

PERCEPTIONS OF TASK AND SOCIAL RELATIONSHIPS IN GROUPS:
EXPLORING THE EFFECTS OF COGNITIVE COMPLEXITY ON NETWORK
ACCURACY, CENTRALITY, AND STRUCTURATION

BY

MELISSA DOBOSH

DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Communication
in the Graduate College of the
University of Illinois at Urbana-Champaign, 2014

Urbana, Illinois

Doctoral Committee:

Professor Marshall Scott Poole, Chair

Professor John Lammers

Associate Professor Leanne Knobloch

Professor Noshir Contractor, Northwestern University

ABSTRACT

Given that studying both task and social relationships between and among group members is an inherently complex web, a network lens emerges as a valuable tool in understanding and exploring the social side of groups. Using a model of network structuration, perceptions of group connections highlight underlying and enduring interaction patterns that shape how group members communicate with one another. In other words, communication networks are structures of perceived communication relationships that guide communication, but then are in turn shaped by that communication. In order to better understand these group perceptions and network structuration, cognitive complexity, a variable tied to the development of an individual's interpersonal construct system, emerged as a way to make sense out of these perceptions.

Cognitive complexity was proposed a mediating variable that impacted how accurately individuals perceive their communication networks, as well as shaped how central one was perceived to be in their communication networks. Leadership teams of social organizations where members worked closely together to accomplish task goals, while simultaneously balancing social relationships, were explored. While hypotheses directly linking cognitive complexity to both network accuracy and centrality were not supported, it emerges that satisfaction and organizational identity are playing larger role in the relationship between perceptions, accuracy, and centrality. Additionally, one's perceived centrality in one network appeared to affect different types of communication relationships and the network structuration process.

*For my mother, who relentlessly supported, loved, and believed in me.
I know you would be proud.*

ACKNOWLEDGMENTS

Many people helped me on this journey. I would like to thank my incomparable advisor, Dr. Scott Poole, for his continued support, advice, and faith in me and this project. This process was definitely a marathon, not a sprint, and I could not have done this without having him in my corner. I would also like to thank Dr. John Lammers, Dr. Leanne Knobloch, and Dr. Nosh Contractor. Not only did their expertise, insights, and advice help shape this project, but they, along with my advisor, showed me what high quality research, teaching, and mentoring look like. Finally, I am indebted to my amazing undergraduate researchers, Angeline and Jake, who assisted in the collecting and coding of my data.

My phenomenal family and friends stood behind me through not only this process, but all that life has thrown at me. Their willingness to always listen, encourage, and love has kept me grounded and I appreciate them all more than they could ever know. I am especially thankful to my dad for his unwavering support even when he does not completely agree with me. I am grateful to have husband who believes in me even when I doubt myself. Marrying Peter was the smartest thing I ever did. Finally, to my daughters Lila and Charlotte, thank you for simultaneously distracting and motivating me. I am blessed and proud to be the mom of such beautiful and crazy girls.

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	1
CHAPTER 2 LITERATURE REVIEW	7
CHAPTER 3 METHOD	51
CHAPTER 4 RESULTS	75
CHAPTER 5 DISCUSSION	98
REFERENCES	107
APPENDIX A COGNITIVE SOCIAL STRUCTURE MEASURES	123
APPENDIX B COGNITIVE COMPLEXITY MEASURES	126
APPENDIX C ADDITIONAL MEASURES	127

CHAPTER 1

INTRODUCTION

When reflecting on our own personal group experiences, it makes sense that relational dynamics play a key role in group communication. While working in groups, the camaraderie that we experience (or fail to experience) often serves a key factor in how positively or negatively we feel about the group. Engaging in small talk before a meeting begins, developing inside jokes with fellow group members, and providing tension release when task-related issues become too intense are just a few relationally-oriented experiences that group members can share. The connections we make with fellow group members, the type of climate that the group provides, and the satisfaction we feel both during and after the group interaction are all vital parts of the group process that both impact and extend beyond task accomplishment, highlighting the inextricable link between task and social dimensions of group communication.

Despite this link, much of group research has emphasized the task dimensions of group communication, offering only a superficial or secondary glance at the relational functions within a group (e.g., Barker et al., 2000; Keyton, 1999; Keyton, 2000; Keyton & Beck, 2009). In doing so, a truly rich understanding of groups is being held just beyond our reach. Therefore, in order to fully grasp the complexities of group communication, attention must be paid to both task and social relationship dimensions. It becomes necessary to refocus our attentions and more fully explore the implications and impacts of social communication, in addition to task communication, in groups. Given that studying these relationships between and among group members is an inherently complex web, a network lens emerges as a valuable tool in understanding and exploring the social side of groups.

The communication discipline, specifically the study of communication networks, has largely relied on self-report data. This reliance was called into question during the late 1970s and early 1980s when several works by Bernard, Killworth, and Sailer indicated that what people said they were doing did not line up with what they were actually doing (for a review see Bernard, Killworth, & Kronenfeld, 1984). While this seemed problematic, Freeman and Romney (1986) argued that, while people may inaccurately recall specific instances of interaction, their recollections may actually highlight enduring patterns of interaction. Further, the well-known Thomas Theorem posits that “If men [sic] define their situations as real they are real in their consequences” (in Krackhardt, 1987, p. 112), highlighting the power that perception has in shaping reality. Richards (1985) also pointed out that many social and psychological theories are based on perceptions. Thus, there is great value in exploring people’s perceptions about both their own interactions and the interactions of people around them because they may highlight underlying communication patterns and shape the communication between people.

Perceptions have great power in shaping the ways in which people communicate, significantly impacting communication networks. The perceptions that one individual has about their own relationships with fellow group or organization members may influence how they interact with them. However, it does not end there. Perceptions that this same person has of a fellow group member’s perception of a third party, known as three-party metaperception, can also impact this person’s interactions with all parties (Kenny, 1994; Kenny, Bond, Mohr, & Horn, 1996). An individual’s communication with another person may be shaped by who they think that person knows or does not know (Krackhardt, 1987). For example, if Person A believes that Person B and C have a relationship, Person A’s communication to Person B may be shaped by the belief of Person B and C’s relationship. It is a moot point if Person B and C do

not have the relationship as perceived by Person A because just the belief of its presence is affecting communication in the network. Perceptions, not just actuality, affect the ways in which people communicate and should be explored.

