also motivate competition and negative sentiments between groups.

**Symbolic Social Network Ties and Cooperative Collective Action**

To provide an initial assessment of the effects of symbolic social network ties on social life, in this dissertation I examine their impact on collective forms of cooperation. Cooperation involves working with others to achieve a common goal (Cronk and Leech
Collective cooperation, or collective action, arises when the action of two or more individuals is necessary to achieve a particular outcome (Marwell and Oliver 1993; Sandler 1992). Cooperative collective action is necessary for social life to properly function; from agreeing on traffic rules in order to share the highway with fellow drivers to agreeing on monetary standards to shop at the local marketplace, cooperation is what makes society possible.

Though necessary for social life, cooperative collective action can be difficult to motivate. The heart of the problem is that collective action is a social dilemma, meaning self-interest conflicts with the interests of the collective—individuals have a rational self-interest to avoid costs while reaping rewards, which conflicts with the collective interest of working together to produce the desired mutual benefit (Olson 1965). Social identity has been found to encourage cooperation in social dilemma situations (e.g., Anthony 2005; Simpson 2006; Yamagishi and Kiyonari 2000), which leads me to two predictions. First, because symbolic social network ties combine the effects of social identity with entitativity, I predict that symbolic social network ties will have a stronger impact on cooperative collective action than category-based social identity. Second, I predict that greater levels of the criteria of entitativity in an entity (i.e., greater boundedness, interaction, and corporate actor capacity) will lead to greater cooperative collective action within the entity.

There are many types of cooperative collective action. In this dissertation, I study two: generalized exchange and community involvement. *Generalized exchange* is a form

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10 This is in contrast to the definition of cooperation used by scholars working in the evolutionary tradition (e.g., Nowak 2006). Evolutionary scholars typically conflate cooperation and altruism by defining cooperation as helping another at a cost to oneself (Cronk and Leech 2013).
of social exchange in which the benefits that an actor gives to another are repaid not by
the recipient, but by a third party (i.e., “paying it forward,” such as giving a stranger
directions or donating blood). Generalized exchange has a number of social benefits,
such as enhancing social capital and solidarity (Adler and Kwon 2002; Molm, Collett,
and Schaefer 2007). It is difficult, however, to establish and maintain collective giving in
generalized exchange because the indirect nature of generalized exchange increases the
risk of nonreciprocity involved (i.e., giving benefits but never receiving benefits in
return) (Lawler, Thye, and Yoon 2008; Molm, Collett, and Schaefer 2007). Because
generalized exchange is a particularly risky form of collective cooperation, studying it
provides a stringent test of the effects of symbolic social network ties on cooperation.

*Community involvement* is taking voluntary and unpaid action on behalf of community
interests, such as actively participating in local community groups and volunteering to
assist with local projects. It is a contextually-specific form of collective action that can
be vital to the success of a community. Studying community involvement allows me to
situate the study of symbolic social network ties and cooperative collective action in the
context of a particular type of entity.

**Testing My Predictions: A Two-Study Approach**

I have two main propositions. First, I predict that entity-based symbolic social
network ties will have a greater impact on cooperation than category-based social
identity. Second, I predict that greater entitativity in an entity, as indicated by greater
levels of each of the three dimensions—boundedness, interaction, and corporate actor
capacity, will be associated with greater cooperative collective action. In the following
two chapters, I use a two-study approach to test these predictions.
The first study, presented in Chapter 3, uses the experimental method to test my theoretical argument that entity-based social identity—i.e., symbolic social network ties—will produce stronger cooperation in collective action than will either category-based social identity or no social identity. Study 1 tests the causal impact of symbolic social network ties, and social identity more broadly, on cooperation in generalized exchange. I compare effects across three levels of social identity: no social identity, category-based social identity, and entity-based social identity. Results strongly support my theoretical argument; entity-based symbolic social network ties had a stronger impact on cooperation than did category-based social identity. Indeed, the level of cooperation in the category-based social identity condition was not significantly different from the level of cooperation found in the no social identity control condition. The difficulty involved in establishing cooperation in generalized exchange provides a stringent test of the effects of symbolic social network ties on cooperation. Results demonstrate that symbolic social network ties have a positive causal impact on cooperation in generalized exchange in spite of the risks involved in giving to others in generalized exchange.

In Study 2 I test whether the causal findings from Study 1 hold in a real world context. Using survey data, I assess the relationship between the entitativity of small towns and residents’ community involvement. Because the effects of symbolic social network ties are a consequence of the combined power of social identity and entitativity, I examine how variations in each of the three criteria of entitativity—boundedness, membership-based interaction, and corporate actor capacity—relates to its residents’ propensity to participate in two forms of community involvement: voluntary participation in community improvement activities and active membership in local organizations. As
predicted, I find that indicators of entitativity are positively related to both forms of community involvement. This relationship, however, was limited; while both boundedness and interaction are found to be positively related to both forms of community involvement, my measure of corporate actor capacity does not have a statistically significant relationship with either form of community involvement.

Findings from Study 2 build on Study 1 in four ways. First, they suggest that the causal relationship found between symbolic social network ties and cooperation in Study 1 holds in existing entities. Second, they extend research on symbolic social network ties and cooperative collective action to another form of collective action. Third, results from Study 2 show that greater interaction and less divisiveness are positively related to the mechanisms predicted to drive social-identity enhanced cooperation—expectations for reciprocally cooperative behavior within the group and concern about the outcomes of the group. These mechanisms, however, were not shown to mediate the relationship between the criteria of entitativity and community involvement. Finally, the results show that the criteria of entitativity differentially impact aspects of cooperation; variations in boundedness and membership-based interaction are found to be positively related to community involvement, but corporate actor capacity is not, and variations in interaction and corporate actor capacity are found to be positively related to expectations and concern, but boundedness is not. Study 2 is presented in Chapter 4.
CHAPTER 3
STUDY 1: AN EXPERIMENTAL TEST OF THE IMPACT OF SYMBOLIC SOCIAL NETWORK TIES ON COOPERATION IN GENERALIZED EXCHANGE

In this chapter, I test the theory of how and why symbolic social network ties affect cooperative collective action. To do so, I examine their causal impact on cooperation in generalized exchange—a particularly risky form of cooperative collective action. Further, I compare the effects of symbolic social network ties, which stem from mutual membership in an entity, with the effects of social identity based on mutual category memberships.

In addition to testing the effects of symbolic social network ties, this study also contributes to our understanding of motivations for generosity in generalized exchange. From giving a stranger directions to pitching in to clean up and rebuild after a natural disaster, individuals help others in big and small ways every day, without an expectation of immediate or direct reciprocity. When a person gives to another who will not directly repay the benefits, she is participating in generalized exchange—the practice of doing something good for someone now with either the expectation of being rewarded by someone else in the future or the recollection of having been rewarded by someone else in the past. Generalized exchange has many obvious benefits for individuals, such as assistance or information. It also has benefits for collectivities, such as enhancing social capital and solidarity (Adler and Kwon 2002; Molm, Collett, and Schaefer 2007). Compared with other forms of social exchange, however, it is difficult to establish and maintain generosity in generalized exchange (Lawler, Thye, and Yoon 2008; Molm, Collett, and Schaefer 2007). Because reciprocity is indirect there is a higher probability of giving without receiving benefits in return, which makes cooperation in generalized exchange particularly risky.
exchange riskier than it is in direct forms of social exchange (i.e., negotiated exchange and reciprocal exchange).

I hypothesize that a shared social identity among actors in a generalized exchange system will overcome the risk involved and produce the cooperation needed to establish and maintain a generous system of giving. I expect that the type of affiliation on which social identity is based, however, will differentially affect levels of cooperation in generalized exchange. I predict symbolic social network ties, which stem from entity-based social identity, will have a stronger impact on cooperation in generalized exchange than will category-based social identity.

I test my predictions using a controlled laboratory experiment. As predicted, results indicate that symbolic social network ties have a positive impact on cooperation in generalized exchange. Somewhat surprisingly, however, category-based social identity appears to have no effect on cooperation in generalized exchange.

**Generalized Exchange**

Social exchange involves the giving and taking of benefits, such as favors, courtesies, tangible goods, or assistance (Molm 2006). Generalized exchange is a form of social exchange in which the benefits that an actor gives to another are repaid not by the recipient, but by a third party. Examples include volunteering to help clean up after a natural disaster, taking food to a sick neighbor, and anonymously reviewing journal articles.

Generalized exchange is distinct from direct forms of social exchange because reciprocity in generalized exchange is indirect rather than direct. Forms of social exchange with direct reciprocity involve two actors engaging in a dyadic exchange of
benefits: A gives to B and B gives to A. Negotiated exchange and reciprocal exchange are direct forms of social exchange. In negotiated exchange, two actors jointly reach an agreement about the terms of the exchange, i.e., who gives what and how much. Roommates determining cleaning responsibilities and a salesperson hammering out the terms of a car purchase with a customer are examples of negotiated exchange. In reciprocal exchange, two actors independently decide when and how much to give to one another, such as neighbors trading favors or colleagues trading feedback. Generalized exchange is similar to reciprocal exchange in that actors independently decide when and how much to give one another. It differs from both reciprocal and negotiated exchange, however, in that reciprocity in generalized exchange is indirect—the benefactor is repaid by a third party rather than the beneficiary (e.g., A gives to B, B gives to C, C gives to A). For instance, when an individual gives directions to a stranger, she does not expect to be repaid by the stranger.

Generalized exchange can take one of three forms. In group-generalized exchange, group members pool their resources and all members share the benefits (Yamagishi and Cook 1993). Examples include group-work in undergraduate courses or maintaining a clean refrigerator in a break-room shared by office workers. Chain-generalized exchange involves at least three actors in a fixed structure of exchange, such as a chain or circle, determining who can give to whom (Ekeh 1974). A classic example is the Kula ring (Malinowski 1922; Ziegler 1990). A “Secret Santa” gift exchange in which all participants get a gift for only one other participant is a more modern example.

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11 Some have questioned whether group-generalized exchange is indeed a form of generalized exchange (e.g., Bearman 1997); social exchange researchers typically refer to exchanges that involve the pooling of resources and sharing in benefits as productive exchange (Molm 1994; Molm and Cook 1995; Lawler, Thye, and Yoon 2000).
Pure-generalized exchange is similar to chain-generalized exchange, but without a fixed network structure determining who can give to whom—any member of the exchange system can give to or receive from any other member (Takahashi 2000). Examples of pure-generalized exchange abound in everyday social life, such as donating blood, putting money in an expired parking meter, or contributing to the extra-penny-tray at a convenience store. In spite of its ubiquity, little research has addressed the causes and consequences of pure-generalized exchange. To fill this gap, this paper is a study of motivations for cooperation in pure-generalized exchange.

The Collective Nature of Generalized Exchange

Generosity in generalized exchange is a matter of cooperation. Cooperating in generalized exchange is giving benefits—by transferring a possession or performing a valued behavior—to another actor who will not directly reciprocate, with the anticipation of being repaid by a third actor at another point in time. Cooperation in generalized exchange is collective in nature in both outcome and input; a cooperative system of generalized exchange is a collective resource requiring a collective effort to establish and maintain.

Cooperative generalized exchange is a collective resource beneficial to individuals within the system as well as the group as a whole. A generous system of giving has obvious benefits for individuals, such as receiving directions when lost or help rebuilding after a disaster strikes. In addition to these important individual benefits, research and theorizing suggest generalized exchange also has valuable effects at the collective level, such as building group solidarity (Bearman 1997; Lévi-Strauss 1969; Malinowski 1922; Molm et al. 2007), facilitating coalition formation (Gillmore 1987),
enhancing social capital (Adler and Kwon 2002; Coleman 1988; Putnam 2000), and promoting the emergence of moral norms in society (Nowak and Sigmund 2005).

Though rooted in the cooperation of individuals, a generous structure of giving—and the benefits it affords individuals and collectivities—requires collective effort. Because generalized exchange by definition goes beyond the dyad, there are some inherent difficulties involved in establishing and maintaining a cooperative system of giving. At the heart of the problem is indirect reciprocity. Indirect reciprocity results in an increased risk of nonreciprocity, which occurs when an individual gives benefits to another actor and never receives rewards in return. Of the three major forms of social exchange—generalized, reciprocal, and negotiated—the risk of nonreciprocity is highest in generalized exchange. Because rewards are not repaid directly by the recipient, but indirectly by another actor, cooperation in generalized exchange lacks the assurances afforded direct forms of exchange such as binding agreements and the norm of repaying debts. Rather than two actors trading favors or reaching a joint decision of who receives how much, in generalized exchange cooperation depends on the independent action of a benefactor who decides whether to contribute resources to a beneficiary who will not be the one to repay the benefits.

A second difficulty is that a certain level of cooperation within the system is necessary for actors to have an incentive to give to others. Generosity in generalized exchange is often attributed to altruism (Sahlins 1965; Takagi 1996) or collective norms (Ekeh 1974; Lévi-Strauss 1969), but there is also an aspect of rational self-interest involved (Gillmore 1987; Takahashi 2000). Generalized exchange can be classified as a system of exchange because it involves both giving and receiving—those who give have
an expectation of future rewards, recollections of past rewards, or both. As such, cooperation begets further cooperation: actors in a generalized exchange system are more likely to transfer benefits to others if they have previously received benefits (Levine and Baker 2008).

Of course, the converse is also true—noncooperation leads to further noncooperation. Actors in a generalized exchange system are less likely to transfer benefits if they have not previously received benefits (Levine and Baker 2008). In more abstract terms, if A does not give to B, the likelihood that B will later give to C is reduced. Thus, a single non-cooperator can undermine the entire system of giving by triggering other actors to not cooperate and non-cooperation can quickly spread throughout the system (Nowak and Sigmund 1998).

Further complicating the issue is that cooperation in generalized exchange cannot be induced through traditional tit-for-tat strategies. Tit-for-tat is a simple but powerful motivator of cooperation (Axelrod 1984). It involves rewarding cooperation and punishing noncooperation by reciprocating one’s partner’s behavior, i.e., cooperating when one’s partner cooperates and not cooperating when one’s partner does not. Because reciprocity is indirect, an actor cannot directly reward cooperation or punish noncooperation—resulting in a higher risk of nonreciprocity in generalized exchange compared to other forms of social exchange.

**Overcoming Risk**

Research on overcoming the risk of nonreciprocity in pure-generalized exchange has focused on reputation-based strategic solutions for encouraging cooperation. Members of a collectivity typically strive to maintain good standing in anticipation of the
future utilities it may grant (Portes and Sensenbrenner 1993, Weber 1947). Evidence suggests this is the case in generalized exchange systems; actors are more likely to bestow benefits in generalized exchange when they are aware their decision will be publicly visible (Levine and Baker 2008), suggesting actors may try to build a reputation of generosity with the expectation that this will serve to ensure reciprocity. When benefactors have information on the giving behavior of potential beneficiaries, they are able to encourage cooperation by rewarding givers and punishing non-givers (Takahashi 2000). With indirect rewards for cooperation and indirect punishment for noncooperation, reputation-based giving is essentially a modified tit-for-tat strategy—giving to those who have given to others and not giving to those who have not given to others.

Unfortunately, a reputation-based solution to nonreciprocity is not as simple as a traditional tit-for-tat strategy. One issue is the necessity for consistency. Nowak and Sigmund (1998) found that cooperation lasts longer in generalized exchange systems if actors consistently use reputation information to determine their giving behavior. Their simulated populations suggest that cooperation in systems of generalized reciprocity depends on actors’ abilities to determine other actors’ reputations for cooperating and to base their giving decisions on this information. For the strategy to be effective, it is important that no actors unconditionally cooperate—because unconditional cooperators cooperate with everyone, even non-cooperators, there is no selection against noncooperation and it is allowed to persist and spread throughout the system.

The second problem is that punishing noncooperation involves a cost to self because it negatively impacts one’s reputation of generosity (Fehr and Gächter 2002).
Punishing non-cooperators at a cost to self—known as altruistic punishment—may be common in generalized exchange systems (Levine and Baker 2008), but it has mixed results. On the one hand, it encourages cooperation by punishing those who fail to cooperate. On the other hand, it may spread noncooperation throughout the system if generous benefactors are sanctioned for not cooperating with non-cooperators. An otherwise generous benefactor who is punished for not cooperating with a non-cooperator may be less likely to cooperate with others in the future, thus adding to the level of noncooperation in the system. To overcome this problem, benefactors need more than just information regarding a potential beneficiary’s giving behavior. They also need information addressing why the benefactor may or may not have cooperated with others.

Clearly, although reputation-based giving strategies are potentially effective at reducing the risk of nonreciprocity in generalized exchange, they can be both complex and information intensive (Fehr and Gächter 2002). While information on the giving behavior of others may be relatively easy to manage in small groups, as group size grows it becomes more difficult to keep track of who has contributed and who has not (and why) and non-cooperation becomes more difficult to control. Further, generalized exchange may involve strangers. Consider the example of helping a lost freshman on campus—it is quite probable the benefactor has never met the student and knows nothing about his level of generosity.

There may be, however, a property of the exchange system which preempts the need for strategic solutions and the information they require: shared social identity. Social identity is a strong motivator of cooperation requiring minimal information (e.g., Tajfel et al. 1971), suggesting it may overcome the risk of nonreciprocity in generalized
exchange while avoiding the complexities and complications of reputation-based solutions.

**Social Identity and Cooperation in Generalized Exchange**

In Chapter 2, I discussed the positive impact social identity has been found to have on cooperation with fellow ingroup members. These effects are proposed to operate through two mechanisms: (1) concern for the outcomes of the group and concern for the outcomes of others in the group and (2) the expectation that fellow group members will reciprocate cooperation. Both mechanisms should work together to overcome the risk of nonreciprocity in generalized exchange; concern about fellow group members makes the risk worth taking, and expectations of reciprocity facilitate trust that one’s giving will be repaid. I propose the following hypothesis:

**H1.** Cooperation will be greater in generalized exchange systems characterized by a shared social identity than in generalized exchange systems not characterized by a shared social identity.

**Category-Based Social Identity vs. Entity-Based Symbolic Social Network Ties**

I propose, however, that the type of affiliation on which social identity is based—category or social entity—will differentially affect levels of cooperation in generalized exchange. A social identity can be based on any category or collectivity to which an individual recognizes herself as belonging, from being a redhead to being a member of the local teamsters union. There are important differences, however, between category-based social identity and entity-based social identity (see Chapter 2). Most work on social identity ignores these differences (Brown et al. 1992; Deaux et al. 1995; Lickel et al. 2000). Research on social identity tends to emphasize category-based social identities...
like gender, race, ethnicity, or so-called “minimal groups” (Hogg 2006; Owens, Robinson, and Smith-Lovin 2010), giving less attention to variations in group type. Based on the distinctions between category-based social identity and entity-based social identity that I developed in Chapter 2, I argue that entity-based social identity—and its attendant symbolic social network—will motivate greater cooperation than category-based social identity.

**Category-Based Social Identity**

Category-based social identity stems from meeting the criteria necessary for membership in a particular category, such as being unemployed, blonde, Latina, a Cubs fan, or a Democrat. Social identity based on classification in a social category can also be based on something more trivial, such as preferring Klee paintings to Kandinsky paintings or wearing eyeglasses. Simply put, category-based social identity is a matter of shared attributes rather than shared memberships.