Further, perceptions about the communication and relationships among the people that one interacts with can shape the ways in which they organize. According to Kenny et al. (1996), “If there is not agreement among members of a network concerning who likes whom, the social networks reflect only cognitive constructions and not a real social structure” (p. 929). In a sense, it is the perceptions of organization members that shape organizational dynamics. Further, the ability to accurately perceive these communication networks, thus understanding the social dynamics and structure, can serve as a source of power for group and organization members (Krackhardt, 1990). This has significant implications for communication in groups and organizations because one’s ability to accurately perceive the relationships among others can serve as means to either maintain or amplify power inequalities within the organization (Simpson, Markovsky, & Steketee, 2011).

Additionally, perceptions have very real consequences for how people act. Pittinsky and Carolan (2008) claimed that teachers managed their classrooms (e.g., assigning students to groups and creating seating charts) based on their perceptions of friendships among students. Unfortunately, their study found that teachers may be vastly under-perceiving the presence of these friendship ties. Perceptions, despite being inaccurate, informed teacher action. Further, Ryan (2011) found that people’s voting choices were potentially influenced by those they believed to have political knowledge. Again, simply the perception of political knowledge, not necessarily “real” knowledge, was enough to influence the perceiver and shape their subsequent actions. In both cases, perceptions, not necessarily what was deemed accurate or true, are

shaping actions. Thus, perceptions have real implications for how people communicate and interact and it becomes imperative to understand what shapes these perceptions.

Identifying and investigating variables that affect the perceptions that a person has about their own task and social relationships as well as those relationships between fellow group members will lead to a more comprehensive understanding of the communication networks. However, to say that this is a linear process where certain variables affect perceptions which then shape actions is too simplistic. Instead, Corman and Scott (1994) posited a different way of thinking about communication networks, claiming “the network is an abstract structure of perceived communication relationships that function as a set of rules and resources that actors draw upon in accomplishing communication behavior” (p. 181). In other words, one important class of rules and resources operating in this case are individuals’ perceptions about relationships among network members, which suggest rules for who they should talk to and who should talk to whom and is a resource to guide the individual’s behavior in the network. These perceived relationships guide their communication. However, the communication then serves to reshape the perceptions through the structuring process, which is complex and recursive.

Thus, when exploring group task and social relationships, the perceptions that people have about the relationships between fellow group members become especially important because they can shape communication with the group. Group members will act based on their perceptions of the social landscape and their observations of actions can potentially reshape or confirm their perceptions. Their understanding, whether accurate or not, of who is connected to whom will guide their interactions and has implications for the relational dynamics within the group. Therefore, this project seeks to explore task and social dimensions of groups, the perceptions that members have about the relationships within these groups, and the variables that

potentially impact these perceptions within a model of network structuration. Through investigating socially-oriented groups facing significant task demands, this project will examine the perceptions that group members have about their own friendship and task associations with fellow group members, as well as their perceptions about the friendship and task associations between fellow group members. Variables that impact network perceptions will be discussed and, cognitive complexity, which has implications for social perception skill, impression formation, and communication, will be proposed as a new variable to explore in its relation to network perceptions and structuration.

This project will contribute to our understanding of the complexity of group communication by exploring both the task and social relationships present within all groups. While socially-oriented groups engaging in significant task activities will be explored in this project, there are implications for all types of groups. By recognizing the inextricable link between task and social elements, this project will provide a rich, as well as realistic, view of the communicative relationships that make up the reality for most groups members in all types of organizations. Further, because perceptions are a class of rules and resources that guide and shape our expectations of communication, this project will provide insight into variables affecting this process of network structuration, contributing to and extending Corman and Scott's (1994) model. Recognizing and striving towards a comprehensive picture of the varied communication present in groups will provide a richer understanding of how individuals communicate within their groups and organizations.

This dissertation is organized as follows: Chapter 2 will synthesize relevant literature on relational communication in groups, focusing on the importance of exploring both socially-oriented and task-oriented communication. Relevant research on variables affecting network

perceptions, as well as a model for network structuration, will be discussed. Cognitive complexity will be proposed as a variable for better understanding these relationships and hypotheses and research questions will be proposed. Chapter 3 will outline the methods that were used to test the hypotheses and answer the research questions, while chapter 4 will present descriptive and correlation data for the variables investigated, as well as the analysis and findings surrounding the hypotheses and research questions. Finally, chapter 5 will discuss the findings and proposed explanations, discuss the strengths and limitations of this project, and provide future research directions.

CHAPTER 2

LITERATURE REVIEW

Through a review of the literature on personal relationships in groups, this chapter will explore the nature of socially-oriented groups, along with the effects and influences of both task and relational ties within and across these groups. First, the importance of understanding and investigating relational communication in groups will be discussed. Second, shifting from studying task-oriented groups to more socially-oriented and blended groups will offer fresh insights that enhance our understanding of group communication. Finally, several variables that influence relational group processes and outcomes will be explored for their impacts both within and across groups.

Further, the perceptions that individuals have about their own relationships with others, as well as their perceptions about the relationships between others will be discussed. Variables that impact these perceptions including demographic and personality variables, social structure, and interaction will be discussed. Additionally, since perceptions serve to highlight enduring patterns of interaction that both shape and are shaped by communication, Corman and Scott's (1994) model will be posited as a framework for better understanding the impacts of these perceptions on group interaction.

Finally, cognitive complexity, which correlates to personality and social structure and impacts interactions, will be proposed as a variable which should be explored when investigating network perceptions. Cognitive complexity influences the ways in which people perceive and classify phenomena, form impressions, and then use that information to act, thus shaping the network structuration process.

Re(Focusing) on Relational Communication in Groups

A basic definition of group communication states that groups are comprised of interdependent members united by a common goal or purpose (Beebe & Masterson, 2012). This goal may take many forms and can vary on a spectrum ranging from more task-oriented to more relationally-oriented goals. However the goal is characterized, groups will face both task and social realities as they work together towards this common purpose (Scheerhorn & Geist, 1997). As group members strive to make a decision or coordinate efforts, their task accomplishment is often contingent on the social reality of the group in terms of the communication and relationships among members. Thus, relational communication helps to keep the group together so that it can accomplish a task (Scheerhorn & Geist, 1997).

Additionally, the group context differs from an interpersonal context due to the multiple relationships that are simultaneously being managed within a group (Keyton, 1999). As group size increases, so do the number of intertwined relationships among group members. The sheer complexity of overlapping and developing personal relationships among group members can be messy and has implications for all group processes. Relational communication in groups reflects its own unique and complex context and is defined below:

“Relational communication in groups refers to the verbal and nonverbal messages that create the social fabric of a group by promoting relationships between and among group members. It is the affective or expressive dimension of group communication, as opposed to the instrumental, or task-oriented, dimension “(Keyton, 1999, p. 192).

Relational communication has not necessarily been ignored in groups. Many group researchers readily acknowledge the importance that the impact of maintenance or relational

messages has on task elements of group interaction. Bales (1950, 1953) posited that groups face an equilibrium problem where they have to manage task and relational goals. In addition to coding group interaction for task-oriented messages concerned with providing or receiving information, opinions, and suggestions, he coded both positive and negative social-emotional messages concerned with showing solidarity or antagonism, agreement or disagreement, and tension release or tension. Bales acknowledged that laughing, joking, helping, rewarding, and agreeing, along with rejecting, withdrawing, defending one self and deflating others, all contributed to and impacted the group interaction.

Benne and Sheats (1948) also heeded the relational side of groups, outlining functional group roles that reflected not just task achievement, but also group-building and maintenance. Such relational roles included encouraging, harmonizing, and compromising, along with engaging in gatekeeping, standard setting, observing, and following behaviors. Going a step further, Barge and Hirokawa (1989) included relational functions as an essential part of group's communication competence. Having members help a group effectively manage conflict by focusing on issues rather than personalities and use positive verbal and nonverbal messages to maintain a supportive climate are seen as important factors that work alongside more the traditional task competencies associated with problem and solution orientation.

Relational issues are also highlighted in the Group Working Relationship Coding System (Poole, 1983; Poole & Roth, 1989) which is based on the idea that relationships can only be understood through focusing on interchanges among group members. Group communication is coded for periods of (1) focused work where focus is on the task with no member disagreement, (2) critical work where focus is on the task, but there is some member disagreement, and (3) opposition where disagreements are openly expressed and member take sides. Additionally,

strategies for managing opposition including (4) open discussion, (5) tabling, and (6) capitulating. While these six coding categories are embedded in group member relationships, they are primarily task focused. However, a final coding category, (7) integration, highlights relational communication by reflecting on periods when the group is not task focused, displaying tangents, joking, and positive socioemotional interaction.

While these examples clearly indicate that relationships do matter in group communication, the focus on the relational side of groups has been secondary or supplementary at best (Keyton, 2000). Often, relational variables, relational messages, and relational outcomes are simply given a cursory nod when compared to the in-depth focus that group task has received. Several factors have contributed to this inequity. First, groups are united in a common goal or purpose and often viewed as “doing something”. This focus on accomplishment is often task-oriented in nature. Even more socially-oriented groups are often faced with decisions to make, problems to solve, and coordination. Thus, identifying and focusing on the task activity (even within social groups) is simpler (Keyton, 2000). It is easier to investigate group process and outcomes in terms of decisions being made, reports or projects being created, and solutions being implemented. Second, much of group research historically utilized zero-history groups in laboratory settings, often comprised of undergraduate students (Keyton, 1999, 2000).

Unfortunately, while these types of groups have offered unique insights into group dynamics and served as a stepping stone to exploring more naturally occurring groups, relational communication issues tend to not be a substantial and integral part of these artificial settings.

Finally, group communication research has reflected more traditional research interests, focusing on the individual over the group unit and reflecting a more male-oriented domain (Keyton, 1999,

2000). In order for relationships in groups to be adequately explored, the focus needs to be on interdependence of group members as opposed to the independence of group members.

Ignoring the relational side of groups has offered an incomplete picture of group interaction and shifting the focus to highlight relational communication as, at the very least, of equal importance to task communication in groups is essential. Embracing the relational communication group work that has been done and taking it even further has implications for how we communicate in all types of groups across all spectrums. In fact, most of the groups that individuals belong to are not necessarily the traditional task-oriented groups that have been studied. Many groups, such as friendship circles, book clubs, and church groups, exist solely to fulfill relational needs. Additionally, relational implications are intricately linked to task issues in all types of groups and the nature of group interdependence highlights the importance of member relationships (Keyton, 1999). Therefore, in ignoring or offering only a cursory glance at the relational side of group, researchers are limiting the capacity we have for understanding group communication.

Fortunately, in the last ten years or so, group researchers have begun to answer this call and fill the void in our understanding of groups. Recent research has shown a shift towards exploring more socially-oriented groups such as families, support and self-help groups, religious groups, play and peer groups, friendship groups, card groups, poker groups, book groups, fraternities and sororities, and intramural teams. These are the types of groups that comprise a great number of our group memberships and, despite being socially-oriented, still have implications for task accomplishment and our communication in more task-oriented groups. Additionally, relationally-oriented variables that affect both group process and outcomes such as

climate, satisfaction, conflict, cohesiveness, stress, group hate, commitment, trust, and affinity (Barker et al., 2000) are being increasingly explored.