Work on category-based social identity has demonstrated the power of social identity to motivate actors in a variety of ways. Tajfel (1970) and others (e.g., Tajfel et al. 1971; Turner and Bourhis 1996) have shown that people will favor others who are classified in the same category they are, even if the categorization is on a trivial basis (e.g., whether subjects prefer Klee versus Kandinsky paintings, a coin toss), there is no face-to-face interaction, the category is imposed by others, and the individuals sharing the classification do not know one another. In short, people tend to cooperate with others belonging to their category even when they appear to have little or no reason to do so.

**Entity-Based Social Identity: Symbolic Social Network Ties**

Entity-based social identity, on the other hand, stems from membership in a group
meeting the criteria of entitativity developed in Chapter 2: boundedness, interaction based on group membership, and the capacity to act as a manifest corporate actor in relation to other (individual or corporate) actors. Examples of such groups include a town, software company, Senate committee, baseball team, or rock band. Entitativity can have a powerful effect on group members. For example, individuals tend to rate their memberships in groups with greater entitativity as more important to them than their memberships in groups with less entitativity (Lickel et al. 2000). Other research suggests similar entitativity-related effects: individuals tend to identify less with groups that have more permeable boundaries (Ellemers, Kortekaas, and Ouwerkerk 1999), tend to be less committed to social identities stemming from more permeable groups (Wright 1997), and tend to demonstrate greater relational commitment and cooperation in more interactive groups (Lawler and Yoon 1996). These findings suggest entitativity should enhance cooperation because it enhances individual attachment to an identity.

Because symbolic social networks are characterized by entitativity and categories are not, I anticipate that the effects of social identity on cooperation in generalized exchange will vary according to the type of affiliation on which the social identity is based. Specifically, I predict:

**H2.** *Cooperation will be greater in generalized exchange systems characterized by symbolic social network ties than in systems characterized by category-based social identity.*

**Methods**

To test my hypotheses, I designed a controlled laboratory experiment in which subjects participated in computer-based generalized exchange networks involving a series
of opportunities to cooperate (or not cooperate) with others in the network by giving to
other participants (or keeping for oneself) points that were worth money.\textsuperscript{12} The
experiment consisted of two phases. Phase one was designed to manipulate the form of
social identity in the network: no social identity, category-based social identity, or entity-
based symbolic social network ties. Both of the social identity manipulations were
minimal—I created a minimal category using an adapted minimal group paradigm
manipulation and a minimal symbolic social network meeting minimal levels of each of
the three criteria for social entities: boundedness, interaction, and capacity to act as a
unified corporate actor. Phase two of the experiment consisted of the generalized
exchange process. The details for each phase are described below, following a brief
overview of the experimental design and participants.

\textbf{Design and Participants}

Each experimental session involved one generalized exchange network as the unit
of analysis. Each network was randomly assigned to one of the three experimental
conditions, which were based on the level of social identity in the exchange network: no
social identity, category-based social identity, and entity-based symbolic social network
ties. Exchange networks consisted of four participants. Participants were not aware of
how many others were in their exchange network, however, and were encouraged to
believe that they were participating with a larger number of others; for example, subjects
were told that participants in the experiment were spread across two labs on campus. I
ran 20 networks per condition, for a total of 60 networks comprising 240 participants. I
counter-balanced on gender: all networks were composed of same-sex subjects, with ten

\textsuperscript{12} The experiment was designed using z-Tree software (Fischbacher 2007).
male and ten female networks in each condition.

Subjects were undergraduate students between the ages of 18-24. Subjects were recruited using an ad in the university newspaper and flyers posted in dorms and other university buildings. To prevent the influence of non-experimental factors, such as personal characteristics like sex or appearance, interaction occurred entirely through computers and participants were not allowed to meet prior to or after the experiment. At the conclusion of the experiment, subjects were paid for the points they accumulated through the generalized exchange process. Potential earnings ranged from $12 to $27, with typical payments between $12 and $18. The experiment was designed to meet the traditional scope conditions of social exchange theory: actors were dependent on exchange partners for acquiring a valued resource (money), actors were recruited on the basis of their desire to gain more of this resource, and exchanges occurred repeatedly over time (Molm and Cook 1995).

**Phase One: Social Identity Manipulations**

The first phase of the experiment involved the manipulation of the form of social identity characterizing the generalized exchange network: none, category-based social identity, or entity-based symbolic social network ties. After being seated in separate rooms and reading a brief overview of the experiment they would be participating in, subjects were informed that before the experiment would begin the experimenter had a short task for them to complete. The task involved identifying group name preferences, either designated as “something you might call an intramural sports team or perhaps a garage band” (in the no social identity and category-based social identity conditions) or as potential group names for the exchange system in which they would be participating
No Social Identity and Category-Based Social Identity

Subjects in the no social identity condition and the category-based social identity conditions went through the same task but received different feedback about the purpose of the task. The manipulation of category-based social identity was designed to be in line with the tradition of the minimal group paradigm (e.g., Rabbie, Schot, and Visser 1989; Tajfel et al. 1971): subjects were sorted into categories according to some trivial preference, there was no face-to-face interaction, the category was imposed by the experimenter, and the individuals sharing the classification did not know one another. The manipulation of the no social identity condition involved subjects going through the same task as in the category-based social identity condition, but not being sorted into categories at the end of it.

The Task. To keep my design as similar as possible across conditions, I presented subjects with a series of pairs of group names, described as “something you might call a garage band or perhaps an intramural sports team.” For each pair, subjects were asked to select their preference between the two names. For example, subjects were presented with the names “Fire Breathing Kittens” and “Legion of Awesome” and asked to select their preference between the two by clicking on the appropriate box. Subjects were presented with nine pairs of names one pair at a time.

The Feedback. The information participants received regarding the purpose of the name preferences task differed according to the level of social identity in the system.
Subjects in the no social identity condition were told they were completing the task to assist the researcher in designing a future experiment about linguistic preferences, and thus the assessment had nothing to do with the current experiment. Subjects in the category-based social identity condition were told that for administration purposes participants would be split into two categories and during the experiment they would only interact with other participants who were also in their category (again, subjects were not aware of how many other individuals were participating in the experiment with them). At the conclusion of the name preferences task, subjects were told that they were being placed into the category with participants who were most similar to them in their linguistic preferences. In reality, however, all subjects were sorted into the same category. This category was designated “Category Q.” To keep this category designation salient, before the exchange portion of the experiment began participants were reminded that they would only be interacting with other participants who were also in their category, and the words “Category Q” appeared at the top of their screen throughout the exchange phase of the experiment.

**Symbolic Social Network Ties**

To create this sense of connection in the lab, the entitativity of the group was manipulated by addressing each of the three characteristics of social entities: boundedness, interaction, and capacity to act as a corporate actor. Like participants in the category-based social identity condition, participants in this condition (who also did not know how many others were participating with them) were told that participants were being split into two groups: Group 1 and Group 2. They were then asked to come up with a unique name for Group 1 in order to facilitate comparisons between Group 2 and
all other groups that participated in the experiment at other times. In addition to giving participants a task to work on together, the manipulation was designed to highlight group membership by creating an ingroup/outgroup distinction.

This involved a three step process:

Step 1: First, participants were told that they would be “temporarily placed into smaller groups of 2 to 4 participants.” The four participants were then split into two subgroups each consisting of two participants. Each was informed she had “been assigned to a 2-person subgroup with one other member of Group 1.”

Step 2: Next, the two participants in each subgroup were connected to one another via a chat box on their computer screens. They were instructed to work together to come up with a name to suggest for Group 1. To keep the conversation focused and to prevent participants from learning potentially influencing information about their fellow exchange partners (e.g., name, sex, major), they were asked to limit their discussion to the selection of a group name. Once they had mutually agreed upon a name to nominate, they submitted their name to the researcher by typing it into a textbox.

Step 3: Finally, the names nominated by each pair were added to a list of 14 other names that were supposedly nominated by other pairs but had actually been prepared by the researcher. The 14 names prepared by the researcher were consistent across sessions and were names used in the name preferences task of the no social identity and category-based social identity conditions. Each participant then voted individually for the group name she preferred by clicking on 1 of the 16 names. Participants were informed that the name they had voted for was selected as the group name. As in the category-based social identity condition, to maintain the salience of the group subjects were reminded before
the exchange portion of the experiment began that they would only be interacting with others who were also in their group and their group name appeared at the top of their computer screens throughout the generalized exchange process.

This manipulation of symbolic social network ties created a sense of entitativity in the lab by addressing each of the three characteristics of social entities. First, it constructed boundaries by making the group distinguishable from other exchange groups (e.g., “We are ‘Team Awesome,’ not ‘The Big Time’”), including the other exchange group supposedly participating at the same time as their group as well as all other groups that participated at other times. Second, the task involved membership-based interaction with one fellow participant. Finally, the task addressed the corporate actor component by emphasizing the exchange system as a distinct collective entity in two ways: 1) members of the exchange system had to come up with a single collective name to represent the entity as a collective unit and 2) subjects were informed that their performance as a group would be compared to the performances of all other groups that participated in the experiment.

**Phase Two: Generalized Exchange Process**

Following the manipulation of social identity, the second phase of the experiment consisted of the generalized exchange process. Drawing on prior experimental work on generalized exchange (Lawler, Thye, and Yoon 2008; Levine and Baker 2008; Molm et al. 2007; Nowak and Sigmund 1998; Yamagishi and Cook 1993), operationalization of the process of generalized exchange involved actors making choices over a series of trials regarding whether or not to give points to other actors in the system. These points were worth money and participants were paid according to the number of points they
accumulated during the exchange portion of the experiment.

Most experimental studies of generalized exchange have studied chain-generalized exchange (e.g., Lawler, et al. 2008; Molm et al. 2007; Yamagishi and Cook 1993). To create a system of pure-generalized exchange in the laboratory, I drew on Levine and Baker’s (2008) operationalization of pure-generalized exchange. Exchange occurred over a series of 60 trials. To avoid endgame effects, participants did not know the number of trials in the experiment. On each trial subjects were randomly paired with an anonymous exchange partner. Though this effectively split the four-actor network into two pairs on each trial, subjects were not aware of exactly how many others were in the exchange system, allowing them to assume they were being paired with a new partner on each trial. Each exchange partnership consisted of a randomly designated benefactor (one who could give points) and a randomly designated beneficiary (one who could receive points). To reduce social desirability pressures that might be associated with words such as “benefactor” and “beneficiary” or “giver” and “receiver,” the participant who could give points was referred to as “A” and the participant who could receive points was referred to as “B.” Note that 1) each trial consisted of two A-B pairs, 2) these designations were randomly assigned on each trial, so sometimes a participant would be A and other times she would be B, 3) subjects were re-paired on each trial, so that they were not paired with the same partner each time, and 4) all exchange partners were anonymous—i.e., subjects had no information about their partner, including who their partner was, whether they had been paired with their partner on previous trials, or their partner’s giving history.

13 Pretesting showed that this was a sufficient number of trials so that a stable level of exchange could be reached, but was not so many trials that participants grew bored of the exchange.
On each trial, both As had 10 points added to their point bank. Each then had to choose whether to cooperate by giving some of the points to their partner B or to not cooperate by keeping all of the points for themselves. To mitigate social desirability effects the decisions were referred to as KEEP or TRANSFER. If an A chose to KEEP, she was allowed to keep all 10 points in her point bank and her partner B would receive 0 points for that trial. If an A chose to TRANSFER, she was allowed to keep 4 points in her point bank and the remaining 6 points were increased to 15 and transferred to her partner B.14 Reflecting the collective benefit of cooperation in generalized exchange, a decision to KEEP resulted in 10 total points of profit for the pair (all of which went to A), while a decision to TRANSFER resulted in 19 total points of profit for the pair (which were shared, albeit unequally). At the conclusion of the experiment, subjects were paid 3 cents per point for the points they were given and/or kept throughout the course of exchange.

All exchange partners were anonymous and subjects did not have any information about their exchange partners. To maintain the independence of decisions involved in the indirect nature of generalized exchange—and thus maintain the risk—participants did not know whether they had given points to or received points from their partner on previous trials. Nor did they have any information on the giving behavior of any other actor in the system. As such, actors were not motivated to cooperate to avoid a bad reputation, nor were they motivated by a norm of reciprocity to reward or punish the past giving behavior of their potential beneficiary.

14 This point system was consistent across trials. All subjects had full information regarding the point system. That is, all participants knew that a decision to KEEP provided A with 10 points and B with 0 points and a decision to TRANSFER provided A with 4 points and B with 15 points
Measuring Cooperation

To reflect the collective nature of generalized exchange, I measure cooperation as the extent of giving within the system as a collectivity of actors—not how much or how often any one individual actor in the system gave to others. Thus, the measure is at the level of the exchange system. It is a simple calculation of the percentage of trials on which the As chose to give points to the Bs. The range of possible scores for cooperation is 100% if both As chose to transfer on all 60 trials to 0% if neither A chose to transfer on any of the 60 trials. I assess my hypotheses by comparing the average levels of cooperation across conditions.

Results

Table 3.1 presents the means, standard deviations, and ranges for cooperation by condition. Overall, subjects cooperated about 59% of the time, which is in line with findings from other generalized exchange experiments (Ule et al. 2009). The means are in the anticipated order, with greater cooperation in the category-based social identity condition than in the no social identity condition, and greater cooperation in the entity-based symbolic social network condition than in the category-based social identity condition (μ None < μ Category < μ Entity). I test my hypotheses using a one-way ANOVA, with the overall treatment effect decomposed into two orthogonal pairwise comparisons that correspond to the two hypotheses. The first comparison assesses whether there is a statistically significant difference between the means for the no social identity condition and the combined means for the two social identity conditions (Hypothesis 1), and the second comparison tests whether there is a statistically significant
Hypothesis 2

I begin with the test of Hypothesis 2, which is the most central to my theoretical argument. Hypothesis 2 predicted that cooperation would be greater in generalized exchange systems characterized by entity-based symbolic social network ties than in systems characterized by category-based social identity ($H2: \mu_{\text{Category}} \leq \mu_{\text{Entity}}$).

Results support the hypothesis, showing that participants cooperated more in the symbolic social network condition (about 67% of the time) than in the category-based social identity condition (about 57% of the time). The second orthogonal comparison difference between means for the category-based social identity condition and the entity-based symbolic social network condition (Hypothesis 2). ANOVA results are displayed in Table 3.2.

**Table 3.1.** Means, Standard Deviations, and Ranges for Cooperation in Generalized Exchange by Form of Social Identity ($N = 20$ in each condition)

<table>
<thead>
<tr>
<th>Social Identity</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Social Identity</td>
<td>54.04</td>
<td>15.36</td>
<td>21.67 – 75.00</td>
</tr>
<tr>
<td>Category-based</td>
<td>56.62</td>
<td>22.23</td>
<td>7.50 – 98.33</td>
</tr>
<tr>
<td>Entity-based</td>
<td>66.67</td>
<td>19.38</td>
<td>38.33 – 99.17</td>
</tr>
</tbody>
</table>

**Table 3.2.** ANOVA Results for Cooperation in Generalized Exchange by Form of Social Identity ($N = 20$ in each condition)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No SI vs. Any SI</td>
<td>771.05</td>
<td>1</td>
<td>771.05</td>
<td>2.09</td>
</tr>
<tr>
<td>Category SI vs. Entity SI</td>
<td>1008.22</td>
<td>1</td>
<td>1008.22</td>
<td>2.74*</td>
</tr>
<tr>
<td>Within</td>
<td>21004.84</td>
<td>57</td>
<td>368.51</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22784.10</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p \leq .05$ (one-tailed test)
shows that the difference in means between these two conditions was statistically significant ($F_{1, 57} = 2.74, p = .05$, one-tailed test).

Finding that symbolic social networks have a stronger effect on cooperation in generalized exchange than category-based social identity clearly demonstrates that entitativity has important consequences for social identity outcomes. Boundedness, interaction, and the ability to act as a unified corporate actor enhance the effects of social identity on cooperation in generalized exchange. This indicates that not all social identities are equal, highlighting the importance of attending to differences between category-based social identity and entity-based symbolic social network ties.

**Hypothesis 1**

Support for Hypothesis 1 was less conclusive. Hypothesis 1 predicted that a shared social identity of either type would enhance cooperation in generalized exchange relative to no social identity. This hypothesis is tested with the first orthogonal comparison, which compares the difference between the level of cooperation in the no social identity condition and the average level of cooperation when there was any social identity present, i.e., the average level of cooperation in the category-based social identity and symbolic social network conditions combined ($H1: \mu_{\text{None}} \leq \frac{1}{2} (\mu_{\text{Category}} + \mu_{\text{Entity}})$). In the no social identity condition subjects cooperated on average about 54% of the time, compared to approximately 62% of the time when there was any level of social identity in the network. Although the general pattern is in the predicted direction, the contrast test indicates this finding is only marginally statistically significant ($F_{1, 57} = 2.09, p = .08$, one-tailed test).
I attribute this marginal statistical significance to two main causes. First, there was little difference in the effects of no social identity and category-based social identity on cooperation. The two had quite close means: 54% for no social identity versus approximately 57% for category-based social identity. Pairwise comparison of these two conditions indicates that the small difference between the two means is indeed not statistically significant ($F_{1, 57} = .18$, $p = .34$, one-tailed test), suggesting a shared category-based social identity was not sufficient to overcome the risk involved in generalized exchange.

Second, as in other studies of generalized exchange (e.g., Molm et al. 2007), there was a good deal of variation in cooperation across conditions. Individual cooperation rates ranged from 0% to 100% in all conditions, with approximately 8% of subjects never choosing to cooperate and nearly 17% of subjects always choosing to cooperate. This variation reinforces the conclusion that it is difficult to establish a cooperative structure of giving in generalized exchange systems—cooperating in generalized exchange is risky and there is a good deal of variability in how individuals respond to that risk. Variation in collective-level cooperation rates was particularly high in the category-based social identity condition, which ranged from a low of just 7.5% to a high of 98.33%. Again, this suggests category-based social identity was not sufficient to consistently overcome the difficulty of motivating cooperation in generalized exchange. It also suggests greater individual differences in how people respond to category-based social identity when compared with either entity-based symbolic social network ties or not sharing a social identity with potential beneficiaries.
In combination, these two factors—the small absolute difference in means for the no social identity and category-based social identity conditions and the high variation in cooperation across conditions—reduced the statistical significance of the mean comparison between systems with no social identity and systems with any level of social identity. Given these two factors and the conservative manipulations of both social identity conditions, the marginal support for Hypothesis 1 is nonetheless suggestive of the conclusion that cooperation in generalized exchange is enhanced by a shared social identity in the system.

**Discussion and Conclusion**

As predicted, results indicate social identity positively impacts cooperation in generalized exchange, and entity-based social identity has a greater impact than category-based social identity. This project adds to the body of research on the causal effects of social identity on cooperation in various social contexts (e.g., negotiated exchange systems, commons dilemmas) by extending this line of research to generalized exchange systems. Cooperation in generalized exchange is particularly difficult to establish; finding that social identity is a sufficient motivator to overcome this difficulty demonstrates the impressive power of social identity to promote ingroup cooperation. Further, finding that social identity positively impacts cooperation in generalized exchange shows that reputation-based giving—an effective but problematic strategic solution to overcoming nonreciprocity in generalized exchange—may be unnecessary if benefactors and beneficiaries share a social identity. In contrast to the complicated, extrinsic incentive to cooperate that may potentially be achieved through consistent, system-wide adherence to reputation-based giving, a shared social identity in the
generalized exchange system provides a simple, intrinsic motivation for generosity in generalized exchange.

Results show that not all forms of social identity, however, have the same impact on cooperation in generalized exchange. Category-based social identity fell short of consistently motivating greater cooperation in generalized exchange. This is somewhat surprising, given the support others have found for a positive relationship between category-based social identity and ingroup favoritism (e.g., Simpson 2006; Tajfel et al. 1971; Yamagishi and Kiyonari 2000). This finding reaffirms that it is difficult to establish cooperation in generalized exchange; although the minimal manipulation of category-based social identity used for this study was a variation of the minimal group paradigm manipulations used in other studies of social identity and ingroup cooperation, it was simply not a strong enough motivator to consistently counteract this difficulty. It is possible, however, that using a stronger manipulation of category-based social identity or sorting subjects according to preexisting categorical affiliations, such as gender or being a fan of a particular sports team, would motivate cooperation in generalized exchange. Future research should explore this possibility.

Entity-based social identity, on the other hand, overcame the risk of nonreciprocity and promoted greater giving in generalized exchange. As predicted, being in a bounded, interactive group with corporate actor capability motivated greater generosity in generalized exchange than did sharing a categorical classification. This result supports the argument that entity-based social identity is fundamentally different from—and stronger than—category-based social identity. This finding has important implications for the study of social identity. It shows that there are meaningful
differences between category-based social identity and entity-based social identity. These differences, unfortunately, are all too often overlooked in social identity research. The minimal group paradigm manipulations used in early studies of social identity and cooperation were designed to demonstrate that social identity has powerful effects on ingroup favoritism in spite of the trivial nature of categorization used. This allowed the assumption that “real” groups would have even more powerful effects on the actions of individuals. The power of minimal group social identity to motivate ingroup favoritism has been thoroughly established; it is time to consider what impact variations in entitativity—i.e., group “realness”—has on social identity processes and outcomes. The concept of symbolic social network ties provides the theoretical extension of social identity theory necessary to properly accounts for these differences.

This study offers a starting point for a number of avenues for future research. Entitativity exists along a continuum, with categories at one end and highly interactive, tightly bounded groups with the ability to act as a coordinated corporate actor at the other. In order to create properly comparable conditions, I used minimal manipulations for both forms of social identity—a category meeting minimal categorical criteria and an entity meeting minimal levels of the criteria of entitativity. The findings presented here indicate entitativity matters, suggesting more entitative groups will have a greater impact on social identity-related outcomes. An important undertaking will be to examine groups with greater entitativity to assess this possibility. Another important avenue of research will be to examine the three criteria of entitativity in isolation to determine their unique effects on social identity and its outcomes.
Further work is also needed on the proposed mechanisms driving the social identity-cooperation relationship. In analyses not presented here, data from a post-survey questionnaire demonstrated little support for the hypothesized mechanisms of concern for others in the group and expectations of reciprocity within in the group. I will return to this issue in Chapter 4.

Study 1 has important implications for social groups. The findings suggest that in order to reap the varied benefits of a generous system of generalized exchange, groups should find ways to highlight their entitativity: draw attention to group boundaries, encourage intragroup interaction, and exercise the ability to act as a corporate actor. While nearly all groups could benefit from such an approach, it may be particularly beneficial for groups whose success relies on generalized giving, such as non-profit organizations (e.g., The Red Cross, local food banks) and community groups (e.g., civic organizations, volunteer fire departments).

In the next chapter, I present Study 2. Study 2 tests whether the causal findings from Study 1 hold in the real world context of communities of place. Using survey data on small towns, I assess the relationship between the degree of entitativity in a community and its residents’ propensity to be actively involved in local cooperative collective action. Specifically, I examine how each of the three criteria of entitativity—boundedness, interaction, and corporate actor capacity—are associated with two types of community involvement: voluntary participation in community improvement activities and active membership in local organizations.
CHAPTER 4
STUDY 2: A SURVEY ANALYSIS OF SYMBOLIC SOCIAL NETWORK TIES AND COMMUNITY INVOLVEMENT

To examine how symbolic social networks shape cooperation in “real world” entities, I conduct a survey-based analysis of symbolic social network ties in small towns. Specifically, I examine the relationship between symbolic social network ties and community involvement by examining the effects of entitativity on residents’ propensity to belong to local organizations and participate in local projects. Community involvement is a form of collective action specific to the context of communities. “Community” is a broad term that has been applied to social units defined spatially (e.g., Wilkinson 1991), virtually (e.g., Driskell and Lyon 2002; Holmes 1997), and cognitively (e.g., Anderson 1991). Here, I focus on communities of place, which are spatially defined as a legally bounded concentration of population (US Census Bureau 2000). Such spaces range from the largest nations to the smallest neighborhoods. This study focuses specifically on small towns (i.e., nonsuburban communities with 500 to 10,000 residents), where resident participation may be especially crucial in the pursuit of community goals.

Study 2 was designed to build on Study 1 in several ways. In Study 2, I test whether the causal relationship between symbolic social network ties and cooperative collective action that was found in Study 1 holds in a real world context by seeing if greater entitativity is associated with greater cooperative collective action in small towns. I do this by assessing how variations in each of the criteria of entitativity—boundedness, membership-based interaction, and corporate actor capacity—relate to community involvement. In addition, I assess the relationship between the criteria of entitativity and
the social identity mechanisms hypothesized to promote cooperation: concern for the outcomes of the group and expectations of reciprocity within the group. Further, Study 2 builds on Study 1 by extending research on symbolic social network ties and cooperative collective action to include community involvement in addition to generalized exchange.

I study the relationship between symbolic social network ties and community involvement in small towns, I use data from an extensive survey of nearly 10,000 residents living in 99 small towns in Iowa. In Chapter 2 I argued that the strength of symbolic social network ties can be measured according to variations in entitativity. Here, to assess whether symbolic social network ties are positively associated with greater community involvement, I examine how variations in each of the three criteria of entitativity relate to resident participation in two broad types of community involvement: membership in local community organizations, such as the Kiwanis Club or Parent Teacher Association, and volunteering for community improvement activities, such as participating in a community-wide spring cleanup or donating food to the local food bank. I find that greater entitativity is associated with greater participation in both forms of community involvement, but the effects are limited to the criteria of boundedness and interaction. In addition, I find that membership-based interaction and corporate actor capacity (but not boundedness) are positively associated with the two mechanisms through which social identity is hypothesized to motivate cooperation: concern for group outcomes and expectations of reciprocity within the group. Interestingly, however, these mechanisms are not found to mediate the relationship between entitativity and community involvement. My findings suggest the criteria of entitativity have a complex relationship with cooperative collective action.
Community Involvement

I define community involvement as taking voluntary and unpaid action on behalf of community interests. Such actions take many forms, such as pitching in to help build a park shelter, chaperoning a school dance, being an active member of the local Kiwanis club, or simply donating a few canned goods to the local food bank. For my purposes, I distinguish two broad types of community involvement: active membership in local community groups working toward community betterment (e.g., Chamber of Commerce, Rotary Club) and voluntary participation in local activities and improvement projects (e.g., cleaning up after a community festival, planting trees in a local park).

When residents participate in community organizations and projects, the process and its outcomes benefit both the community at large and individual inhabitants. The process of community involvement serves to build social capital at the community and individual levels by fostering and maintaining interactive network ties within the community (Putnam 2000; Wilson and Musick 2008). At the community-level, social capital is positively associated with a number of social benefits, such as safer streets (Beyerlein and Hipp 2005; Sampson Raudenbush, and Earls 1997), more effective local governance (Putnam 1993; Rice 2001), and enhanced local economy (Casey and Christ 2005; Flora, Sharp, Flora, and Newlon 1997). Individual-level social capital benefits include better physical and mental health (Gundelach and Kreiner 2004; Lochner, Kawachi, Brennan, and Buka 2003; Ziersch et al. 2005) and better job prospects (Wilson and Musick 2008). Volunteering may further enhance mental health by improving one’s self-concept (Midlarsky and Kahana 1994; Wilson and Musick 2008), including feeling good about helping others (Wuthnow 1991), feeling a sense of self-efficacy by making a
difference to others (Midlarsky 1991), and feeling morally superior to non-volunteers (Clark 1987). The process of volunteering further benefits individual residents by providing opportunities to develop human capital, such as marketable job skills (Wilson and Musick 2008; Verba, Schlozman, and Brady 1995).

The outcomes of community involvement also contribute to the collective good of the community by facilitating the accomplishment of community goals, such as the provision of amenities and the maintenance of local infrastructure. Community involvement plays a vital role in the pursuit of community objectives; the ability for a community to meet its residents’ needs often depends on the active participation of residents, such as volunteer firefighters putting out fires (Perkins 1987), Little League coaches teaching children values such as teamwork and sportsmanship (Fine 1987), local volunteers working toward recovery after a disaster (Rossé 1993), and conservationists working to preserve the local habitat (O’Brien, Townsend, and Ebden 2010). Local projects may benefit the community in general, such as well-kept streets or a community-wide festival, or may benefit particular residents, such as a new playground for local children or a meal delivery program for home-bound elderly residents. This study focuses on community involvement in small towns, where resident participation may be especially crucial—a larger proportion of residents may be needed to accomplish a project and a smaller tax base means there may be less public money to fund local projects.

The Collective Action Problem

In spite of its value to the community and its residents, motivating community involvement can be problematic. At the heart of the issue is the collective action
problem. Collective action requires a combination of mutual interests and potential benefits from coordinating action with others (Marwell and Oliver 1993). Mutual interests and shared benefits create a situation where it is possible to free ride, i.e., partake of benefits without contributing to them. There is a rational temptation to free ride by allowing others to work together to achieve these benefits while avoiding the cost of contributing (Olson 1965). If everyone decided to free-ride, however, the goals of collective action would not be achieved and no one would benefit. Cooperative collective action is thus a social dilemma, where individuals have a rational self-interest to not contribute, and this individual interest conflicts with the collective interest of producing the desired mutual benefit.

Another issue is that Americans are plagued by a lack of free time. Lack of free time is the most frequently cited barrier to being more involved in the local community (Wilson and Musick 2008). Americans are busy with work, family responsibilities, and commuting, all of which reduce time available for volunteer work (Gallagher 1994; Putnam 2000; Wilson and Musick 2008). For the busy individual, a lack of free time raises the cost of community involvement—thus increasing the temptation to free-ride.

**Motivating Community Involvement: Symbolic Social Network Ties**

Motivations for being involved in the community are complex, ranging from individual personality traits (e.g., trustingness, empathy) to characteristics of the community, such as high unemployment or high residential turnover (Smith 1994; Verba, Schlozman, and Brady 1995; Wilson and Musick 2008). In this study, I examine the potential for symbolic social network ties—a community characteristic—to motivate community involvement. In the experimental study presented in Chapter 3, I found
symbolic social network ties motivated cooperation in generalized exchange, another form of cooperative collective action. As outlined below, I anticipate they will also be positively associated with community involvement.

The consequences of symbolic social network ties are a result of the combined effects of social identity and entitativity. The temptation to free ride involved in community involvement may be overcome by social identity, which has been found to encourage cooperation in social dilemma situations (e.g., Anthony 2005; Simpson 2006; Yamagishi and Kiyonari 2000). Two social identity-based mechanisms promote ingroup cooperation: 1) expectations of mutual cooperation from fellow entity members (e.g., Yamagishi and Kiyonari 2000) and 2) concern for fellow entity members (e.g., Tajfel et al. 1971; Simpson 2006). These effects are boosted by the presence of entitativity, which has been found to enhance individual-level social identity (e.g., Ellemers, Kortekaas, and Ouwerkerk 1999; Lickel et al. 2000). This leads me to predict that entitativity and its criteria—boundedness, interaction, and corporate actor capacity—will be associated with greater expectations that fellow residents will cooperate and greater concern for community outcomes and the outcomes of fellow residents.

Operating through these two mechanisms, symbolic social network ties have the power to overcome the free-rider problem and promote greater cooperation in community involvement. Two issues contribute to free-riding in social dilemmas: greed and fear (Coombs 1973; Yamagishi and Sato 1986). Greed motivates free-riding through the desire to obtain the best possible outcome for oneself by reaping rewards while avoiding costs (Coombs 1973; Yamagishi and Sato 1986). Greed may be tempered by the capacity of social identity to engender concern for the outcomes of the group and its members.
Group concern encourages individuals to place group interests ahead of individual interests (e.g., Tajfel et al. 1971), thus promoting greater cooperation in collective action activities. The fear barrier to cooperation has two components. The first component is the fear that others will exploit one’s cooperation by free-riding. Social identity should alleviate this lack of trust in others by engendering the expectation that the group facilitates cooperation and thus one’s cooperation will be reciprocated (Yamagishi and Mifune 2008; Yamagishi and Kiyonari 2000). A second component to the fear barrier is the feeling that cooperating would be fruitless because if others fail to cooperate then one’s cooperation will be ineffectual (Yamigishi and Sato 1986). This is in line with Marwell and Oliver’s (1993) theory of the critical mass in collective action. They argue that individuals are more likely to be mobilized for collective action if they believe the project is likely to be successful—and a vital part of this belief is that the group is efficacious. An actor’s belief in the efficacy of the group may be based on a number of factors, such as the previous success of the group or the group being endorsed by a trusted other. The most important factor, however, is the group’s access to the resources needed to accomplish the task, including sufficient manpower. Expectations that others will also cooperate should enhance the perceived efficacy of the group’s collective action efforts by engendering confidence that enough people will cooperate to achieve the desired goal.

By engendering concern for others and the expectation that others will cooperate, I predict stronger symbolic social network ties will be associated with greater community involvement, including voluntary participation in local improvement projects and active membership in local community groups. This association will vary with entitativity,
which, as argued in Chapter 2, impacts the strength of symbolic social network ties. The relationship between entitativity and community involvement will be mediated through the mechanisms of enhanced expectations for cooperation and concern for fellow community members, with entitativity having both a direct and indirect effect on community involvement. My theoretical model is presented in Figure 1. In the following section, I discuss the criteria of entitativity in the context of communities and how they will be related to community involvement.

**Entitativity and Community Involvement**

Symbolic social network ties exist in collectivities meeting the three criteria of entitativity: boundedness, membership-based interaction, and the capacity to act as a corporate actor. Each of these criteria varies from collectivity to collectivity, situating the entity somewhere along the entitativity continuum, which ranges from aggregates of disparate individuals at one end (e.g., customers in line at the bank) to tightly bound, highly interactive, well-coordinated groups on the other end (e.g., college fraternities). I suspect communities in general have a moderate degree of entitativity, likely falling somewhere in the middle-range of the entitativity continuum. Each community,
however, can be located separately along the continuum based on the extent to which each of the three criteria varies within that community. Below, I define each criterion in the context of communities of place, outline how each varies from community to community, and discuss how each will impact community involvement.

**Boundedness**

A community of place is bounded by the demarcated town limits, which distinguish what is part of the community (e.g., residents, businesses, and buildings) from what is not part of the community. Boundedness in communities fluctuates by the duration, clarity, changeability, and permeability of community boundaries, and by residential stability. Town limits typically do not vary by duration—once founded, most communities exist on a relatively permanent basis, with communities in America rarely being disincorporated. Community boundaries may lack clarity to some degree; in rural communities, many people who live outside town boarders (e.g., on farms or acreages) may also feel a sense of belonging to the community. Small town boundaries, therefore, may better reflect resident sentiment when defined by telephone prefix or zip code distributions, which typically include people living outside town boarders. Town limits may be changeable, which most often occurs through annexation of additional land. Annexation may not represent a substantive change in community boundaries, however, as annexed land would most likely fall within telephone prefix or zip code boundaries. The permeability of town boundaries varies by how easy or difficult it is to move into and out of the town. Most small towns have relatively permeable boundaries, though this can vary due to factors such as the availability of suitable housing, housing prices, and the availability of employment in the town.
As other aspects of boundaries tend to be more fixed, boundaries in small towns fluctuate the most by *residential stability*, which is the extent to which residential membership is in flux. Residential stability is a matter of in-out migration defined by residents moving in and out of the community. Residential stability accounts for community boundaries as they are both spatially and socially determined. Spatial boundaries are defined by the demarcated town limits, which, as noted, can be defined by official city limits or in other ways such as zip-code or phone prefix areas. Residential stability is socially determined by the flow of residents into and out of these spatial boundaries as residents choose to move in, move out, or stay put.

Because all communities are characterized by some degree of in-out migration, I use residential stability to measure community boundedness in this study. The extent of resident flow in and out of the community can play a role in various aspects of the community experience, such as the extent to which residents know one another and the trust they feel for fellow residents. In-out migration rates are also reflective of community outcomes, such as the extent to which residents’ needs are being met in the community and the extent to which residents are attached to the community. Previous work indicates that greater residential stability encourages community attachment, social ties within the community, and resident participation in local civic groups (Sampson 1988, 1991; Flaherty and Brown 2010). I predict greater residential stability (i.e., greater boundedness) in a community will be associated with greater community involvement, including more frequent participation in community improvement activities and belonging to a greater number of local civic organizations.
Membership-Based Interaction

Membership-based interaction in a community may take many forms, from working together at a local company to attending a local high school football game. Here I focus on informal interaction aimed at enjoying the pleasure of the company of fellow residents, such as socializing at a town festival or simply chatting with a neighbor at the local grocery store. Informal socializing in communities and neighborhoods has been found to be associated with higher ratings of community success by residents (Whitham 2012), lower crime rates (Bellair 1997), greater feelings of safety (Clampet-Lundquist 2010), and—most relevant here—greater civic engagement (Putnam 2000). Greater informal socializing among community members also furnishes the benefits of social capital, including information flow, opportunities for the formation and enforcement of norms, and trust (Coleman 1988; Putnam 1993, 2000). Membership-based interaction in a community can vary by the frequency with which residents interact, the intensity of the interaction, and the proportion of residents who interact. I measure informal socializing by looking at the proportion of residents who informally socialize at various gathering places (e.g., restaurants, community centers, bowling alleys) on at least a weekly basis. I predict that a greater proportion of residents who interact with at least this minimum frequency will be positively associated with greater community involvement, including more frequent participation in community improvement activities and belonging to a greater number of local civic organizations.

Corporate Actor Capacity

Corporate actor capacity is the ability to act as a single social unit that exists separate from and beyond the individuals comprising the entity. This is distinct from
collective action; corporate actor capacity is the ability to act as a manifest social actor in relation to other (individual or corporate) actors, while collective action is two or more individuals working together to accomplish a goal, such as most community involvement projects (e.g., building a park shelter, organizing a town festival). Corporate actors can interact with other (individual or corporate) actors. A town may interact with other corporate actors such as other towns, the state, or a corporation, as well as with individual actors, such as a resident or a politician. Acting as a corporate actor is often handled through leaders (e.g., the town mayor, the city council) who make decisions regarding the entity and represent the entity in relations with other entities. Acting as a corporate actor could also involve the aggregation of the actions of some or all members of the entity, such as voting to reach an entity-wide decision (e.g., residents voting to determine whether to raise the local sales tax).