However, there is still significantly more work to do in giving group relational communication its rightful place. Keyton and Beck (2009) claimed “the focus on task groups and task-oriented interactions leaves the relational aspect of group interaction undertheorized” (p. 14). One such area of further exploration includes workplace friendships where personal and professional lines are blurred. Despite being prevalent in organizations, these relationships are still among the least studied types of organizational relationships (Sias, 2009). While “workplace friendship” reflects an interpersonal, dyadic relationship, these relationships are embedded within a group and organizational context, influencing group processes and outcomes. Additional focus can also be placed on further explicating the task and relational aspects of communication messages, along with understanding how group relationships are impacted by the variety of collaborative communication technologies at a group’s disposal (e.g., Sias, Pedersen, Gallagher, & Kopaneva, 2012). Thus, continued efforts towards understanding socially-oriented groups, relational variables within all types of groups, and interdependence amongst group members is essential and offers many avenues for continued scholarship.

Shifting towards Socially-Oriented Groups

While all groups face both task and social realities, research has focused on more task-oriented groups. Often, these are groups that are unified by a task-oriented goals or needs. Within organizations, these are teams, committees, and task forces “identifying problems, proposing solutions, and implementing policies” (Greenbaum & Query, 1999, p. 539). While relational communication factors into the decision making and problem solving process, it is

often viewed in relation to task process and outcomes. While studying task-oriented groups is provides valuable insights into group communication, the reality is that we are embedded in all types groups from the day we are born and these groups are not just limited to task groups (SunWolf, 2008).

Furthermore, as group research trends towards the study of naturally occurring groups in lieu of (or in addition to) laboratory groups (e.g., Frey, 2002, 2003), socially-oriented groups emerge as a natural area for inquiry. Bona fide group theory, which emphasizes the permeability of group boundaries, posits that individuals are simultaneously managing multiple group memberships and the roles that they play in certain groups influence expectations and enactments of their roles in other groups. This suggests that our roles and experiences in one group could affect how we communicate in other groups to which we belong. Thus, understanding how individuals communicate in socially-oriented groups may also provide insight for their communication in more task-oriented groups. Shifting towards an investigation of socially-oriented groups will allow a more inclusive understanding of group communication and the emphasis that these groups place on relational needs will allow us to better understand the relational side of all groups.

Socially-oriented groups are defined as those groups who exist primarily to fulfill personal and relational needs (Keyton, 1999). Membership to these groups can be voluntary (e.g., friendship circles and support groups) or involuntary (e.g., families) (SunWolf, 2008). In both cases, these groups strive to fulfill member needs for inclusion and affection and the relationships among members are the primary emphasis. The first example of these socially-oriented groups is our family, but our memberships to a variety of other types of socially-oriented groups extend throughout our life span. Additional examples include children's play

and social groups, neighborhood groups and gangs, church groups, social support and self-help groups, and friendship groups. Card, poker, and book groups, along with intramural sports teams and fraternities and sororities, are also considered socially-oriented groups.

Families

Socha (1999) claimed that “group communication learned in families, the first group, might form a foundation for principles that govern people’s behavior in other groups” (p. 476). Similar to other types of groups, families are characterized as a collective unit that also has a complex web of personal relationships between and among family members. Socha argues that what is learned in a family of origin goes on to shape what happens in future families and, by extension, what happens in groups outside the family. Learned communication patterns, whether effective or ineffective, will often be relied upon when communicating with members of groups outside the family. Further, the tensions that families experience, such as balancing flexibility and stability, along with managing constantly shifting boundaries throughout a life span, are similar to challenges face by more traditional, task-oriented groups.

Petronio, Jones, and Morr (2003) investigated how families managed their privacy. Families, as a single unit or dyads, triads, and larger coalitions within the family unit, coordinate rules and negotiate boundaries in connection with how private information is handled. Family privacy dilemmas refer to “privacy predicaments managed by family members making decisions collectively or individually that results in consequences (costs and benefits) for one or more family group members where there is no satisfying solution” (Petronio et al., 2003, p. 30). Family members struggled with expectation of being privy to private family information, while also desiring to be separate from potential consequences of private information. This dilemma

reflects the challenge faced by not only by families, but by all groups: the struggle to be both a group member and an individual member of a group.

Children Peer Groups

If the family of origin serves provides initial context for group interaction, children peer and social groups also serve as a fertile ground for learning and applying group communication principles. According to SunWolf and Leets (2003), “A significant portion of every child’s life develops in the context of small social peer groups” (p. 356). These are peer groups characterized by game play and little to no adult supervision. As children enter into a world beyond the family context, they are thrust into learning the sometimes harsh lessons about being included or excluded. They join (or are excluded) from groups, receiving a crash course in how to interact within these groups and identifying boundaries that separate insiders from outsiders. Their sense of self that has been in development based on family interaction is challenged or altered as new identities emerge from their play group interaction (SunWolf & Leets, 2003).

In children’s task groups, Socha and Socha (1994) found that children had trouble managing conflict, dividing up tasks, and using time effectively. Children shouted suggestions at one another, whispered in dyads, spoke at the same time, while also engaging in uneven turn-taking and marginalizing some group members. These behaviors go against basic recommendations of effective small group communication (e.g., Beebe & Masterson, 2012). However, these were groups with adult supervision. When unsupervised and engaging in game play, behaviors and communication that lead to inclusion or exclusion may become more extreme.

In a series of studies that explored peer group social exclusion, adolescent participants referred back to traumatic incidents of being excluded from early childhood as opposed to more recent middle or high school years (SunWolf & Leets, 2003; SunWolf, 2008). Negative feelings associated with peer rejection at such an early age stuck with participants, with several participants indicating feelings of continuously being left out. These experiences also impacted how adolescents reacted to the exclusion of others, often feeling heightened levels of stress than when compared to their more included peers. Additionally, being rejected in childhood peer groups has been linked to later antisocial behavior (e.g., Dodge, et al., 2003), as impacting later school adjustment resulting in feelings of loneliness, desire to avoid school, and decreased participation at school (e.g., Buhs & Ladd, 2001). This suggests that early group experiences, especially if negative, can impact our future group experiences, potentially leading individuals to minimize their presence in groups or avoid them altogether.