The ability to act and be acted upon as a manifest corporate actor varies across communities as a consequence of variations in the frequency with which the community exercises its capability to act, variations in divisiveness among residents regarding community-wide decisions (i.e., factional local politics), and variations in leadership, including the formalization of local government, the capability of local leaders, the availability of sufficient staff for leadership positions, and the extent to which community members support local leaders and their decisions. In this study, I focus on variations in the divisiveness of local politics. Though little research has examined the impact of divisiveness in community politics, greater divisiveness in political arenas can lead to gridlock and policy inaction (Binder 2003; Jones 2001), effectively reducing corporate actor capacity. Building on these findings, I predict that less divisiveness will be
associated with greater community involvement, including more frequent participation in community improvement activities and belonging to a greater number of local civic organizations.

Methods

Data and Participants

Most of the data for this study are from the 2004 Iowa Rural Development Initiative Project,\textsuperscript{15} which involved an extensive survey of Iowa’s small towns. The survey focused on community quality of life, the local social environment, and community involvement. One community from each of Iowa’s 99 counties was selected from a sampling frame of incorporated municipalities that were nonadjacent to a metropolitan area (i.e., free-standing, nonsuburban communities) with a population of more than 500 but fewer than 10,000 persons. Using a systematic selection process, 150 households were selected from the telephone directory of the incorporated municipality.\textsuperscript{16} For each household, an individual household head or co-head was randomly chosen by gender and asked in a letter accompanying the survey to complete the questionnaire.\textsuperscript{17} Of the 14,850 selected households, 9,962 residents responded for an overall response rate of 67 percent. Community response rates ranged from 47 percent to 81 percent, with between 70 and 121 respondents from each municipality for an average of 101 responses per community.

\textsuperscript{15} The Iowa Rural Development Initiative Project was supported by a 2003 grant from the National Research Initiative, USDA, entitled Response to Shocks: A Longitudinal Study of Rural Communities’ Quality of Life. Principal investigators are Terry L. Besser, Vernon D. Ryan, and Kerry A. Agnitsch.

\textsuperscript{16} Town boundaries were thus defined by telephone prefix, arguably a more accurate reflection of resident sentiment of the boundaries defining who is part of (and not part of) the community.

\textsuperscript{17} Instructions requested that if there was no head/co-head of the selected gender present that a head/co-head of the opposite gender please fill out the survey.
Communities

The mean population of the selected communities was 1,879 persons (U.S. Census Bureau 2000). Slightly over half (56%) had a population of less than 1,200 persons, while only 8 percent have more than 5,000 residents. Nearly half (49%) are located more than 60 miles from a metro area, with the farthest distance being 131 miles. Twenty-one of the selected communities are county seats.

Residents

Comparisons with 2000 census data suggest respondents are representative of the population of Iowa’s small towns (Besser et al. 2008). Most respondents are homeowners (84%) living within city limits (70%). The mean age is nearly 57 years, and over half (53%) of respondents have lived in their community for 30 years or longer. There are slightly more female respondents (55%) than male respondents. The majority (69%) are married. Most respondents are White (98%). Nearly two-thirds (60%) are employed full-time or part-time, and of these almost half (47%) commute to another community to work. Only 2 percent report being unemployed. The vast majority has graduated from high school (90%) and a slight majority has at least some college education (52%).

Independent Variables

Boundedness: Residential Stability

Variable descriptions and descriptive statistics are shown in Table 4.1. Because community boundedness varies the most by residential stability, I measure boundedness according to the flow of residents into and out of community boundaries. I use Flaherty and Brown’s (2010) residential stability variable, which provides an estimate of the level
of in-out migration in the community by measuring the average proportion of residents’ lives spent living in the community. The variable was calculated in two steps. First, an individual-level length of residence variable was calculated as the number of years the respondent reported living in the community divided by her age. This individual-level variable was then aggregated to the community-level by calculating the community mean.

**Membership-Based Interaction: Socializing Network Density**

I measure membership-based interaction in the community as the extent of informal socializing residents reported doing in the community. Specifically, I calculated a network density score using data on the frequency with which residents co-socialized in local gathering places, such as restaurants, parks, and shopping centers. A community’s informal socializing network consists of ties between residents formed through mutual socializing in the same gathering place, such as a connection between two residents who socialize at a local restaurant (Whitham 2012).

Measuring the *socializing network density* in a community involves calculating the proportion of the number of actual ties that exist in the informal social network to the number of ties that could possibly exist in the network (Wasserman and Faust 1994). Residents were asked to report how frequently they “socialize or visit with others” in a variety of types of gathering places: food centers, bars/lounges, city parks, bowling alleys, town square or downtown area, malls, community centers, and golf or country
Table 4.1. Variable Descriptions and Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Memberships…</td>
<td>Total number of local groups to which residents reported belonging.</td>
<td>1.52</td>
<td>1.66</td>
<td>0, 12</td>
<td>9,095</td>
</tr>
<tr>
<td>Voluntary Participation…</td>
<td>“How many times in the past 12 months have you participated in a [town name] improvement project such as a volunteer project or a fund-raising effort?” 1 = none, 2 = once, 3 = twice, 4 = 3-4 times, 5 = 5-9 times, 6 = 10 or more times.</td>
<td>2.29</td>
<td>1.50</td>
<td>1, 6</td>
<td>9,887</td>
</tr>
<tr>
<td><strong>Mediating Variables:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectations……………………………</td>
<td>“Because of a water shortage, residents are asked to voluntarily stop watering lawns and gardens. Would you say most, about half, or only a few [town name] residents would volunteer their assistance.” 1 = most, 0 = about half or few.</td>
<td>.52</td>
<td>.50</td>
<td>0, 1</td>
<td>9,776</td>
</tr>
<tr>
<td>Concern…………………………………………</td>
<td>“How interested are you in knowing what goes on in [town name]?” 1 = very interested or somewhat interested, 0 otherwise.</td>
<td>.45</td>
<td>.50</td>
<td>0, 1</td>
<td>9,903</td>
</tr>
<tr>
<td><strong>Level 1 Control Variables:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of Residence..........................</td>
<td>Years reported residing in the community.</td>
<td>33.15</td>
<td>22.48</td>
<td>1, 107</td>
<td>9,740</td>
</tr>
<tr>
<td>Age...........................................</td>
<td>Age as of last birthday.</td>
<td>56.69</td>
<td>17.23</td>
<td>17, 107</td>
<td>9,846</td>
</tr>
<tr>
<td>Education.....................................</td>
<td>1=Less than 9th grade; 2=9th to 12th grade; 3=high school diploma; 4=some college; 5= associates; 6=bachelor’s; graduate or professional degree.</td>
<td>3.96</td>
<td>1.51</td>
<td>1, 7</td>
<td>9,878</td>
</tr>
<tr>
<td>Income.......................................</td>
<td>1=$9,999 or less; 2=$10,000-$19,999; 3=$20,000-$29,999; 4=$30,000-$39,999; 5=$40,000-$49,999; 6=$50,000-$64,999; 7=$65,000-$74,999; 8=$75,000 or more.</td>
<td>4.42</td>
<td>2.11</td>
<td>1, 8</td>
<td>8,905</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
<td>Mean</td>
<td>SD</td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Female</td>
<td>Female = 1, Male = 0.</td>
<td>.55</td>
<td>.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Married</td>
<td>Married = 1, 0 otherwise.</td>
<td>.69</td>
<td>.46</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Children</td>
<td>Number of children under 18 residing in the household.</td>
<td>.56</td>
<td>1.01</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Own</td>
<td>Own = 1, rent or “other arrangement” = 0.</td>
<td>.87</td>
<td>.34</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Full-time</td>
<td>Employed full time = 1, 0 otherwise.</td>
<td>.48</td>
<td>.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Level 2 Independent Variables:</strong></td>
<td>Measure of Entitativity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Stability</td>
<td>Community mean of the number of years respondent reported living in the community divided by her age.</td>
<td>.57</td>
<td>.08</td>
<td>.30</td>
<td>.74</td>
</tr>
<tr>
<td>Socializing Network Density..</td>
<td>Percentage of residents tied to one another through socializing in the same types of local gathering places.</td>
<td>5.17</td>
<td>2.57</td>
<td>.02</td>
<td>12.86</td>
</tr>
<tr>
<td>Divisiveness in Local Politics.</td>
<td>“When it comes to local politics, do the people of [town name] tend to agree on the issues or are there often two or more groups with different ideas about the issues?” 0 = “people tend to agree”, 1 = “two or more groups are common.” Responses aggregated to community mean.</td>
<td>.75</td>
<td>.10</td>
<td>.47</td>
<td>.94</td>
</tr>
<tr>
<td><strong>Control Variable:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(In) Population</td>
<td>Natural log of the community’s population according to 2000 US Census.</td>
<td>7.18</td>
<td>.78</td>
<td>6.21</td>
<td>9.24</td>
</tr>
</tbody>
</table>

Note.—Level 2 descriptive statistics are based on community-level data.
Response options included daily, weekly, monthly or less, or never. There was also an option of “no such place” if there were no gathering places of that type in the community. In the calculation of each community’s score, I excluded any type of gathering place which more than 20 percent of residents reported did not exist in the community (e.g., few small towns have a mall to socialize in).

To transform this data into a measure of informal socializing network density, I used a network analysis procedure consisting of several steps. I first recoded responses into a binary measurement: daily and weekly responses were assigned a value of 1 and all other responses were assigned a value of 0. The codes were then placed into two-mode case-by-affiliation matrices for each community, describing which residents (cases) frequented which types of gathering places (affiliations) (Breiger 1974; Wasserman and Faust 1994). Next, to assess ties between residents, the case-by-affiliation matrices were converted into one-mode, case-by-case matrices using UCINET software (Borgatti et al. 1999). The diagonals of each matrix were eliminated because they represent a simple count of the number of types of gathering places frequented by individual residents. The values in the remaining cells indicate the number of types of gathering places co-frequented by the two residents corresponding to that cell. Cell values were divided by the number of types of gathering places present in the town and the proportion in each cell was then averaged across the community, with the resulting score indicating the proportion of residents who were connected to one another by virtue of socializing in the

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18 The data are limited to types of gathering places rather than specific gathering places. Cornwell and Harrison (2004) use a similar measure in their study of union membership and organizational embeddedness, arguing that it allows a picture of the structure of interorganizational culture. In a similar vein, I argue that while not perfect, this measure allows a picture of the extent of informal socializing in local gathering places.
same types of local gathering places. Scores were then multiplied by 100 to transform them into a percentage. Scores ranged from 0.00 to 0.13, with higher scores indicating more informal ties between residents.

Though complex, this measure is ideal because it takes into account two important ways that interaction varies across communities: the proportion of residents who interact and the frequency of their interaction. Density is inherently a proportional measure and the frequency of resident interaction is accounted for by limiting the measure to only include daily or weekly socializing. Further, this measure is ideal because it is not conflated with community involvement; it is limited to informal socializing in local spaces and thus does not include interaction through volunteering or organizational memberships.

**Corporate Actor Capacity: Divisiveness in Local Politics**

Corporate actor capacity varies in communities by *divisiveness in local politics*. This is measured with the following question: “When it comes to local politics, do the people of [town name] tend to agree on the issues or are there often two or more groups with different ideas about the issues?” Response options were “people tend to agree” or “two or more groups are common.” The variable was recoded into a binary variable with 1 representing divisiveness (“two or more groups are common”) and 0 representing non-divisiveness (“people tend to agree”). To assess this at the community-level, responses were aggregated to the community mean.

**Control Variables**

At the individual level, I statistically control for the effects of length of residence in the community (tenure), age, education, income, gender, marital status, number of
children living in the household, homeownership, and employment status, all of which have been found to be factors impacting community volunteerism (Brady, Verba, Schlozman 1995; Liu and Besser 2003; Rotolo 2000; Rotolo, Wilson, and Hughes 2010; Verba, Schlozman, and Brady 1995; Wilson and Musick 1997, 2008). At the community level, I statistically control for population size as measured by the 2000 US Census. Towns with a bigger population likely have more groups available to join and more community improvement projects available to participate in. On the flip side, in smaller towns there is less diffusion of responsibility for getting things done; residents in smaller towns may have to belong to more groups and participate in more projects to achieve community goals. Because the distribution of population size is skewed, I use a natural log transformation.

**Mediating Variables: Expectations and Concern**

*Expectations* for cooperation within the community are measured using a question asking residents the extent to which they felt their fellow residents would cooperate in a commons dilemma. Specifically, they were asked “Because of a water shortage, residents are asked to voluntarily stop watering lawns and gardens. Would you say most, about half, or only a few [town name] residents would volunteer their assistance.” Responses were recoded into a binary measurement with responses of “most” coded as 1 and responses of “about half” and “few” coded as 0. This variable measures expectations of reciprocity by assessing the extent to which residents believe the group is characterized by mutual cooperation.

To assess *concern* for fellow residents, I use responses to the question “How interested are you in knowing what goes on in [town name]?” Responses ranged from
very interested to not interested, which were recoded into a binary variable with “very interested” and “somewhat interested” assigned a value of 1 and all other values assigned a value of 0. This variable provides an assessment of the extent to which respondents are concerned about what goes on in the community.

Dependent Variables: Voluntary Participation and Organizational Memberships

*Voluntary participation* is measured using the following question: “How many times in the past 12 months have you participated in a [town name] improvement project such as a volunteer project or a fund-raising effort?” Response options include none, once, twice, 3-4 times, 5-9 times, or 10 or more times. Number of local *organizational memberships* is a simple count of the total number of community-based organizations and groups of which residents reported being active members.

Results

To assess my predictions I ran a series of hierarchical generalized linear models, with individual residents at level 1 and communities at level 2. First, I ran two multilevel logistic regression models to test whether the criteria of entitativity impact expectations and concern. For both models I included population size as a control variable, as it might influence the extent to which residents expect mutual cooperation and are concerned about the community. I predicted that the criteria of entitativity—boundedness, interaction, and corporate actor capacity—would enhance both expectations of cooperation and concern for community and resident outcomes.

19 All models were run using the *gllamm* command in Stata.
20 I performed various diagnostic tests to check for conformity to regression assumptions. Variance-inflation factor values range from 1.03 to 2.54, indicating collinearity is not an issue in any of the regression models. Correlations are shown in appendix tables A1 and A2.
As presented in Table 4.2, my results largely support this prediction. Informal socializing in the community appears to have a positive effect on expectations for cooperation within the community and concern about community outcomes: for each one point increase in informal socializing density there is an associated 11 (= 100[e^{10} – 1]) percent increase in the odds$^{21}$ of expecting cooperative behavior within the community and a 13 (= 100[e^{12} – 1]) percent increase in the odds of being more concerned about what goes on in the community. As predicted, divisiveness in local politics (i.e., reduced corporate actor capacity) appears to have a negative impact on concern and expectations: for each one point increase in divisiveness, there is an associated 70 (= 100[e^{-1.22} – 1]) percent decrease in the odds of having expectations for cooperation and 83 (= 100[e^{-1.76} – 1]) percent decrease in the odds of reporting concern about what goes on in the community. Residential stability (i.e., boundedness), however, was not statistically significantly associated with either concern about community outcomes or expectations for cooperation within the community. These findings indicate that the mechanisms through which social identity is expected to enhance cooperation—expectations and concern—are associated with two of my three indicators of entitativity, suggesting cooperation should be greater in communities with greater entitativity.

To assess the impact of symbolic social network ties on cooperative collective action in communities, I ran a series of multi-level regression models testing the relationship between the criteria of entitativity and organizational memberships and voluntary participation. Results are presented in Table 4.3. Consistent with predictions,

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$^{21}$ Calculating the percentage change in the odds (of observing a positive outcome versus a negative outcome) provides an intuitive interpretation of logistic regression models. This is done by exponentiating the log odds coefficient, subtracting 1, and multiplying by 100.
Table 4.2. Multilevel Logistic Regression of Expectations and Concern on Criteria of Entitativity and Control Variables

<table>
<thead>
<tr>
<th>Level 1 Control Variables:</th>
<th>Expectations (N = 9,776)</th>
<th>Concern (N = 9,903)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of Residence</td>
<td>.00**</td>
<td>.00***</td>
</tr>
<tr>
<td>Age</td>
<td>.01***</td>
<td>.01**</td>
</tr>
<tr>
<td>Education</td>
<td>.00</td>
<td>.05**</td>
</tr>
<tr>
<td>Income</td>
<td>.05***</td>
<td>.05***</td>
</tr>
<tr>
<td>Female</td>
<td>-.06</td>
<td>.19***</td>
</tr>
<tr>
<td>Married</td>
<td>-.03</td>
<td>.08</td>
</tr>
<tr>
<td>Children</td>
<td>-.02</td>
<td>-.01</td>
</tr>
<tr>
<td>Own</td>
<td>.14</td>
<td>.04</td>
</tr>
<tr>
<td>Full-time</td>
<td>-.04</td>
<td>-.03</td>
</tr>
</tbody>
</table>

Level 2:

*Measures of Entitativity:*

| Residential Stability      | .72                      | -.94                |
| Socializing Network Density| .10***                   | .12**               |
| Divisiveness in Local Politics | -1.22**        | -1.76***            |

*Control Variable:*

| (Ln)Population              | -.12**                   | -.06                |
| Log likelihood              | 5160.27                   | 1852.79             |
| BIC                        | 10394.06                  | 12070.62            |
| Level 1 R²                  | .13                      | .09                 |
| Level 2 R²                  | .40                      | .25                 |
| ICC                        | .19                      | .25                 |
residential stability (i.e., boundedness) is positively associated with both forms of community involvement, as is informal socializing in the community: for every one point increment in residential stability, number of organizational memberships increase, on average, by about 1.5 groups and the odds of reporting greater voluntary participation rather than less voluntary participation increase by about 263 (= 100\(e^{1.29} - 1\)) percent; for every one point increment in socializing network density, number of organizational memberships increase, on average, by about .05 groups and the odds of reporting greater voluntary participation rather than less voluntary participation increase by about 5 (=100\(e^{0.05} - 1\)) percent. Divisiveness in local politics, however, is not statistically significantly associated with either form of involvement. The lack of a statistically significant relationship between community involvement and divisiveness makes some intuitive sense—it is possible that divisiveness drives some residents to participate more and others to participate less. For some, fractious local politics might turn them off from being more involved in the community, such as residents who prefer to avoid confrontation and contention. On the other hand, some residents might be more interested in participating in the face of fractional politics so that they can have their own impact on potentially contentious local outcomes.

Most of the control variables relate to community involvement in the way previous studies would suggest. Years of residence, age, education, income, being female, having children at home, and homeownership all have a positive relationship with
**Table 4.3.** Multilevel Regression/Ordinal Regression of Community Involvement on Criteria of Entitativity and Control Variables

<table>
<thead>
<tr>
<th></th>
<th>Organizational Memberships</th>
<th>Voluntary Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1 (N=7,965)</td>
<td>Model 2 (N=7,837)</td>
</tr>
<tr>
<td></td>
<td>Model 3 (N=8,546)</td>
<td>Model 4 (N=8,407)</td>
</tr>
<tr>
<td><strong>Level 1:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mediating Variables:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expectations</td>
<td>.19***</td>
<td>.19***</td>
</tr>
<tr>
<td>Concern</td>
<td>.80***</td>
<td>1.52***</td>
</tr>
<tr>
<td>Control Variables:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of residence</td>
<td>.01***</td>
<td>.01***</td>
</tr>
<tr>
<td>Age</td>
<td>.02***</td>
<td>.01**</td>
</tr>
<tr>
<td>Education</td>
<td>.24***</td>
<td>.24***</td>
</tr>
<tr>
<td>Income</td>
<td>.10***</td>
<td>.09***</td>
</tr>
<tr>
<td>Female</td>
<td>.21***</td>
<td>.20***</td>
</tr>
<tr>
<td>Married</td>
<td>.07</td>
<td>.24***</td>
</tr>
<tr>
<td>Children</td>
<td>.20***</td>
<td>.18***</td>
</tr>
<tr>
<td>Own</td>
<td>.18***</td>
<td>.26***</td>
</tr>
<tr>
<td>Full-time</td>
<td>-.11*</td>
<td>.01</td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level 2:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measures of Entitativity:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Stability</td>
<td>1.60***</td>
<td>1.51***</td>
</tr>
<tr>
<td>Soc. Network Density</td>
<td>.06***</td>
<td>.05***</td>
</tr>
<tr>
<td>Divisiveness</td>
<td>-.20</td>
<td>-.03</td>
</tr>
</tbody>
</table>

**Notes:**

- *p < .05
- **p < .01
- ***p < .001
Control Variable:

<table>
<thead>
<tr>
<th></th>
<th>(ln)Population</th>
<th>Logistic likelihood</th>
<th>BIC</th>
<th>Level 1 R²</th>
<th>Level 2 R²</th>
<th>ICC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.17***</td>
<td>.16***</td>
<td>-.05</td>
<td>-.09*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-14799.42</td>
<td>-14490.09</td>
<td>-12399.07</td>
<td>-12069.54</td>
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<tr>
<td>BIC</td>
<td>29672.36</td>
<td>29062.89</td>
<td>24885.45</td>
<td>24235.58</td>
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<td></td>
</tr>
<tr>
<td>Level 1 R²</td>
<td>.12</td>
<td>.14</td>
<td>.08</td>
<td>.10</td>
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<td></td>
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<tr>
<td>Level 2 R²</td>
<td>.68</td>
<td>.72</td>
<td>.40</td>
<td>.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICC</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
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</tbody>
</table>

Note. — Coefficients are logged odds. Organizational memberships are estimated using multilevel regression. Voluntary participation is estimated using multilevel ordinal logistic regression. BIC = Bayesian Information Criterion. R² calculated as proportional reduction in prediction error (Snijders and Bosker 1994, 1999). * P ≤ .05 (two-tailed test), ** P ≤ .01 (two-tailed test), *** P ≤ .001 (two-tailed test)

both forms of community involvement. Being married appears to have no relationship with number of group memberships, but it is positively related to voluntary participation in the community. Working full-time appears to have no relationship with voluntary participation in the community. For some residents, working full-time may reduce voluntary participation because it limits their available free time. For other residents, however, full-time work may potentially increase volunteering. Employed people are likely to have a larger circle of acquaintances who may request their assistance on a project and may possess greater human capital that could be applied to a project. Further, some employers give incentives to employees who volunteer their time. Full-time work does, however, have a negative impact on the number of community organizations to which an individual reports belonging. Membership in local organizations may involve a greater time commitment than voluntary participation on a local project, so the time
crunch experienced by full-time workers may be more likely to reduce this form of community involvement.

The data fail to support the hypothesized social identity mechanisms—concern and expectations—that have been suggested in the social identity literature. To test mediation effects, Models 2 and 4 include the mediating variables measuring expectations and concern for comparison with Models 1 and 3 which do not include the mediating variables. This gives some indication of the extent to which these two mechanisms mediate the effects of entitativity. As Table 4.3 shows, the models are quite similar; the coefficients for each of the entitativity variables are only slightly lower in the models including the hypothesized mechanisms. Though this to some extent suggests expectations and concern may serve to mediate the relationship between symbolic social network ties and cooperative collective action in communities, the evidence is far from convincing.

**Discussion and Conclusion**

Results of the survey analysis indicate that two of the three indicators of entitativity are positively related to community involvement. Although generally supportive of the conclusion that the causal results from Study 1 hold in the context of communities and for another form of cooperative collective action (i.e., community involvement), these findings indicate that the criteria of entitativity differentially impact cooperative collective action. Although variations in boundedness and membership-based interaction are positively related to community involvement, corporate actor capacity as measured here is not. Perceived divisiveness in local politics is not significantly related to either form of community involvement. This suggests the
relationship between divisiveness in local politics and cooperative collective action may be complex. Divisiveness may have conflicting effects on residents’ participation in the community—some residents may wish to avoid participation in a contentious community, while others will be more interested in participating in order to have an influence over outcomes. Finding no relationship between divisiveness in local politics and community involvement also suggests that divisiveness in local politics may not be the best measure of the strength of an entity’s corporate actor capacity. Corporate actor capacity also varies by the effectiveness of entity leadership, such as the capability of local leaders, as well as the frequency with which the entity exercises its corporate actor capacity. Future research should assess the effects of these other aspects of corporate actor capacity on cooperative collective action.

In addition, findings suggest that the impact of symbolic social network ties on cooperation may not be explained by the traditional mechanisms through which social identity is hypothesized to motivate greater cooperation. I found very little evidence of an indirect effect of entitativity on community involvement through the mechanisms of concern for fellow group members and expectations of cooperation within the group. Only interaction and divisiveness—not residential stability—were related to the measures of the two mechanisms. When controlling for these variables as potential mediators of the relationship between the criteria of entitativity and community involvement, however, the only coefficients to decline to any extent were the coefficients for residential stability—there was only a very small change in the coefficients for interaction, and divisiveness was found to have no significant effect on the dependent variables. Part of the issue may be that my measure of concern for fellow group members was less than
ideal—my measure assessed residents’ concern about what goes on in the community rather than concern about fellow residents. In combination with the lack of evidence found for these mechanisms in data from the post-experimental questionnaire (not reported in this dissertation), however, the lack of evidence found for these mechanisms in Study 2 strongly suggests additional work is needed to determine the mechanisms through which symbolic social network ties operate to motivate greater cooperative collective action. Efforts in this area could consider how the criteria of entitativity—boundedness, interaction, and corporate actor capacity—impact aspects of cooperation, such as the effect of interaction on communication or the effect of boundedness on trust.

This study and its findings are limited in several ways. As with all survey data, it is difficult to tease out the cause and the consequence. I predicted that entitativity leads to greater community involvement. The experimental study presented in Chapter 3 lends support to the causal direction predicted. It is likely, however, that there is something of a reciprocal relationship between symbolic social network ties and community involvement as well. In general, volunteering may enhance social identity. For example, Abrahams (1996) found “women’s community participation re(creates) community and identity” (768). More involvement in the community should lead to better community outcomes, which may encourage residents to stay in the community rather than move away to find their needs better met elsewhere, thus reducing in-out migration. The more people work together, the better they may get to know one another and appreciate one another’s views, thus reducing divisiveness in the community. Greater involvement may also enhance a sense of having a voice in the community, which could further boost the ability of the local government to efficiently and effectively act on behalf of the
collective, thus boosting corporate actor capacity. Finally, community involvement is a form of interaction and thus has a direct impact on that criterion. In addition, my dependent variables are not entirely independent of one another. Memberships in community organizations may impact the propensity to volunteer because it is often community organizations which spearhead community improvement projects.

The data are also limited in that they do not tell us how much time residents spent volunteering, the timing of their volunteering throughout the year, or which domains of volunteering they spent their time on (e.g., fund-raising, building efforts, event planning). All of these factors are aspects of volunteering that tend to be understudied (Wilson and Musick 2008). Another limitation is that there may be issues with the accuracy of respondents’ recall (Bernard, Killworth, Kronenfeld, and Sailer 1984). Respondents were asked to report the number of times they had volunteered within the past year. In spite of the possibility that asking about such a long timeframe might reduce the accuracy of recall, I believe the framing of the question is the best option; asking about the past week or month might improve accuracy of recall, but there may be times of the year during which there are more opportunities to volunteer or during which the respondent has more time to volunteer—asking about a full year better accounts for the seasonality of volunteering and fluctuations in the volunteer’s schedule. Further, issues with the accuracy of respondents’ recall are more likely to lead to underreporting (Wilson and Musick 2008), which may be counteracted by a positive response bias—the tendency to over-report doing something socially desirable (Edwards 1957; Wilson and Musick 2008). Finally, it is possible that the respondents of this survey are in general more likely to be involved in the community; filling out the survey is a form of volunteering and
respondents may also be more likely to volunteer in other ways. All of these issues, however, are consistent across communities, which should reduce their impact on the findings of this study.

The findings presented here might differ by population density. There are differences in patterns of volunteering in rural versus suburban or urban areas (Liu and Besser 2003; Peter, Bell, Jarnigan, and Bauer 2000; Petzelka and Mannon 2006; Wilson and Musick 2008). Rural residents, for example, have been found to volunteer more frequently than urban or suburban dwellers (Wilson and Musick 2008). Although evidence that rural residents tend to be more involved in their communities supports the argument presented here—rural communities likely fall higher on the entitativity continuum, which should be associated with greater cooperative collective action—it suggests the effects of symbolic social network ties on community involvement may differ in other types of communities of place. Future work should examine the relationship between symbolic social network ties and community involvement in other types of communities of place, such as cities, neighborhoods, and suburbs.

This study provides a contextual test of the effects of symbolic social network ties on cooperative collective action, supplementing the causal effects found in the experimental study presented in Chapter 3. An understanding of what motivates residents to actively participate in the pursuit of community goals can help us understand why some communities have more participation and others less. The findings presented here can help community and organization leaders develop strategies to promote community involvement in efforts to achieve community goals.
In the next chapter, I conclude with a discussion of the overall project. First, I summarize my theoretical argument and the two studies I use to test it. I then discuss the theoretical implications of the concept of symbolic social network ties which make it a valuable contribution to sociological thought. I also discuss the broader impacts of the project as well as its limitations. Next I suggest several directions for future research. I conclude with several cautions regarding the negative effects of symbolic social network ties.
CHAPTER 5
CONCLUSION

Summary

The primary goal of this dissertation was to present an extension of social identity theory. Social identity theory has been widely applied in the study of a variety of social phenomena and has greatly contributed to our understanding of social life. The concept, however, has remained focused on the individual. The approach was originally formulated in the tradition of psychological social psychology, and the study of social identity has been centrally concerned with examining the impact of group and category memberships on individual psychological processes (e.g., self-categorization, motivations), attitudes (e.g., stereotyping, ethnocentrism) and behaviors (e.g., outgroup derogation, ingroup favoritism).

In additions to its focus on the individual, the concept of social identity has also been limited by a tendency to not distinguish between types of social groupings (Brown et al. 1992; Deaux et al. 1995; Lickel et al. 2000), including the distinction between category-based social identity and entity-based social identity. Category-based social identity stems from meeting the criteria necessary for inclusion in a particular category, such as being female, White, unemployed, or blonde. Entity-based social identity, on the other hand, stems from membership in a bounded, interactive group with the capacity to act as a manifest corporate actor in relation to other (individual or corporate) actors. Examples of such groups include communities, sports teams, and corporations.

In this dissertation, I addressed both of these limitations by proposing a collective-level understanding of social identity as it exists in social entities. I presented my theoretical argument in Chapter 2. To extend social identity theory beyond its current
focus on the individual, I draw a distinction between social identity as it manifests internally in the individual, which is the traditional conceptualization of social identity, and social identity as it manifests externally to the individual. Social identity involves an extension of the self beyond the individual, where the *I* becomes the *we* (Brewer 1991; Turner et al. 1987). This external manifestation of social identity serves as a unifying force—a network tie—binding group members together into a collective “we” or “us.” These ties form a symbolic social network, defined as a set of ties between members of a social entity based on their shared social identity.

The conceptualization of social identity as a network tie involves bridging the concepts of groups and networks. Taking the structural social psychology approach of viewing group structure as a network (Lawler, Ridgeway, and Markovsky 1993), I propose that we can conceive of a group as being overlaid by a network structure that is composed of social identity connections. These connections are symbolic in that they are determined by group affiliation rather than behavior (i.e., interaction). Because they are affiliation-based, they connect all members of the group in a complete network.

Symbolic social network ties are social identity conceived at the collective-level. I define a collective as a social entity meeting the criteria of entitativity. Entitativity is the property of a collection of people that defines it as a coherent social unit—a social object in and of itself (Campbell 1958). I identify three criteria for entitativity: boundedness (Abbott 1995; Campbell 1958), membership-based interaction, and the capacity to act as a unified corporate actor in relation to other (individual or corporate) actors (Abbott 1995; Emerson 1972). Entities abound in social life; communities, sports teams, corporations, task groups, fraternities, and universities are all examples. All
entities exist along a continuum of entitativity. Placement on this continuum is
determined by the degree of entitativity that characterizes the entity, which in turn is
determined by variations in the criteria defining entitativity. Boundaries vary by clarity,
changeability, permeability, and duration. Membership-based interaction varies by the
frequency of interaction, the intensity of the interaction, and the proportion of members
who interact. Corporate actor capacity varies by divisiveness among entity members
(i.e., factional politics) and the effectiveness of leadership. Important social
consequences are associated with variations in entitativity—including the distinction
between categories and entities as well as distinctions between entities—and attending to
these consequences provide a more precise understanding of the social identity
experience.

As collective-level social identity, symbolic social network ties should impact
social life in various meaningful ways. In Chapters 3 and 4, I considered their impact on
cooperative collective action. Collective action involves two or more individuals
working together to achieve mutual interests (Marwell and Oliver 1993; Olson 1965).
Cooperative collective action is essential for social life, but it can be difficult to motivate
individuals to commit to a group effort.

I proposed two predictions: 1) symbolic social network ties would have a greater
impact on cooperative collective action than category-based social identity and 2) greater
entitativity in an entity on each of the three dimensions—boundedness, interaction, and
corporate actor capacity—would be associated with greater cooperative collective action.
The effects of symbolic social network ties are a consequence of the combined effects of
entitativity and social identity. Social identity has been found to motivate cooperation in
a variety of social contexts (e.g., Anthony 2005; Brewer and Kramer 1986; Lawler and Yoon 1998). Social identity has been hypothesized to enhance cooperation by engendering concern for the outcomes of the group and fellow group members (Simpson 2006; Tajfel et al. 1971) and the expectation that fellow group members will reciprocate cooperation (Yamagishi and Kiyonari 2000; Yamagishi and Mifune 2008). Symbolic social network ties combine these social identity effects with entitativity, which has been found to enhance social identity (e.g., Ellemers, Kortekaas, and Ouwerkerk 1999; Lawler and Yoon 1996; Lickel et al. 2000).

I tested my predictions with a two-study approach. Using two studies allowed me to use two complementary methods—an experiment testing causal predictions about the impact of symbolic social network ties on collective action and a survey analysis situating the study of symbolic social network ties and collective action in the context of a particular type of social entity. The two-study approach also allowed me to make different comparisons to thoroughly assess the effects of symbolic social network ties on cooperative collective action; in Study 1 I compared category-based social identity with entity-based symbolic social network ties, while in Study 2 I investigated the separate effects of each of the three criteria of entitativity—boundedness, interaction, and corporate actor capacity. Finally, I was also able to consider the impact of symbolic social network ties on two interesting forms of collective action—generalized exchange and community involvement. Generalized exchange is a form of collective action that is risky but has a number of benefits for collectivities and their members. Community involvement is a contextually specific form of collective action that can be vital to the success of a community.
The first study was an experimental test of the effects of symbolic social network ties on cooperation in generalized exchange. The experimental method allowed me to formally test the causal predictions that 1) cooperation will be greater in generalized exchange systems characterized by a shared social identity than in generalized exchange systems not characterized by a shared social identity and 2) cooperation will be greater in generalized exchange systems characterized by symbolic social network ties than in systems characterized by category-based social identity. While there was strong support for the second prediction, support for the first prediction was less conclusive. I discuss the implications of these findings in the following section.

The second study used survey data to assess the relationship between symbolic social network ties and community involvement in small towns. I examined how variations in each of the three criteria of entitativity relate to residents’ propensity to be involved in the community. I looked at two forms of community involvement: voluntary participation in community improvement activities and active membership in local organizations. As predicted, I found that the criteria of boundedness and interaction were positively related to both forms of community involvement. My measure of corporate actor capacity, however, did not have a statistically significant relationship with either form of community involvement. Further, I found little support for the hypothesized mechanisms of concern for others and expectations of cooperation. Neither of these mechanisms were found to mediate the relationship between the criteria of entitativity and community involvement. The implications of these findings are discussed in the “Contributions of the Project” section below.
Contributions of the Project

Theoretical Implications of Symbolic Social Network Ties

The concept of symbolic social networks contributes to sociological thought in several ways:

1. The concept accounts for social identity as it is both internally and externally experienced. This reflects social identity’s unique position at the intersection of the I and the we and explicitly theorizes social identity as a bonding agent tying individual group members (a set of I’s) together into a collective (a unified we).

2. The concept highlights fundamental differences between collectivities stemming from varying degrees of entitativity—including the distinction between categorically-based and entity-based social identity, which is often overlooked in social identity research.

3. The concept extends social identity theory from the micro-level to the macro-level. Social identity theory was formulated in the individual-focused perspective of psychological social psychology. Despite many sociological applications of the concept (e.g., Burn, Aboud, and Moyles 2000; Lamont and Molnár 2001), it has remained grounded at the micro-level by a focus on individual behaviors and attitudes. I developed a more macro-level understanding of social identity as it exists at the collective-level.

4. Theorizing the external manifestation of social identity and taking into account the impact of entitativity allows social identity to be expressly conceptualized as a collective-level phenomenon—an affiliation network. Symbolic social network ties are thus a property of the collectivity with collective-level causes and consequences. The concept of symbolic social network ties makes it possible to study social identity at the
collective level as an attribute of the group in addition to the study of social identity as an attribute of the self. This expands social identity research to collective activities and outcomes in group contexts, such as communities, organizations, corporations, work teams, or social clubs.

5. The concept of symbolic social network ties provides an extension to the theory of collective-level social capital. Symbolic social network ties involve a synthesis of the components of collective-level social capital: (symbolic) network ties and a social context characterized by trust and norms of reciprocity. They can thus be thought of as a symbolic form of social capital, furthering the study of social capital beyond its structural forms.

Implications of Research Findings

Findings suggest symbolic social network ties have important social benefits. Both studies support the conclusion that symbolic social network ties have a positive impact on cooperative collective action. In the experimental study, I tested the causal impact of symbolic social network ties on cooperation in generalized exchange. Results indicated that even in a situation where cooperation entailed great risk, symbolic social network ties succeeded in motivating actors to cooperate. By demonstrating their ability to overcome the difficulty involved in establishing a cooperative structure of giving in generalized exchange, the results suggest symbolic social network ties are a powerful motivator of ingroup cooperation.

The experimental study provided a theoretical test of my argument that entity-based symbolic social network ties have a stronger impact on cooperation than does category-based social identity. As predicted, being in a bounded, interactive group with
the capacity to act as a corporate actor motivated greater generosity in generalized exchange than did sharing a categorical classification. Symbolic social network ties did not just have a stronger effect, however; in my study, category-based social identity failed to have any effect on cooperation in generalized exchange. This finding was somewhat surprising, given the support others have found for a positive impact of minimal manipulations of category-based social identity on ingroup favoritism (e.g., Simpson 2006; Tajfel et al. 1971; Yamagishi and Kiyonari 2000). The lack of an effect of category-based social identity is likely due to the higher risk involved in cooperating in generalized exchange, compared to other cooperative behaviors that have been studied using the traditional minimal group paradigm manipulation of category-based social identity, such as negotiated exchange (Lawler and Yoon 1998) and commons dilemmas (Brewer and Kramer 1986; Kramer and Brewer 1984). While category-based social identity was found to be an insufficient motivator of cooperation in generalized exchange, entity-based social identity was found to promote greater giving in generalized exchange. This supports the conclusion that entity-based social identity is fundamentally different from—and stronger than—category-based social identity. This conclusion has important implications for the study of social identity. These differences have been too long ignored and a theoretical extension to social identity theory which properly accounts for these differences is necessary. The concept of symbolic social network ties provides this theoretical extension.