Neighborhood Groups and Gangs

Neighborhood groups and gangs also have implications for group communication. Defining a neighborhood may start with geography or spatial boundaries but quickly extends to encompass dimensions such as social networks, professions, politics, race, economics, history, and architecture (Buchalter, 2003). Group members struggle to define themselves, their relationship to others, and their relationship to the environment as part of the process of understanding the permeable boundaries of their neighborhood. This struggle to ascertain borders both enables and constrains communication amongst members and can be extended to all group contexts.

Additionally, gangs, which often emerge from common neighborhood groups, are generally characterized by criminal activity (SunWolf, 2008), but may also be described as engaging in anti-social behavior (Ingoldsby et al, 2006). However, Conquergood (1994) also reported that gangs engage in nurturing and domestic communication emphasizing the relationship among group members as familial. Gang members communicate intricately and ritualistically, using both verbal and nonverbal messages that have meaning inherent in the context and work to define and redefine organizational boundaries by creating a sense of groupness through common language, as well as territorial lines.

Going beyond family and children peer groups, children often begin to spend more time with members of their neighborhood, including similar aged members, but also influential older peers. Ingoldsby et al. (2006) found that children experiencing significant conflict with their parents and living in a “disadvantaged” neighborhood were more likely to eventually engage in anti-social behavior and later join groups characterized by high anti-social behaviors. This is just one example of how communication in one group affects communication in another group and connections and implications of socially-oriented groups.

Religious Groups

Individuals often join religious groups to fulfill not just faith-based needs, but also to seek support and affiliation. Emphasizing the social nature of religious groups is instrumental in maintaining the health of the religious group. Scheitle and Adamczyk (2009) claimed, “Getting people to attend, participate, give money, and stay in a congregation are all influenced by how embedded they are in social network of the group” (p. 16). The church group well-being depends on members participating and contributing to the church and members are more likely to

do this (and enjoy it) when in conjunction with their friends. Thus, church groups are motivated to facilitate social ties amongst members.

These friendships among church group members develop for a couple of reasons. First, the regular activities provided by the church group allows for numerous opportunities for church members to develop personal relationships with other church members. For example, Smith (2003) found that parents and children's social networks were unintentionally merged through active participation in church activities. Second, church members may seek out personal relationships with other simply because they share the same faith (Kalmijn, 1998) or similar experiences (Kim, 2004).

Whether as a result of shared activities or a desire for similarity, Scheitle and Adamczyk (2009) found that the stronger an individuals' exclusive theological beliefs, the more likely they were to have friends coming from their church group. Specifically, a church member with exclusive theological beliefs is more likely to have many fellow church members as friends. A church group with similarly exclusive theological beliefs is more likely to foster friendships amongst its members. Finally, if the level of exclusive theological belief is equally high between a member and the church group, there will be even greater success developing friendships among church members. While these friendships among members provide great outcomes for the church group, these strong social ties among members may hurt the inclusion of new members who struggle to be included (Scheitle & Adamczyk, 2009).

Social Support and Self-Help Groups

While social support is often a side benefit to membership in family, neighborhood, and religious groups, social support groups formally organize for the main purpose of providing

mutual aid to members who face a common problem or have a common need (Cline, 1999). These dilemmas can stem from physical and mental illnesses to addictions and members turn to social support or self-help groups to fulfill support needs that are not adequately being met by other types of groups. Membership in self-help or support groups (as the terms are often used interchangeably) is voluntary and group members' share a common dilemma and search for common solutions to the dilemma while simultaneously providing and receiving support. Social support refers to individuals' needs for relational, confirmational, and instrumental care and is "manifest in communication processes" (Cline, 1999, p. 520). In other words, social support emerges from the verbal and nonverbal messages shared between and among group members as they strive to make sense out of and adapt to a difficult situation. They learn, practice, and modify communication skills that carry over to other group and interpersonal contexts.

The intersection between technology and support groups offers a new space for continued investigation. The internet offers individuals ways to connect either synchronously (reading and sharing messages at the same time) or asynchronously (reading and sharing messages at different times) and has allowed the make-up of support groups to change. Support groups that meet face to face often do so at predetermined times, include less than 15 members, and have a loose structure (Alexander, Peterson, & Hollingshead, 2003). However, the internet has allowed support groups to evolve where membership is no longer limited geographically and allows public access to the group 24 hours a day, 7 days a week. Similar to face-to-face support groups, online support groups provide informational, emotional, esteem, and tangible support in difficult times.

Many factors contribute to the types of support provided in online support groups. Campbell & Wright (2002) found a link between emotional support and online support group

member receptivity, immediacy, and similarity. In other words, appearing interested in fellow group members' problems, listening to them without judgment, and appearing to understand what they are going through is all linked to the provision of emotional support. Additionally, formal dominance was linked to less emotional support, while online support groups that promoted equality amongst members was linked with more emotional support. Finally, large, heterogeneous groups were found to provide more informational support, while smaller, more homogeneous groups provided more emotional support (Alexander et al., 2003).

Great challenges, however, lie in being able to effectively communicate social support online. Communicating receptivity, immediacy, similarity, and equality may be inherently more difficult through computer mediated channels where nonverbal messages are limited (or look very different than in face-to-face settings) (Alexander et al., 2003). Communicating concern or advice may be interpreted negatively by the recipient as they feel blamed for the problem or as though they are being criticized or directed (Burleson & MacGeorge, 2002). Additionally, there can be a disconnect between what is hoped to work in the online support environment and what people actually do (Aakhus & Rumsey, 2010). In other words, it is not necessarily the socially supportive act (e.g., offering advice), but the performance of the act (e.g., actually taking the advice) and the ongoing interaction between parties that provides the most effective support.

Friendship Groups and Blended Relationships

Our friendship groups or circles provide fertile ground for negotiating relationships, engaging in relational communication, and potentially influencing our group communication contexts. Unfortunately, within the communication field, friendship has largely been explored within a dyadic context and there is much to be gained through shifting the focus to friendship

groups (Goins, 2011). As groups increase in size, so does the complexity and number of personal relationships influencing group interaction.