The findings of Study 1 indicate entitativity matters, suggesting more entitative groups will have a greater impact on cooperative collective action. Study 2 supports this prediction. This study tested the relationship between each of the criteria of entitativity—
boundedness, interaction, and corporate actor capacity—and cooperative collective action in the form of community involvement. Findings indicate that the criteria of entitativity differentially impact cooperative collective action. Two dimensions of entitativity—boundedness and interaction—were found to be positively associated with participation in local projects and community organizations. My measure of corporate actor capacity was not significantly related to either form of community involvement, however. I measured corporate actor capacity as the level of perceived divisiveness in local politics. This measure of corporate actor capacity may impact residents’ propensity to be involved in the community in different ways—it may motivate some residents to participate less in order to avoid contention while at the same time motivating others to be more involved to “have their say.” Using a different measure of corporate actor capacity, such as trust in local leadership or leadership effectiveness, may have yielded different results. The measure that may best capture the entitativity-enhancing effect of corporate actor capacity is the frequency with which an entity exercises its corporate actor capacity; the more frequently an entity uses its power to act as a unified corporate actor, the more the members of the entity may perceive themselves as part of a unit that exists beyond entity members.

Additionally, findings indicate that the hypothesized mechanisms of concern for the outcomes of group members and expectations of cooperation within the group may not be the driving force behind the relationships found in the two studies. Data from both the survey study and a post-experimental questionnaire (not reported in this dissertation) failed to provide support for the causal model predicting entitativity impacts cooperative collective action through these two mechanisms (see Figure 4.1). Two issues suggest
further work is needed to better determine whether these mechanisms play a role. One issue has to do with the measurement of the mechanisms in the survey; the variable used to measure concern was particularly problematic—it assessed interest in what goes on in the community rather than the level of concern residents had for fellow residents. The other issue is that the post-experimental questionnaire lacked sufficient statistical power to assess the model with the confidence necessary to rule out these mechanisms which have been supported in past social identity research. Additional work is needed to determine what drives the relationship between symbolic social network ties and cooperation.

**Broader Impacts**

In this dissertation, I examined the effects of symbolic social network ties on processes and outcomes requiring cooperative collective input. Findings indicate symbolic social network ties have a positive impact on cooperative collective action, and their impact is stronger than category-based social identity. The findings serve as a resource for developing strategies that can guide groups in their efforts to promote collective action that may be necessary for the success of the group. In general, groups should find ways to highlight their entitativity: draw attention to group boundaries, encourage intragroup interaction, and exercise the ability to act as a corporate actor. From large corporations to small task groups, most entities could apply the lessons learned here. For example, in Study 2 I examine the relationship between entitativity and community involvement in small towns in Iowa. Many rural communities are failing to meet the needs of residents in one way or another, and a sad few have devolved into “ghettos” of economic hardship (Davidson 1990). Entitativity-based strategies to
enhance cooperative collective action can help such communities meet the needs of residents by promoting the active participation of residents in efforts to meet collective goals, such as providing local infrastructure and amenities. Entitativity-enhancing strategies may also be particularly beneficial for pro-social groups, such as non-profit organizations (e.g., The Red Cross, The Sierra Club) and community groups (e.g., Kiwanis Club, volunteer fire department). The success of pro-social groups often relies heavily on cooperative collective action. Enhancing entitativity can assist them in their efforts to motivate active membership, promote volunteerism, and secure donations.

**Limitations of the Project**

Research is necessarily limited by available resources, including time, space considerations, and funding. The choices we make in response to these constraints typically force a trade-off between an option that is good and another option that would also be good. My analysis takes a quantitative approach to studying the intragroup impact of symbolic social network ties on cooperative collective action. Choosing this path means I did not take other paths that might have been equally valuable, such as a qualitative analysis, an examination of symbolic social network ties on intergroup relations, or an examination of how symbolic social network ties impact attachment to an entity. All untaken paths, of course, remain open for consideration in future research projects.

In addition to being limited to a particular path, there are a number of other choices that I made which also limit the project in various ways. I discuss several here, but no doubt the reader can identify others. All of the limitations can serve as starting points for future research and theorizing on the concept of symbolic social network ties.
One limitation has to do with the issue of subgroups within entities. Many entities have subgroups within them, such as cliques in a school or families in a church congregation. In my study of symbolic social network ties and community involvement, I examine the impact of entitativity on residents’ memberships in local community groups, which are a particular type of subgroup within the entity of a community. I do not, however, present a discussion of how subgroups relate to one another within an entity or how actions within a subgroup might impact processes within the entity.

Another limitation is that my theoretical discussion only considers social identities into which individuals self-identify. Social identities can also be projected onto the self by others (Turner 1985; Turner et al. 1987). What happens when there are discrepancies between the social identities an individual claims and the social identities others ascribe to her? Such discrepancies likely lead to processes and outcomes different from what I have discussed here.

To assure equivalence, in Study 1 I compared social identities in which both categories and entities were minimally defined. Findings indicated social identity based on membership in a minimal category did not motivate cooperation in generalized exchange. Categories, however, can also vary in boundedness and interaction (see Chapter 2), and thus will vary in their consequences. Categories which have clearer and less permeable boundaries and categories which tend to drive greater category-based interaction, such as race, gender, and sexuality, have demonstrated their strong and varied impact on social life. Such entities should have a greater impact on social identity processes and outcomes than the minimal categories I used in my study. Further, it is
entirely possible that categories such as race, gender, and sexuality have a greater impact on social identity processes and outcomes than do minimal entities.

The survey study was also limited in a number of ways. First, it is difficult to tease out cause and consequence using survey data. Though the experimental study supports the predicted causal relationship that aspects of symbolic social networks impact cooperation, data from the survey cannot conclusively demonstrate causality and, as discussed in Chapter 4, the relationship between the criteria of entitativity and community involvement may be somewhat reciprocal. Second, although the Iowa community study is a very rich dataset and the study was well done, my analyses were limited to the survey items asked by researchers who were seeking answers to a different set of research questions. Had the survey been conducted to understand the effects of entitativity on community involvement, better questions measuring the criteria of entitativity (e.g., better measures of corporate actor capacity, such as leadership effectiveness) and the mechanisms proposed to enhance cooperative collective action (i.e., concern about fellow group members and expectations of reciprocity) could have been included. Third, my dependent variables are not entirely independent of one another. Volunteering in the community may be, in part, explained by memberships in community organizations; community organizations often organize community improvement projects for which their members will be encouraged to volunteer. Fourth, there was a lack of evidence for my causal model, which predicted that the relationship between the criteria of entitativity and community involvement would be mediated by concern for fellow community members and expectations of cooperation within the community. Further work is needed to identify what drives this relationship. Other
limitations, which are discussed in more detail in Chapter 4, include aspects of volunteering that were not measured, such as how much time volunteers spent on the projects they volunteered for or how they spent that time (e.g., fundraising, event planning); issues with accuracy of recall and positive response bias; and the possibility that those who completed the survey were more prone to volunteering, since taking the time to complete a survey is itself a voluntary behavior.

**Future Directions**

The two studies presented in this dissertation indicate symbolic social network ties have a positive impact on cooperative collective action. Future work could extend this research to consider the impact of symbolic social network ties on other important entity outcomes. An historical example suggests future possibilities: The concept of symbolic social network ties might help to make sense of the inability of the residents of Boston’s West End to fend off redevelopment forces in Herbert Gans’s (1962) study *The Urban Villagers*. In spite of the fact that the West End was a fairly cohesive, neighborly place, few residents were concerned about the West End as a physical or social unit; most were only interested in life in their peer group and life on their street. Not until the outside world decided to tear down the West End did residents begin talking about it as an entity. Unfortunately, however, they did not have public discussion about the redevelopment and never got together to act in a concerted way to protest the destruction of the neighborhood. If the West End had greater entitativity and thus stronger symbolic social network ties, perhaps they would have had a fighting chance against the city, a much stronger and better organized entity. For example, much of the interaction within the West End was organized around the family circle, with little interaction within the
community based on membership in the entity. This is a great example highlighting the importance of the membership-based part of the "membership-based interaction" criterion of entitativity. Had there been greater interaction within the community based on mutual membership in the entity, such as community organizations, the community may have been better able to respond to the city in a concerted anti-redevelopment effort. This is in line with Granovetter’s (1973) argument that there were too many strong ties within cliques and too few weak ties bridging the cliques. Greater membership-based interaction within the community would increase opportunities to form such bridging ties, enabling residents to better coordinate efforts to save their community.

Work examining the impact of symbolic social network ties on entity processes and outcomes could be framed within various sociological subfields. Using a work and organizations perspective, symbolic social network ties could be applied to such outcomes as company turnover rates or work group productivity. Using a social movements perspective, symbolic social network ties could help make sense of movement success or failure. Using an urban community perspective, work could consider the impact of symbolic social network ties on crime rates, neighborhood satisfaction, or community attachment.

Further work is needed on the differences between category-based social identity and entity-based symbolic social network ties. Study 1 demonstrated that there are important differences between category-based social identity and entity-based symbolic social network ties. Attending to these differences provides a more precise understanding of the social identity experience. Future research taking this approach could compare the impact of category-based social identity and entity-based symbolic social network ties on
other forms of collective behaviors, such as processes of norm formation and enforcement.

Another line of inquiry should address the causal impact of the three criteria of entitativity on social processes and outcomes. Study 2 serves as a starting point for this line of research; results indicate that the three criteria have differential impacts on community involvement, at least as measured in this study. Experimental work could be used to study the impact of each criterion in isolation, as well as each of the possible two-criteria combinations—i.e., boundaries and interaction, boundaries and corporate actor capacity, and interaction and corporate actor capacity. Because corporate actor capacity cannot exist in real-world groups without some degree of both boundedness and interaction, examinations of corporate actor capacity in isolation and the latter two two-criteria combinations will be abstract exercises which can only be created in the lab.

Research should also address social phenomena which may enhance symbolic social network ties. For example, does the presence of unifying symbols (e.g., a flag, a language, a motto) or rituals (e.g., a community festival, a ribbon cutting ceremony) in an entity enhance the strength of symbolic social network ties? By highlighting the ingroup-outgroup distinction, symbols and rituals draw attention to boundaries and could enhance corporate actor capacity by potentially reducing divisiveness. Symbols and rituals also provide interaction opportunities. This line of research could provide further cues as to strategies groups can use to achieve the social identity-based benefits of symbolic social network ties.
Parting Cautions

I would like to leave the reader with a few cautions. While symbolic social network ties have various potential social benefits, they may also be associated with a number of negative outcomes. For one, social identity can lead to intergroup biases such as competition and discrimination (Rubin and Hewstone 2004; Tajfel and Turner 1979). Indeed, Tajfel’s motivation for developing social identity theory was to help make some sense of the extreme prejudice and discrimination he and other European Jews experienced during World War II (Hogg 2006).

Secondly, symbolic social network ties also have some potentially negative intragroup outcomes. The construction, internalization, and performance of group-level norms reflecting appropriate ingroup members and ingroup behaviors is a consequence of shared social identity (e.g., Abrams and Hogg 1990). These norms may not be in the best interest of individuals within the group (e.g., Portes and Sensenbrenner 1993). Further, an individual may experience “cross-pressures” of conflicting normative prescriptions across relevant reference groups (Merton and Rossi 1968).

Finally, symbolic social network ties could help mobilize collective action for anti-social or aggressive outcomes, such as rioting or lynching. To a less extreme degree, many collective action outcomes involve divisiveness. Controversies over efforts to place a religious monument on government grounds or to build a hazardous waste dump near a poor neighborhood are good examples. Typically, negative or divisive collective action outcomes go hand-in-hand with problematic intergroup relations between subgroups, such as racial tensions or religious versus secular interests in a community.
In spite of some possible negative outcomes, symbolic social network ties have the potential to be quite beneficial to society. As a final caution I would like to note that they should not, however, be considered a panacea for all collective action problems. There are many ingredients involved in solving collective action problems, such as adequate funding, time, and ingenuity. While symbolic social networks can contribute to securing access to these other components by mobilizing commitment to the group effort, they will not necessarily be sufficient on their own.
APPENDIX A: EXPERIMENT INSTRUCTIONS

No Social Identity Condition

WELCOME TO THE SOCIAL EXCHANGE EXPERIMENT!

You are participating in this experiment with several other students located in labs across campus. Like you, they volunteered for the experiment to earn money. Because we don't want your interaction to be influenced by personal characteristics like sex or appearance, you will not meet or talk to each other either during or after the experiment. You will interact with the other participants using your computer, which is linked to the other computers via a secure network connection.

Throughout the experiment, when you have finished reading a screen and are ready to advance to the next, click the "OK" button in the lower right-hand corner of your screen.

Please take your time and read each screen carefully. The software is designed so that all participants must advance through the experiment together. That means that you won't be able to advance to the next screen until all of the participants have read through the current screen and clicked "OK."

So, just take your time and read each screen carefully, rather than hurry through it and then have to wait while others finish. And please be patient--there are many other participants, all reading at a different pace.
A BRIEF OVERVIEW

You’ll get detailed instructions shortly, but first let us give you a brief overview of what you’ll be doing.

During the experiment, you will have opportunities to transfer points to other participants, and opportunities to receive points from other participants. These points will be worth money, and at the conclusion of the experiment you will be paid for the points you have accumulated.

The experiment will consist of a series of “transfer opportunities.” For each transfer opportunity, you will be randomly paired with another participant. One of you will be randomly assigned to Role A, and the other will be assigned to Role B. The person in Role A will be given a number of points, and he or she will decide whether to keep all of the points or to transfer some of the points to the person in Role B. Participants will be paid at the end of the experiment according to the number of points they keep and/or are transferred throughout the course of the experiment.

We’ll give you more detailed instructions and go through a few practice rounds before we begin the transfer opportunities. Before we begin the experiment, however, we have a brief task we’d like you to complete.
We are in the process of designing a future experiment about linguistic preferences. The task we are asking you to complete will help us in the design of this experiment.

The task is fairly simple. It consists of a series of choices. You will be presented with two group names and asked to choose which of the two names you prefer. Think of the names you’ll be choosing between as something you might call an intramural sports team or perhaps a garage band.

You’ll consider each pair of names and select which of the two you like more than the other. For example, you might be presented with the group names "The Zombies" and "The Wizards." You would then decide whether you like the name "The Zombies" or "The Wizards" better. If you decided you preferred "The Wizards," you would click the button labeled "The Wizards" to indicate your preference.

When you are ready to begin the task, press OK.
Supergroup

Legion of Awesome

Fire Breathing Kittens

Team Thunder
Thank you for completing this task! It will be a big help as we design our linguistic preference experiment. The instructions for the experiment will begin in a moment, once all participants have completed the task.

Please click "OK" to continue.
TRANSFER OPPORTUNITIES

We are about to begin the experiment! We will now give you detailed instructions about what you’ll be doing, and you’ll have the opportunity to practice a few times before we begin.

Please take your time and read the instructions carefully.

As we explained earlier, during the experiment you will have opportunities to transfer points to, or receive points from, your fellow participants.

Before I explain the transfer process in detail, let me briefly explain the points. Each point is worth $.03. At the conclusion of the experiment, you will be paid according to the number of points that you keep and that others transfer to you during the experiment. Your point total will be displayed in the bottom left corner of your screen throughout the experiment. Your point bank will begin at 0.
Now let us explain how you’ll be getting these points.

The experiment consists of a large number of "transfer opportunities." **ON EACH TRANSFER OPPORTUNITY, YOU WILL BE RANDOMLY PAIRED WITH A NEW, ANONYMOUS PARTNER.** One of you will be randomly assigned to Role A, and the other will be assigned to Role B. Correspondingly, the person in Role A will be referred to as ‘A’ and the person in Role B will be referred to as ‘B.’ Remember, your role is randomly assigned on each new transfer opportunity. That means sometimes you will be ‘A’ and sometimes you will be ‘B.’

On each transfer opportunity, A will have 10 points deposited into his or her point bank.

A will then have two options:

**KEEP:** If A chooses KEEP, A will keep the 10 points in his/her point bank and B will receive 0 points.

**OR**

**TRANSFER:** If A chooses TRANSFER, A will keep 4 points in his/her point bank and B will be transferred 15 points.
On each transfer opportunity, A will be presented with two boxes, one labeled "Keep" and the other labeled "Transfer." A will make her/his decision and then click on the box indicating her/his choice.

Keep in mind, there are no right or wrong responses in the experiment.

After A has made his/her choice, B will be informed of A’s decision and both A’s and B’s point banks will be updated.

Again, for each opportunity, the potential points for A and B are as follows, depending on A’s decision to keep or transfer points:

- **Keep:** A gets 10 points and B gets 0
- **Transfer:** A gets 4 points and B gets 15
As you can see, how much money you make depends on two factors: 1) how often your partners transfer points to you when you are in Role B, and 2) how many points you keep when you are in Role A.

Yes, it really is that simple!

PRACTICE TRIALS

Now let’s try a few practice trials so that you can get familiar with the transfer process.

Keep in mind that because this is just practice, it won't be realistic. We want you to try out different choices to become familiar with the process and with reading the information on the screen. Because all of you will be trying various choices, just for practice, you won't be interacting with each other in the same way that you will be in the experiment. So, this exercise won't tell you how other persons are likely to behave in the experiment. It will just give you practice making choices and reading the screen. Also, because it's just for practice, you won't be paid for any points you have at the end of it.
If subject was assigned Role A:

You have been assigned Role A. 10 points have been added to your point bank. Please make your selection by clicking the “Keep” or “Transfer” button.

Keep
Transfer

Point Bank
10

If A chose to KEEP:

You have kept all 10 points in your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank
10
If A chose to TRANSFER:

You have kept 4 points in your point bank and transferred 15 points to B. You have completed this transfer opportunity and will be paired with a new partner in a moment.

If subject was assigned Role B:

You have been assigned Role B. Your partner will now decide whether to transfer points to you.
If A chose to KEEP:

You have NOT been transferred points. 0 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank
0

If A chose to TRANSFER:

You have been transferred points! 15 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank
15
Subjects went through 4 practice trials. Assignment to Role A or Role B was random, so on some trials a participant would be assigned Role A and on other trials she would be assigned Role B. The point bank kept a cumulative count of the number of points the subject gave and/or kept throughout the course of the practice trials.

At the conclusion of the practice trials, the instructions continued.

Okay, that was very good. As you’ve just seen, your task in the experiment is really quite simple. You will simply be making choices to transfer or not transfer points when you are in Role A, and having points transferred to you or not transferred to you when you are in Role B.

Remember, you are paired with a NEW, ANONYMOUS partner on each trial.
That concludes the instructions. If you have any questions, please write them on the notepad on your desk. When you are ready, please select one of the choices below to indicate either that you have a question for the experimenter, or that you have no questions and are ready to begin the experiment.