According to Rawlins (1994), friendship is contextually negotiated so that it allows for diverse social forms. Friendship differs from other relationships in its voluntariness, personalistic focus, nature of affective ties, and nature of development (Sias & Cahill, 1998). People choose to be friends and privately negotiate the relationship. Friends do not limit the other to one role (such as an organizational role), instead viewing each other as a whole person. Friendships have affective ties, but differ from romantic relationships in terms of sexual feelings, possessiveness, and exclusivity. Finally, friendships appear to develop gradually, without the culminating turning points that mark changes other types of relationships (Sias & Cahill, 1998).

Friendships, while standing as its own type of group, also serve as an element of all other groups. For example, friendships have been considered especially important for marginalized groups. Specifically, friendships among Black females serve as sites of empowerment and resistance from oppression (Goins, 2011). These friendships groups serve as a “homeplace” where Black females feel safe to express and empower themselves, relax, share stories, gain strength, and maintain harmony in their lives (p. 531).

Additionally, workplace relationships often blend task and friendship elements creating a situation where working groups are inevitably impacted by the friendships among members. Within organizations, coworker friendships are plentiful and the development of these relationships results in significant benefits for both the individuals involved in the relationship and the organization in which the relationships develops (Sias, 2009, 2005). For example, Kram and Isabella (1985) found workplace friends provided decision-making, influence-sharing, and instrumental and emotional support systems for one another. Additional benefits of workplace

friendships include providing invaluable support and advice, easing stress, and preventing organizational burnout (Sias & Bartoo, 2007). Work friends tend to share and receive higher quality information (Sias, 2005), while also aiding in career advancement and serving as a buffer between superiors and subordinates (Sias, 2009). In addition to individual benefits, organizations enjoy reduced turnover, improved morale, and increased creativity. Thus, attending to both task and relational elements within the workplace and developing multi-faceted and close workplace relationships can positively benefit all involved.

However, there can be a negative side to workplace friendships. They can cause conflict and unethical behavior within the organization (Sias, 2009). Additionally, not all friendships stand the test of time. Consequences of workplace friendship deterioration include emotional stress, reduced ability to perform tasks, turnover, and altered perceptions regarding the role of friendships in the workplace (Sias, Heath, Perry, Silva, & Fix, 2004).

While there are benefits and potential downsides to these coworker friendships, they highlight that task and relational issues need to be attended to within all groups. These relationships, where friendship and business associations are fused together, are best described as blended relationships (Bridge & Baxter, 1992). In these blended relationships, the demarcation between task and social dimensions are not always so clear. The challenge lies in learning to navigate the different types of communication, both social and task-oriented, that will inevitably be relevant at some point.

Moving towards “Blended” Groups: The inevitability of both task and social dimensions

The delicate balance of navigating these blended task and social associations is hardly limited to co-worker friendships. To some degree, all groups are “blended”. For example, a

work team may start out as being predominantly task focused. Communication between group members may center on the task. However, as personal relationships develop among members, social communication (e.g., discussing personal lives, making plans outside of work) may become more prevalent. Balancing the different types of communicative relationships between group members becomes essential. Ignoring one over the other could hurt the group and new group goals of maintaining and protecting the friendships may become equal to, or even outweigh, the original task goal. The task and social realities of groups must both be considered when studying group communication.

While social realities are inevitable in more groups considered “task-oriented”, the likewise is true for “social” groups. Even for groups that come together for social reasons, task needs will emerge amongst members. Families manage finances, make decisions, and plan for the future. Religious groups, which rely on shared spiritual beliefs and co-participation in activities, are governed by leadership teams and committees which strive to recruit and retain members, plan activities, encourage participation in those activities, and manage financial contributions. Even in support groups, where support can take the form of information (providing factual advice or information), esteem (expressing interpersonal solidarity), network (facilitating interpersonal connections), or tangible (providing practical aid) (Xu & Burleson, 2001), the task and social realities of group communication are apparent.

Thus, a move towards conceptualizing all groups as blended to some degree may help to highlight the importance (and inevitability) of both task and social dimensions of communication and refocus on the relational side of groups as equally important to task. In order to have a comprehensive and complete picture of group dynamics, attention must be paid to both task and social realities of all groups.

Emphasizing Relational Dynamics Within and Across Groups

While groups may be described as being task or socially-oriented, relational dynamics will play a large role in all types groups. Group formation, interactions, and outcomes are all shaped by relational communication and variables. These variables both shape and are shaped by the group context. This next section will explore relational dynamics both within and across groups.

Variables such as gender, social identity, culture, and family impact relational communication in groups (Barker et al., 2000). Experiences connected to gender, social identity, culture, and family contribute to one's self-concept, impacting the formation, process, and outcomes of groups. For example, Kim (2004) found that second generation Korean-Americans sought out religious groups with other second generation Korean-Americans because of the shared experiences and culture. Goins (2011) found that Black female friendship groups provided a source empowerment for this marginalized group. Valenti and Rockett (2008) found that gender differences impacted a group member's tendency to interact within their group's friendship and advice network. Additionally, Socha (1999) claimed that what is learned in the family group continues to impact the expectations and interactions we bring to other groups.

Relational messages also influence group process and outcomes (Keyton, 1999). While all messages include task and relational content, the levels vary based on the specific message. In their investigation of breast cancer support groups, Keyton and Beck (2012) found that more socioemotional or relational messages helped create a supportive group climate. However, even within this socially-oriented group, there were significantly less relational messages than task messages being shared among members. Despite this abundance of task-oriented messages,

relational messages were still instrumental in creating the positive group climate, highlighting the power and impact of even a few relational messages.

However, relational messages still need to be communicated effectively and skillfully. At the beginning of a semester, freshmen who perceived themselves as skillful communicators were more likely to utilize friendship formation strategies throughout the semester, resulting in reports of more available resources from their social network (McEwan & Guerrero, 2010).

Additionally, effective use of teasing messages is reliant on group context. Schnurr (2009) found that the teasing styles of group leaders were shaped by group norms, while also simultaneously shaping those group norms.