Yes, I have a question

No, I have no questions

If a subject had a question, it was read and answered over the intercom. Once all questions had been answered, the exchange portion of the experiment began.

If subject was assigned Role A:

You have been assigned Role A. 10 points have been added to your point bank. Please make your selection by clicking the “Keep” or “Transfer” button.
If A chose to KEEP:

You have kept all 10 points in your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point 10
Bank

If A chose to TRANSFER:

You have kept 4 points in your point bank and transferred 15 points to B. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point 4
Bank
If subject was assigned Role B:

You have been assigned Role B. Your partner will now decide whether to transfer points to you.

If A chose to KEEP:

You have NOT been transferred points. 0 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.
If A chose to TRANSFER:

You have been transferred points! 15 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Subjects went through a series of 60 exchange trials. Assignment to Role A or Role B was random, so on some trials a participant would be assigned Role A and on other trials she would be assigned Role B. The point bank kept a cumulative count of the number of points the subject gave and/or kept throughout the course of the exchange trials.
At the conclusion of the 60 trials, subjects were informed of their total earnings:

You’ve now concluded the Social Exchange Experiment!
You earned this many points: 425
You earned this much money (or $12.00, whichever is greater): $12.75

In a few minutes, the experimenter will come in your room, pay you your earnings, and answer your questions about the experiment. While the experimenter is getting ready to pay you, we would like you to answer a few questions about the experiment and your interaction with the other participants.

Subjects were then asked a series of questions regarding their experience and debriefed. See Appendix B for screen shots of the questionnaire and debriefing scripts.
Category-Based Social Identity Condition

WELCOME TO THE SOCIAL EXCHANGE EXPERIMENT!

You are participating in this experiment with several other students located in labs across campus. Like you, they volunteered for the experiment to earn money. Because we don't want your interaction to be influenced by personal characteristics like sex or appearance, you will not meet or talk to each other either during or after the experiment. You will interact with the other participants using your computer, which is linked to the other computers via a secure network connection.

Throughout the experiment, when you have finished reading a screen and are ready to advance to the next, click the "OK" button in the lower right-hand corner of your screen.

OK

Please take your time and read each screen carefully. The software is designed so that all participants must advance through the experiment together. That means that you won’t be able to advance to the next screen until all of the participants have read through the current screen and clicked "OK."

So, just take your time and read each screen carefully, rather than hurry through it and then have to wait while others finish. And please be patient--there are many other participants, all reading at a different pace.

OK
A BRIEF OVERVIEW

You’ll get detailed instructions shortly, but first let us give you a brief overview of what you’ll be doing.

During the experiment, you will have opportunities to transfer points to other participants, and opportunities to receive points from other participants. These points will be worth money, and at the conclusion of the experiment you will be paid for the points you have accumulated.

The experiment will consist of a series of “transfer opportunities.” For each transfer opportunity, you will be randomly paired with another participant. One of you will be randomly assigned to Role A, and the other will be assigned to Role B. The person in Role A will be given a number of points, and he or she will decide whether to keep all of the points or to transfer some of the points to the person in Role B. Participants will be paid at the end of the experiment according to the number of points they keep and/or are transferred throughout the course of the experiment.

We’ll give you more detailed instructions and go through a few practice rounds before we begin the transfer opportunities. Before we begin the experiment, however, we have a brief task we'd like you to complete.
For administrative reasons, we need to split participants into two interaction pools. To do this, we will separate participants into two categories, with interaction limited according to category. That is, you will be placed into one of the two categories, and during the experiment you will only interact with other participants who are also in your category.

The categories will be based on linguistic preferences, which we will evaluate with a brief and simple assessment. We are in the process of designing a future experiment about linguistic preferences, and your answers will help us in the design of this experiment. We will give you instructions for the assessment in a moment.

At the conclusion of the assessment, participants will be distributed into two preference categories for interaction during the experiment. This will be done using a statistical procedure designed to: 1) recognize patterns of homogeneity in participant preferences, 2) create two maximally-homogenous categories based on these patterns, and 3) sort participants into the category best fitting his or her preferences. Put simply, the program will create two categories based on similarities in answers, and you will be placed into the category with participants who are most similar to you in their linguistic preferences.

After the categories have been assigned, you will be given detailed instructions for the transfer opportunities, as well as go through a few practice trials before beginning the experiment.
INSTRUCTIONS

The assessment consists of a series of choices. You will be presented with two group names and asked to choose which of the two names you prefer. Think of the names you'll be choosing between as something you might call an intramural sports team or perhaps a garage band.

You'll consider each pair of names and select which of the two you like more than the other. For example, you might be presented with the group names "The Zombies" and "The Wizards." You would then decide whether you like the name "The Zombies" or "The Wizards" better. If you decided you preferred "The Wizards," you would click the button labeled "The Wizards" to indicate your preference.

When you are ready to begin the assessment, click "OK."
Fire Breathing Kittens
Team Thunder
Unstoppable Unicorns
The Unibrows
Thank you for completing the assessment. The statistical process will assign categories once all participants have completed the assessment. Please be patient, as this may take a few moments.

There was a 45 second pause while the statistical process supposedly took place.

Thank you for waiting. All participants have completed the assessment and each participant has been assigned to one of two preference categories. You have been assigned to the category with other participants whose preferences are most similar to yours. We have designated this category "Category Q." For the experiment, you will interact only with other participants who are also in Category Q.

The instructions for the experiment will begin on the next screen.

Please click "OK" to continue.
TRANSFER OPPORTUNITIES

We are about to begin the experiment! We will now give you detailed instructions about what you’ll be doing, and you’ll have the opportunity to practice a few times before we begin.

Please take your time and read the instructions carefully.

As we explained earlier, during the experiment you will have opportunities to transfer points to, or receive points from, your fellow participants.

Before I explain the transfer process in detail, let me briefly explain the points. Each point is worth $.03. At the conclusion of the experiment, you will be paid according to the number of points that you keep and that others transfer to you during the experiment. Your point total will be displayed in the bottom left corner of your screen throughout the experiment. Your point bank will begin at 0.
Now let us explain how you’ll be getting these points.

The experiment consists of a large number of "transfer opportunities." ON EACH TRANSFER OPPORTUNITY, YOU WILL BE RANDOMLY PAIRED WITH A NEW, ANONYMOUS PARTNER. One of you will be randomly assigned to Role A, and the other will be assigned to Role B. Correspondingly, the person in Role A will be referred to as ‘A’ and the person in Role B will be referred to as ‘B.’ Remember, your role is randomly assigned on each new transfer opportunity. That means sometimes you will be ‘A’ and sometimes you will be ‘B.’

On each transfer opportunity, A will have 10 points deposited into his or her point bank.

A will then have two options:

KEEP: If A chooses KEEP, A will keep the 10 points in his/her point bank and B will receive 0 points.

OR

TRANSFER: If A chooses TRANSFER, A will keep 4 points in his/her point bank and B will be transferred 15 points.
On each transfer opportunity, A will be presented with two boxes, one labeled "Keep" and the other labeled "Transfer." A will make her/his decision and then click on the box indicating her/his choice.

Keep in mind, there are no right or wrong responses in the experiment.

After A has made his/her choice, B will be informed of A’s decision and both A’s and B’s point banks will be updated.

Again, for each opportunity, the potential points for A and B are as follows, depending on A’s decision to keep or transfer points:

- **Keep:** A gets 10 points and B gets 0
- **Transfer:** A gets 4 points and B gets 15
As you can see, how much money you make depends on two factors: 1) how often your partners transfer points to you when you are in Role B, and 2) how many points you keep when you are in Role A. Yes, it really is that simple!

PRACTICE TRIALS
Now let’s try a few practice trials so that you can get familiar with the transfer process.

Keep in mind that because this is just practice, it won't be realistic. We want you to try out different choices to become familiar with the process and with reading the information on the screen. Because all of you will be trying various choices, just for practice, you won't be interacting with each other in the same way that you will be in the experiment. So, this exercise won't tell you how other persons are likely to behave in the experiment. It will just give you practice making choices and reading the screen. Also, because it's just for practice, you won't be paid for any points you have at the end of it.
If subject was assigned Role A:

You have been assigned Role A. 10 points have been added to your point bank. Please make your selection by clicking the “Keep” or “Transfer” button.

Keep
Transfer

If A chose to KEEP:

You have kept all 10 points in your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank 10
If A chose to TRANSFER:

You have kept 4 points in your point bank and transferred 15 points to B. You have completed this transfer opportunity and will be paired with a new partner in a moment.

If subject was assigned Role B:

You have been assigned Role B. Your partner will now decide whether to transfer points to you.
If A chose to KEEP:

Category Q

You have NOT been transferred points. 0 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point 0
Bank

If A chose to TRANSFER:

Category Q

You have been transferred points! 15 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point 15
Bank
Subjects went through 4 practice trials. Assignment to Role A or Role B was random, so on some trials a participant would be assigned Role A and on other trials she would be assigned Role B. The point bank kept a cumulative count of the number of points the subject gave and/or kept throughout the course of the practice trials.

At the conclusion of the practice trials, the instructions continued.

Okay, that was very good. As you've just seen, your task in the experiment is really quite simple. You will simply be making choices to transfer or not transfer points when you are in Role A, and having points transferred to you or not transferred to you when you are in Role B.

Remember, you are paired with a NEW, ANONYMOUS partner on each trial. Also, keep in mind that you will only be partnered with other participants who are also in Category Q based on similarities in your linguistic preferences.

OK
That concludes the instructions. If you have any questions, please write them on the notepad on your desk. When you are ready, please select one of the choices below to indicate either that you have a question for the experimenter, or that you have no questions and are ready to begin the experiment.

Yes, I have a question
No, I have no questions

If a subject had a question, it was read and answered over the intercom. Once all questions had been answered, the exchange portion of the experiment began.

If subject was assigned Role A:

Category Q

You have been assigned Role A. 10 points have been added to your point bank. Please make your selection by clicking the “Keep” or “Transfer” button.
If A chose to KEEP:

Category Q

You have kept all 10 points in your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank 10

If A chose to TRANSFER:

Category Q

You have kept 4 points in your point bank and transferred 15 points to B. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank 4
If subject was assigned Role B:

You have been assigned Role B. Your partner will now decide whether to transfer points to you.

If A chose to KEEP:

You have NOT been transferred points. 0 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.
If A chose to TRANSFER:

You have been transferred points! 15 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Subjects went through a series of 60 exchange trials. Assignment to Role A or Role B was random, so on some trials a participant would be assigned Role A and on other trials she would be assigned Role B. The point bank kept a cumulative count of the number of points the subject gave and/or kept throughout the course of the exchange trials.
At the conclusion of the 60 trials, subjects were informed of their total earnings:

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In a few minutes, the experimenter will come in your room, pay you your earnings, and answer your questions about the experiment. While the experimenter is getting ready to pay you, we would like you to answer a few questions about the experiment and your interaction with the other participants.

Subjects were then asked a series of questions regarding their experience and debriefed. See Appendix B for screen shots of the questionnaire and debriefing scripts.
WELCOME TO THE SOCIAL EXCHANGE EXPERIMENT!

You are participating in this experiment with several other students located in labs across campus. Like you, they volunteered for the experiment to earn money. Because we don't want your interaction to be influenced by personal characteristics like sex or appearance, you will not meet or talk to each other either during or after the experiment. You will interact with the other participants using your computer, which is linked to the other computers via a secure network connection.

Throughout the experiment, when you have finished reading a screen and are ready to advance to the next, click the "OK" button in the lower right-hand corner of your screen.

Please take your time and read each screen carefully. The software is designed so that all participants must advance through the experiment together. That means that you won’t be able to advance to the next screen until all of the participants have read through the current screen and clicked "OK."

So, just take your time and read each screen carefully, rather than hurry through it and then have to wait while others finish. And please be patient--there are many other participants, all reading at a different pace.
A BRIEF OVERVIEW

You’ll get detailed instructions shortly, but first let us give you a brief overview of what you’ll be doing.

During the experiment, you will have opportunities to transfer points to other participants, and opportunities to receive points from other participants. These points will be worth money, and at the conclusion of the experiment you will be paid for the points you have accumulated.

The experiment will consist of a series of “transfer opportunities.” For each transfer opportunity, you will be randomly paired with another participant. One of you will be randomly assigned to Role A, and the other will be assigned to Role B. The person in Role A will be given a number of points, and he or she will decide whether to keep all of the points or to transfer some of the points to the person in Role B. Participants will be paid at the end of the experiment according to the number of points they keep and/or are transferred throughout the course of the experiment.

We’ll give you more detailed instructions and go through a few practice rounds before we begin the transfer opportunities. Before we begin the experiment, however, we have a brief task we’d like you to complete.
You are participating in this experiment with a number of others. To better facilitate interaction, we have sorted you into two smaller, separate "interaction groups": Group 1 and Group 2. You have been assigned to Group 1. Throughout the experiment, you will only be interacting with other participants who have also been assigned to Group 1. Correspondingly, participants in Group 2 will only interact with other participants who are also in Group 2.

For administrative reasons, we need to come up with a unique name for each interaction group. The name will be used to organize the data from the experiment by distinguishing your group--Group 1--from Group 2 and all of the other interaction groups that participate in the experiment at other times. This will allow us to more easily differentiate groups from one another when making direct comparisons between groups, helping us to see how particular collections of individuals behave as a group during the experiment. Your interaction group name will also be used to refer to your group in future academic publications discussing the experiment.

We have decided to allow interaction groups to come up with their own group name. For example, two groups that have already participated selected the names "Supergroup" and "Team Thunder."

Again, the purpose of your group name is to clearly distinguish your group from Group 2 and all other interaction groups participating in the experiment at other times, which will facilitate comparisons between your group and other groups on such aspects of the experiment as overall group behavior and overall group outcome.

You and your fellow members of Group 1 will work together to decide on your own unique name for your interaction group. This will involve a fairly simple three step process. This process is described on the next screen.
STEP 1: Subgroup Assignments
First, participants will be temporarily placed into smaller groups of 2 to 4 participants. These smaller groups are referred to as "subgroups."

STEP 2: Subgroup Discussions and Nominations
Next, you will be connected to your subgroup by a chat box on your screen. Via chat, each subgroup will discuss possible names to nominate for Group 1. Each subgroup will work together to decide on one name to nominate as a potential name for the larger group.

STEP 3: Voting
Finally, the names nominated by each subgroup will be compiled into a list, and each of you will individually vote for the name you prefer. The name with the most votes will be selected as the new name for Group 1. You will then be reconnected with everyone in your interaction group, given instructions for the transfer opportunities, and begin the experiment.

Remember, during each step of the process you will only be interacting with others who are also in Group 1. Participants in Group 2 will be working on a name for their own interaction group.

STEP 1: Subgroup Assignments
You've been assigned to a 2-person subgroup with one other member of Group 1.
STEP 2: Subgroup Discussions and Nominations

In a moment, you’ll be connected to the other participant in your subgroup via a chat box so that you can discuss a name to nominate for Group 1. Please read the instructions below carefully.

Chat Instructions:

To begin your chat, simply start typing in the chat box and press the "ENTER" key on your keyboard. It is VERY IMPORTANT that you DO NOT click "OK" until you have finished your discussion with your partner and have agreed upon a name to nominate.

Start by suggesting one or two names each. Try to be creative in your suggestions! Don't just settle for the first name that is suggested. Try to come up with the best name you can to differentiate your interaction group from Group 2 and all of the other interaction groups participating in the experiment at other times.

Please limit your discussion to the selection of a group name to nominate (and be aware that the content of your chat will be stored in the database).

When you have finished your chat and both of you have reached agreement on one name that your subgroup would like to nominate as a potential name for Group 1, click "OK." Again, please do not click "OK" until both of you have reached an agreement.

On the next screen you’ll be presented with the chat box and a copy of these instructions. Before we begin, please take a moment to write down at least two potential names for your interaction group to suggest to your subgroup.

IMPORTANT REMINDER: Do not hit the "OK" button until you have finished your chat and have agreed on a name to nominate.

You are connected to 1 other participant in a subgroup of 2.

Chat Instructions:

To begin your chat, simply start typing in the chat box and press the "ENTER" key on your keyboard. It is VERY IMPORTANT that you DO NOT click "OK" until you have finished your discussion with your partner and have agreed upon a name to nominate.

Start by suggesting one or two names each. Try to be creative in your suggestions! Don't just settle for the first name that is suggested. Try to come up with the best name you can to differentiate your interaction group from Group 2 and all of the other interaction groups participating in the experiment at other times.

Please limit your discussion to the selection of a group name to nominate (and be aware that the content of your chat will be stored in the database).

When you have finished your chat and both of you have reached agreement on one name that your subgroup would like to nominate as a potential name for Group 1, click "OK." Again, please do not click "OK" until both of you have reached an agreement.
In the textbox below, please enter the name that you agreed on with your partner and press the "Enter" key on your keyboard.

YOU MUST HIT "ENTER" TO SUBMIT THE NAME TO THE DATABASE.

Once you hit "Enter" the name will no longer appear in the textbox. This means it has been successfully submitted. You may then click "OK" to continue.

[Participants typed the name their subgroup wanted to nominate here.]

OK

Please wait while we compile the list of group names for voting. This may take a few moments, so please be patient.
STEP 3: Voting

The names nominated by all of the subgroups have been compiled into a list. On the next screen, you'll be presented with the list. Please select the name you prefer for your interaction group, Group 1. Keep in mind that you don't have to vote for the name your subgroup nominated - just vote for the name you like the best. The name with the most votes will be designated the name for your interaction group, which will distinguish it from Group 2 and all other interaction groups participating in the experiment at different times, and will be used when making comparisons between groups on aspects of the experiment such as group behavior and group outcome. After your group name has been selected, you will be reconnected with your interaction group for the remainder of the experiment.

OK

<table>
<thead>
<tr>
<th>Name nominated by subgroup 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Breathing Kittens</td>
</tr>
<tr>
<td>Tiny Giants</td>
</tr>
<tr>
<td>The Unibrows</td>
</tr>
<tr>
<td>The Storm</td>
</tr>
<tr>
<td>Zombie Genius</td>
</tr>
<tr>
<td>The Awesome Possums</td>
</tr>
<tr>
<td>Empire Imperative</td>
</tr>
<tr>
<td>Chaos Theory</td>
</tr>
<tr>
<td>Gladiators</td>
</tr>
<tr>
<td>[Name nominated by subgroup 1]</td>
</tr>
<tr>
<td>Monsoon</td>
</tr>
<tr>
<td>Legion of Awesome</td>
</tr>
<tr>
<td>Stuffed Lizards</td>
</tr>
<tr>
<td>Ego Iconic</td>
</tr>
<tr>
<td>[Name nominated by subgroup 2]</td>
</tr>
<tr>
<td>Unstoppable Unicorns</td>
</tr>
</tbody>
</table>
Please wait. The experiment will continue after 1) everyone in Group 1 has finished voting and your new group name has been selected, and 2) Group 2 has also completed their name selection process. Please be patient; this may take a few moments.

The votes are in! Group 1 has selected the name [whichever name the participant voted for would be inserted here]. Group 2 has selected the name The Big Time.

You will now be reconnected with your entire interaction group for the remainder of the experiment. On the next screen we'll begin instructions for the transfer opportunities.
TRANSFER OPPORTUNITIES

We are about to begin the experiment! We will now give you detailed instructions about what you’ll be doing, and you’ll have the opportunity to practice a few times before we begin.

Please take your time and read the instructions carefully.

As we explained earlier, during the experiment you will have opportunities to transfer points to, or receive points from, your fellow participants.

Before I explain the transfer process in detail, let me briefly explain the points. Each point is worth $.03. At the conclusion of the experiment, you will be paid according to the number of points that you keep and that others transfer to you during the experiment. Your point total will be displayed in the bottom left corner of your screen throughout the experiment. Your point bank will begin at 0.
Now let us explain how you’ll be getting these points.

The experiment consists of a large number of "transfer opportunities." ON EACH TRANSFER OPPORTUNITY, YOU WILL BE RANDOMLY PAIRED WITH A NEW, ANONYMOUS PARTNER. One of you will be randomly assigned to Role A, and the other will be assigned to Role B. Correspondingly, the person in Role A will be referred to as ‘A’ and the person in Role B will be referred to as ‘B.’ Remember, your role is randomly assigned on each new transfer opportunity. That means sometimes you will be ‘A’ and sometimes you will be ‘B.’

On each transfer opportunity, A will have 10 points deposited into his or her point bank.

A will then have two options:

KEEP: If A chooses KEEP, A will keep the 10 points in his/her point bank and B will receive 0 points.

OR

TRANSFER: If A chooses TRANSFER, A will keep 4 points in his/her point bank and B will be transferred 15 points.
On each transfer opportunity, A will be presented with two boxes, one labeled "Keep" and the other labeled "Transfer." A will make her/his decision and then click on the box indicating her/his choice.

Keep in mind, there are no right or wrong responses in the experiment.

After A has made his/her choice, B will be informed of A’s decision and both A’s and B’s point banks will be updated.

Again, for each opportunity, the potential points for A and B are as follows, depending on A’s decision to keep or transfer points:

Keep: A gets 10 points and B gets 0
Transfer: A gets 4 points and B gets 15
As you can see, how much money you make depends on two factors: 1) how often your partners transfer points to you when you are in Role B, and 2) how many points you keep when you are in Role A.

Yes, it really is that simple!

PRACTICE TRIALS

Now let's try a few practice trials so that you can get familiar with the transfer process.

Keep in mind that because this is just practice, it won't be realistic. We want you to try out different choices to become familiar with the process and with reading the information on the screen. Because all of you will be trying various choices, just for practice, you won't be interacting with each other in the same way that you will be in the experiment. So, this exercise won't tell you how other persons are likely to behave in the experiment. It will just give you practice making choices and reading the screen. Also, because it's just for practice, you won't be paid for any points you have at the end of it.
If subject was assigned Role A:

You have been assigned Role A. 10 points have been added to your point bank. Please make your selection by clicking the “Keep” or “Transfer” button.

[Name participant voted for]

If A chose to KEEP:

You have kept all 10 points in your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

[Name participant voted for]
If A chose to TRANSFER:

[Name participant voted for]

You have kept 4 points in your point bank and transferred 15 points to B. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank

4

If subject was assigned Role B:

[Name participant voted for]

You have been assigned Role B. Your partner will now decide whether to transfer points to you.

Point Bank

0
If A chose to KEEP:

[Name participant voted for]

You have NOT been transferred points. 0 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank 0

If A chose to TRANSFER:

[Name participant voted for]

You have been transferred points! 15 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank 15
Subjects went through 4 practice trials. Assignment to Role A or Role B was random, so on some trials a participant would be assigned Role A and on other trials she would be assigned Role B. The point bank kept a cumulative count of the number of points the subject gave and/or kept throughout the course of the practice trials.

At the conclusion of the practice trials, the instructions continued.

Okay, that was very good. As you've just seen, your task in the experiment is really quite simple. You will simply be making choices to transfer or not transfer points when you are in Role A, and having points transferred to you or not transferred to you when you are in Role B.

Remember, you are paired with a NEW, ANONYMOUS partner on each trial. Also, keep in mind that although your partner will change after each transfer opportunity, your partner will always be another participant from your interaction group, [whichever name the participant voted for would be inserted here].
That concludes the instructions. If you have any questions, please write them on the notepad on your desk. When you are ready, please select one of the choices below to indicate either that you have a question for the experimenter, or that you have no questions and are ready to begin the experiment.

Yes, I have a question

No, I have no questions

If a subject had a question, it was read and answered over the intercom. Once all questions had been answered, the exchange portion of the experiment began.

If subject was assigned Role A:

[Name participant voted for]

You have been assigned Role A. 10 points have been added to your point bank. Please make your selection by clicking the “Keep” or “Transfer” button.

Keep
Transfer

Point Bank 10
If A chose to KEEP:

[Name participant voted for]

You have kept all 10 points in your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank
10

If A chose to TRANSFER:

[Name participant voted for]

You have kept 4 points in your point bank and transferred 15 points to B. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point Bank
4
If subject was assigned Role B:

You have been assigned Role B. Your partner will now decide whether to transfer points to you.

Point 0
Bank

If A chose to KEEP:

You have NOT been transferred points. 0 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Point 0
Bank
If A chose to TRANSFER:

You have been transferred points! 15 points have been added to your point bank. You have completed this transfer opportunity and will be paired with a new partner in a moment.

Subjects went through a series of 60 exchange trials. Assignment to Role A or Role B was random, so on some trials a participant would be assigned Role A and on other trials she would be assigned Role B. The point bank kept a cumulative count of the number of points the subject gave and/or kept throughout the course of the exchange trials.
At the conclusion of the 60 trials, subjects were informed of their total earnings:

You’ve now concluded the Social Exchange Experiment!

You earned this many points: 425
You earned this much money (or $12.00, whichever is greater): $12.75

In a few minutes, the experimenter will come in your room, pay you your earnings, and answer your questions about the experiment. While the experimenter is getting ready to pay you, we would like you to answer a few questions about the experiment and your interaction with the other participants.

Subjects were then asked a series of questions regarding their experience and debriefed. See Appendix B for screen shots of the questionnaire and debriefing scripts.
APPENDIX B: EXPERIMENT QUESTIONNAIRE AND DEBRIEFING SCRIPTS

**Experiment Questionnaire**
*(The questionnaire was the same across conditions.)*

First, think about your experience during the exchange process.

More specifically, think about your interactions with your transfer partners. How would you describe their behavior toward you? For example, do you think they were generally kind or unkind, trustworthy or untrustworthy?

For the following questions you will be presented with a pair of words and asked to choose which best describes your experience during the transfer process. Imagine a scale for each pair of words listed. For each pair of words, please choose the one number which you feel best describes how your partners behaved during the transfer process, with 1 being most like the word on the left, 7 being most like the word on the right, and 2, 3, 4, 5, and 6 representing degrees between the two words.

**LET'S TRY AN EXAMPLE:**

My partners were generally:

CONSIDERATE 1 2 3 4 5 6 7 RUDE

You would select 1 if you feel that your partners were generally considerate, 7 if you feel that your partners were generally rude, or 2, 3, 4, 5, or 6 if you feel they were some degree between the two endpoints.

Be sure to look carefully at the two labels at the ends of the scales before responding. Their placement will vary throughout the questionnaire; SOMETIMES THE MORE "POSITIVE" LABEL WILL BE ON THE RIGHT, AND SOMETIMES ON THE LEFT. Thus it's very important that you read the labels carefully for each question.

We will show you the questions one at a time. Once you make your selection and click "OK", you will not be able to change your answer. Thus, it is very important that you think before you respond, or you might mistakenly select a response that you don't want.

REMEMBER, ONCE YOU SELECT YOUR ANSWER AND CLICK "OK" YOU CANNOT CHANGE YOUR RESPONSE!
My partners were generally:

TRUSTWORTHY [1 2 3 4 5 6 7] UNTRUSTWORTHY

My partners were generally:

SUPPORTIVE [1 2 3 4 5 6 7] INDIFFERENT

My partners were generally:

LIKE ME [1 2 3 4 5 6 7] UNLIKE ME

My partners were generally:

COMPETITIVE [1 2 3 4 5 6 7] COOPERATIVE

My partners were generally:

KIND [1 2 3 4 5 6 7] UNKIND
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<td><strong>Dependable</strong></td>
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<td><strong>Dissimilar to Me</strong></td>
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<td><strong>Good</strong></td>
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<td><strong>Bad</strong></td>
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<td><strong>Committed to Me</strong></td>
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<td></td>
<td><strong>Uncommitted to Me</strong></td>
</tr>
</tbody>
</table>
My partners were generally:

IN CONFLICT WITH ME 1 2 3 4 5 6 7 IN HARMONY WITH ME

My partners were generally:

FRIENDLY 1 2 3 4 5 6 7 UNFRIENDLY

My partners were generally:

BENEVOLENT 1 2 3 4 5 6 7 GREEDY

My partners were generally:

CARING 1 2 3 4 5 6 7 UNCARING

My partners were generally:

HONORABLE 1 2 3 4 5 6 7 DISHONORABLE
My partners were generally:
COMPARABLE TO ME 1 2 3 4 5 6 7 DIFFERENT FROM ME

My partners were generally:
AGREEABLE 1 2 3 4 5 6 7 DISAGREEABLE

My partners were generally:
PREDICTABLE 1 2 3 4 5 6 7 UNPREDICTABLE

My partners were generally:
GENEROUS 1 2 3 4 5 6 7 STINGY

My partners were generally:
PLEASANT 1 2 3 4 5 6 7 UNPLEASANT
Now we'd like you to think about the general RELATIONAL CLIMATE characterizing the interaction among participants during the transfer opportunities. During the transfer process, what was the general atmosphere like? For example, do you think the interaction was generally competitive or cooperative, supportive or unsupportive?

Like the previous questions, for the following questions you will be presented with a pair of words and asked to choose which best describes your experience during the transfer process. Again, imagine a scale for each pair of words listed, and keep in mind that sometimes the "positive" label will be on the right, and sometimes it will be on the left.
The relational climate of the interaction was generally:

- **COMMITTED**: 1 2 3 4 5 6 7 **UNCOMMITTED**

The relational climate of the interaction was generally:

- **SEPARATE**: 1 2 3 4 5 6 7 **UNITED**

The relational climate of the interaction was generally:

- **CONFLICTUAL**: 1 2 3 4 5 6 7 **HARMONIOUS**

The relational climate of the interaction was generally:

- **SELF-CENTERED**: 1 2 3 4 5 6 7 **OTHER-ORIENTED**

The relational climate of the interaction was generally:

- **CONNECTED**: 1 2 3 4 5 6 7 **DISCONNECTED**
The relational climate of the interaction was generally:

SUPPORTIVE 1 2 3 4 5 6 7 UNSUPPORTIVE

OK

The relational climate of the interaction was generally:

TOGETHER 1 2 3 4 5 6 7 APART

OK

The relational climate of the interaction was generally:

SOCIABLE 1 2 3 4 5 6 7 UNSOCIABLE

OK

The relational climate of the interaction was generally:

UNATTACHED 1 2 3 4 5 6 7 ATTACHED

OK

The relational climate of the interaction was generally:

INCOMPATIBLE 1 2 3 4 5 6 7 COMPATIBLE

OK
The relational climate of the interaction was generally:
FRAGMENTED 1 2 3 4 5 6 7 COHESIVE

The relational climate of the interaction was generally:
COMPETITIVE 1 2 3 4 5 6 7 COOPERATIVE

The relational climate of the interaction was generally:
UNFRIENDLY 1 2 3 4 5 6 7 FRIENDLY

The relational climate of the interaction was generally:
INDIVIDUALISTIC 1 2 3 4 5 6 7 COLLECTIVISTIC

The relational climate of the interaction was generally:
UNIFIED 1 2 3 4 5 6 7 DIVIDED
Next, we have a few questions about how you feel about your experience during the exchange process, including how you feel about the outcomes of the transfers. For example, do you feel pleased or displeased, surprised or unsurprised?
Like the previous questions, for the following questions you will be presented with a pair of words and asked to choose which best describes your experience during the transfer process. Again, imagine a scale for each pair of words listed, and keep in mind that sometimes the "positive" label will be on the right, and sometimes it will be on the left.

During the transfer experience, I generally felt:

PLEASSED 1 2 3 4 5 6 7  DISAPPOINTED

During the transfer experience, I generally felt:

PART OF THE GROUP 1 2 3 4 5 6 7  ON MY OWN

OK
During the transfer experience, I generally felt:

**EFFECTIVE**

1 2 3 4 5 6 7

**INEFFECTIVE**

OK

During the transfer experience, I generally felt:

**FRUSTRATED**

1 2 3 4 5 6 7

**SATISFIED**

OK

During the transfer experience, I generally felt:

**GOOD**

1 2 3 4 5 6 7

**BAD**

OK

During the transfer experience, I generally felt:

**HAPPY**

1 2 3 4 5 6 7

**UNHAPPY**

OK

During the transfer experience, I generally felt:

**LEFT OUT**

1 2 3 4 5 6 7

**INCLUDED**

OK
During the transfer experience, I generally felt:

**SURPRISED** 1 2 3 4 5 6 7 **UNSURPRISED**

**OK**

During the transfer experience, I generally felt:

**POSITIVE** 1 2 3 4 5 6 7 **NEGATIVE**

**OK**

During the transfer experience, I generally felt:

**LET DOWN** 1 2 3 4 5 6 7 **DELIGHTED**

**OK**

During the transfer experience, I generally felt:

**SUCCESSFUL** 1 2 3 4 5 6 7 **UNSUCCESSFUL**

**OK**
Finally, we have a few questions about your own intentions during the transfer opportunities. Think about the DECISIONS YOU MADE during the transfer opportunities. During the transfer process, what considerations or factors influenced your decisions? For example, were you trying to be considerate? Did you try to make as much money as possible?

The following questions are in a slightly different format than previous questions. For the following questions, you'll be presented with a consideration, such as "Being nice" and you'll be asked to rate the importance of the consideration on a scale from not at all important to very important. Again, imagine a scale between the two endpoints.

You will click on the number which you feel best describes how important each of the following considerations was, with 1 being not at all important, 7 being very important, and 2, 3, 4, 5, and 6 representing degrees between the two.

LET'S TRY AN EXAMPLE:

When I decided whether or not to give points, the following consideration was usually:

BEING NICE

NOT AT ALL IMPORTANT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | VERY IMPORTANT

You would select 1 if being nice was not at all important in your decision making process, 7 if being nice was very important in your decision making process, or 2, 3, 4, 5, or 6 if being nice was some degree of importance between the two endpoints.
When I decided whether or not to give points, the following consideration was usually:

**CONCERN FOR SELF**

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<thead>
<tr>
<th>NOT AT ALL IMPORTANT</th>
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<th>VERY IMPORTANT</th>
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**MAKING AS MUCH MONEY AS POSSIBLE**

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<th>NOT AT ALL IMPORTANT</th>
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**EXPECTING THAT OTHERS WOULD GIVE ME POINTS**

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<th>NOT AT ALL IMPORTANT</th>
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**HELPING OTHERS TO MAKE AS MUCH MONEY AS POSSIBLE**

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<th>NOT AT ALL IMPORTANT</th>
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**COMPETING WITH OTHERS**

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<th>NOT AT ALL IMPORTANT</th>
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<th>4</th>
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<th>VERY IMPORTANT</th>
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When I decided whether or not to give points, the following consideration was usually:

**Assuming my giving would be returned**

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<th>NOT AT ALL IMPORTANT</th>
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**Being generous**

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**Concern for others**

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**Whether or not a partner recently gave points to me**

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**Being trustworthy**

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When I decided whether or not to give points, the following consideration was usually:

**AVOIDING BEING “TAKEN ADVANTAGE OF”**

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When I decided whether or not to give points, the following consideration was usually:

**DOING SOMETHING NICE FOR SOMEONE ELSE**

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When I decided whether or not to give points, the following consideration was usually:

**MAXIMIZING EVERYONE’S PROFIT**

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When I decided whether or not to give points, the following consideration was usually:

**MAXIMIZING MY OWN PROFIT**

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</table>
Thank you for completing the questionnaire! Please click "OK" to continue.

A NOTE FROM MONICA WHITHAM, PRINCIPLE INVESTIGATOR

Now that you have finished the experiment, I’d like to tell you a little about it. However, before I tell you about it, I’d like to ask that you keep the following information to yourself. Because your friends may participate in the experiment, it is important that you don’t talk to them about the experience or about the information on the next screen. If participants knew about the experiment beforehand, it might influence how they act in the experiment, which would make the results inaccurate.

So please promise not to tell anyone about the experiment!
Debriefing Script: No Social Identity Condition

The experiment is part of a research project studying cooperation and group identity. The first part of the experiment, in which you selected your preference between two group names, varied by experimental condition. In some conditions, participants received feedback that their choices identified them as a particular type of person and were told that they would be interacting with others who were also people of this type. However, their preferences did not actually identify them as a particular type of person. The feedback was designed to create a sense of group identity in order to see if this had an impact on levels of cooperation in the second part of the experiment. The experimental condition in which you participated was a “control” condition used for comparison purposes; the first part of the experiment was not designed to create a sense of identity with your fellow participants, and thus you received no feedback regarding your choices.

The second part of the experiment, in which you had opportunities to give points to and receive points from fellow participants, was designed to test how group identity affected levels of cooperation among participants.

OK

Debriefing Script: Category-Based Social Identity Condition

The experiment is part of a research project studying cooperation and group identity. The first part of the experiment, in which you selected your preference between two group names, was designed to create a sense of group identity. While some participants received no feedback regarding this portion of the experiment, you were told that you were being placed into an interaction category with others who had similar linguistic preferences. However, we did not actually assign participants to interaction categories. The feedback was designed to create a sense of group identity with your fellow participants, in order to see if this had an impact on levels of cooperation in the second part of the experiment.

The second part of the experiment, in which you had opportunities to give points to and receive points from fellow participants, was designed to test how group identity affected levels of cooperation among participants.

OK
Debriefing Script: Symbolic Social Networks Condition

The experiment is part of a research project studying cooperation and group identity. The first part of the experiment, in which you interacted with your fellow participants to select a group name, was designed to create a sense of group identity among participants in order to see if this had an impact on levels of cooperation in the second part of the experiment.

The second part of the experiment, in which you had opportunities to give points to and receive points from fellow participants, was designed to test how group identity affected levels of cooperation among participants.

Closing screen (same across conditions):

THANK YOU!

Thank you very much for participating in the experiment. The experimenter will come in your room shortly, to pay you the money you have earned in the experiment and to answer any questions you have about the experiment. It may be a few minutes, since we talk to each of you individually. We appreciate your patience.

While you wait, please use the space below to write any comments you have about your experience during the experiment.

[Participants could type comments here.]
## APPENDIX C. CORRELATIONS AMONG VARIABLES

**Table A1:** Correlations among Individual Level Variables (N = 8,433)

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<th>Age</th>
<th>Education</th>
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*P ≤ .10, *P ≤ .05, **P ≤ .01, ***P ≤ .001
Table A2: Correlations among Community Level Variables (N = 99)

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<th>Divisiveness in Local Politics</th>
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<td>.091</td>
<td>.426***</td>
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* P ≤ .05, ** P ≤ .01, *** P ≤ .001
REFERENCES


Merton, Robert K. and Alice S. Rossi. 1968. “Contributions to the Theory of Reference


Verba, Sidney, Kay Lehman Schlozman, and Henry Brady. 1995. Voice and Equality:


Yamagishi, Toshio and Toko Kiyonari. 2000. “The Group as the Container of