The channels used to communicate also impact relational communication in groups. Computer mediated communication plays a large role in shaping how group members interact (Barker et al., 2000). For example, variables that were linked to friendship in face-to-face groups such as proximity were not as central when groups used technology to communicate (Sias et al., 2012). Instead, shared task was a larger contributor to friendship development. Use of the internet also impacted communicative processes and outcomes in social support groups (e.g., Alexander et al., 2003; Wright & Campbell, 2002).

These variables impact the relational process, highlighting the dynamic nature of group interaction and the continuous development of the group, relationships, and meaning (Keyton, 1999). One example lies in the management of tensions between task and relational elements in groups. Galanes (2009) found that leaders were not just having to manage task concerns with a group, but were also concerned with socializing, expressing feelings, having fun, harmonizing, attending to relationships, and managing discussions of the group. Thus, effective leadership is

potentially contingent on a group leaders' ability to successfully manage the relational dynamics in conjunction with the task needs.

Successful processes can result in positive group outcomes such as developing group norms, enhancing group cohesiveness, establishing consensus, creating a supportive climate, and creating feelings of satisfaction (Keyton, 1999; Barker et al., 2000). Satisfaction can be specific to an interaction or result from interaction (Keyton, 1991). Either way, group members who experience satisfaction with their group, also report their groups as being more cohesive and more likely to establish consensus (Anderson, Martin, & Riddle, 2001). Consensus, where everyone agrees with the decision, has been linked to supportive climates characterized by feelings of groupness (Pavitt & Curtis, 1998). Successful relational communication can also positively affect members' socialization into new groups and help them manage organizational change (Hart, Miller, & Johnson, 2003).

Unfortunately, there can be a dark side to groups that can occur when the relational processes go awry (Cupach & Sptizberg, 1994; Keyton, 1999, Barker et al., 2000). Groups that ineffectively manage conflict can have power struggles and escalation of discontent resulting in bullying behaviors among members (Tracy, Sandvik, Alberts, 2006). Further, when group members attribute failure to other group members, the result is having more negative socioemotional and maintenance messages present in the group interaction (Bazarova & Hancock, 2012). Groupthink can result from a group establishing a norm where consensus is the highest priority, resulting in a lack of critical thinking and false belief that everyone is in agreement (Janis, 1982). Further, group stress can occur when groups experience change such as from membership changes (Keyton, 1999).

While these relational dynamics mutually affect relational processes and outcomes within groups, they also impact communication across groups. Our perceptions of the relational dynamics in one group have implications for how we act in other groups. We carry multiple group memberships and these groups are often interdependent. Bona fide group theory relies on this concept, highlighting permeable boundaries and interdependence (Putnam & Stohl, 1996). For example, experiences of conflict experienced in the family group can predict affiliation with certain neighborhood groups (e.g., Ingoldsby et al., 2006) and memories of being excluded from childhood peer groups impacts our perceptions when we see others being excluded (SunWolf, 2008). Technological advancement also allows for increased intergroup communication as it allows for access to groups on a 24 hour a day, 7 day a week basis. Internet support groups offer more convenient meeting times, making it easier for members to be a part of and manage many more support group memberships (Alexander et al., 2003). Technology allows us to have friends not limited by geography (e.g., Sias et al., 2012) and may allow us to maintain relationships with more people.

When investigating groups, whether they are task or socially-oriented, it is important to recognize the implications of both task and relational elements. To ignore one in favor of the other simplifies the communication between group members and ignores the complexity of groups and organizations. Relational communication is a vital element of understanding group communication because many groups exist solely to fulfill relational needs, relational implications are related to task issues in all types of groups, and relationships are important due to the interdependent nature of groups (Keyton, 1999). However, exploring both task and social dimensions is important and, through refocusing group research on socially-oriented groups and emphasizing relational dynamics, in addition to task elements, within these groups, a richer and

more complex understanding of group communication will emerge. By focusing on the perceptions that group members have about these intertwined social and task relationships, a natural starting off point emerges as a way to better understand not just how members think about the connections in their group, but also how they then communicate with others.

What impacts our perceptions?

A number of variables have been explored for their impacts on perceptions of a variety of communication networks. Demographic characteristics and personality traits have implications for network perceptions, both in terms of accuracy and member attributions. Additionally, several elements of social structure have impacted perceiver accuracy, as well as how network members are perceived by others. Finally, the interaction between group members has served as a catalyst for how people perceive fellow group and organization members.

Demographic and Personality Variables

Several demographic and personality variables have been explored for their impact on network perceptions. The theory of homophily predicts that individuals are more likely to interact with individuals they believe to be similar to themselves in terms of a variety of characteristics and qualities (Monge & Contractor, 2003). If individuals perceive themselves to be similar to certain others in their groups, they may be more likely to engage in communication with them. For example, several researchers hypothesized that similarity in sex and race would encourage more communication ties between group and organization members. However, Yuan and Gay (2006) found that similarity in gender and race had no impact on the development of network ties and Valenti and Rockett (2008) partially supported this finding. Research results indicated that differences in age did not affect advice, friendship, or work-related networks.

Differences in sex, however, only impacted advice networks. Specifically, in male or female dominated groups, the members of the minority sex were less likely to seek advice from fellow group members. While there may be conflicting findings on these variables influencing the development of ties, Heald, Contractor, Koehly, and Wasserman (1998) reported that individuals of the same gender, in the same department, and in a supervisor-subordinate relationship were likely to have similar perceptions of their network.

In addition to sex, age, and race, religion also potentially influences network perceptions. Scheitle and Adamczyk (2009) found that individuals who had exclusive theological beliefs and belonged to a congregation with similarly exclusive beliefs were more likely to seek out friendships within the congregation. The perception that other members shared equally exclusive beliefs led to friendship development. These perceptions of similarity have significant implications for organized religious groups who actually can benefit from closer social ties among congregation members as these ties often result in more organization involvement, commitment, and even financial donation.

The need for achievement, along with affiliation and extraversion, has been linked to accurate perceptions of networks. Casciaro (1998) found that individuals who had a high need for achievement were more accurate in their perceptions of both friendship and advice networks within an organization. In other words, individuals who had a strong desire to succeed within their organizations were more accurate in predicting who went to whom for advice and which fellow members were friends. Additionally, Casciaro found that individuals with a strong need for affiliation and/or an extroverted personality were more accurate in perceiving friendship networks. However, this appeared to be at the expense of accurately perceiving advice networks.

In this case, it may be that more “people-oriented” individuals, characterized by a need for affiliation and extraversion, are more attentive to the social cues of their organization.

Another variable impacting perceptions networks is positive affectivity and engagement. Casciaro, Carley, and Krackhardt (1998) found that happy, enthusiastic, and positive people had a more accurate picture of the social dynamics occurring around them, accurately perceiving friendship ties of fellow organization members. Unfortunately, this accuracy did not necessarily transcend to their own perceptions about their place within the social structure of the group. Individuals characterized by positive affectivity significantly misperceived their role with advice networks, potentially perceiving more ties than they actually had. While positive affectivity affects the accuracy of member’s perceptions, Ryan (2011) found that engagement was positively related to one’s perceptions of another’s political expertise. Individuals who were passionate and enthusiastic about political issues were perceived by others as having more expertise. Unfortunately, this perception of “expertise” was based on how much they seemed to care about politics and not necessarily real knowledge.

Dominance and self-control have also been linked to network perceptions. Adolescents characterized as having less self-control were more likely to perceive higher acts of delinquency among their peers (Young, Barnes, Meldrum, & Weerman, 2011). These individuals were often engaging in more delinquent behavior and inaccurately projected their behavior onto others in their peer group. Further, dominance impacts perceptions in groups. Members perceived as highly dominant were also accurately perceived as being more central within their group. In other words, fellow group members accurately perceived that dominant group members were both receiving and sending more messages than less dominant members during group interaction (Brown & Miller, 2000).

Social Structure

In addition to demographic and personality variables, one's position within the social structure of a group or organization has implications for network perceptions. As discussed earlier, the ability to accurately perceive the relationships among group and organization members can serve as a source of power for organization members. This power can be formal or informal. Krackhardt (1990) found that members who accurately assessed their advice networks were seen as being more powerful by others in their network. However, Simpson et al. (2011) found that those low in power, from either a disadvantaged position or from a standard method of priming low power, were more accurate in assessing social ties than higher power individuals. Additionally, both Krackhardt (1990) and Casciaro (1998) found that individuals who held a formal position high in an organization's hierarchy had less accuracy in perceiving advice and friendship networks. The conflicting results may indicate base of one's power, as well as the type of network being addressed, impact perception accuracy. Further, members with less power, whether from a formal or informal base, may be more motivated to accurately understand the lay of the land within their group or organization so as to better shape their communication with more powerful members.

Centrality, which refers to how many connections and relationships one has with others in their network, also impacts perception accuracy. Grippa and Gloor (2009) found that members with high centrality in their organization were actually less accurate in recalling interactions with others. However, when it came to assessing the expertise of others, Su (2012) found that the type of centrality matters. Organization members with high degree centrality, engaging in direct communication with many other members on a frequent basis, were more

accurate in perceiving other's knowledge, while members with betweenness centrality, serving as "broker" between less connected individuals, were not found to be more accurate. Again, similar to power, it appears that less central members may be more motivated to accurately assess the relationships among group members. Unfortunately, their lower status position within the social structure of the group may hinder their ability to do so accurately.

Other social structure factors, such as working remotely or "part time" and tenure, further influence network perceptions. Casciaro (1998) found that part time workers were less accurate in perceiving advice networks in organizations. While this relationship did not hold up for friendship networks, this was attributed to the fact that some of the part time workers investigated had strong friendship ties already established with several coworkers and socialized with them outside of work, thus potentially increasing the accuracy of their perceptions (Casciaro, 1998). Further, Su (2012) found that individuals working remotely were less accurate in perceiving the expertise of fellow organization members. Finally, Yuan and Gay (2006) reported that student groups working together using computer-mediated technology developed more ties with members who were geographically local versus those who were not and Yuan, Gay, and Hembrooke (2006) posited that groups geographically dispersed tend to be more fragmented. These findings suggest that "being present" has real implications for how accurately individuals perceive the relationships, both work-oriented and personal, among fellow organization and group members.

Interaction

While demographic and personality variables, along with social structure, can shape perceptions, the ways in which people think about and actually interact with fellow organization

and group members can impact their perceptions about relationships. Feelings and direct actions with others shapes perceptions about the relationships among other group members (Kenny et al., 1996). For example, how Person A feels about Person B and C will influence how they think Person B and C feel about each other. Several heuristics shape these “third party metaperceptions”. The agreement heuristic suggests that if Person A likes and interacts with both B and C, then they will perceive that B and C also like and interact with one another. Additionally, the reciprocity heuristic suggests that if Person A perceives that B likes C, they will also perceive that C likes B. In other words, an individual’s perceptions and feelings about their own ties impact their perceptions about the ties between other people. Additionally, armed with their own knowledge of and relationship with fellow group members, Kenny et al. (1996) actually found that perceivers were pretty accurate in their assumptions about feelings that other group members had about each other.

The power of “liking” fellow group or organization members continues to impact network perceptions. For example, Xia, Yuan, and Gay (2009) found that individuals disliked by their peers were rated as performing poorly in their group despite being characterized as conscientious, emotionally stable, and open to experiences. Interestingly, members who engaged in frequent communication were perceived as more likeable and performing better with in the group. This suggests that engaging in frequent communication with fellow group and organization members can offset negative feelings and lead to more positive perceptions of individual performance.

However, Corman and Bradford (1993) claim “that a perceived social relationship with a group affects one’s tendency to overestimate communication with its members” (p. 832). So, if group members like each other, they may perceive that there is more communication ties among

the group than there really is. One reason for this may be that individuals tend to prefer balanced relationships among group and organization members (Krackhardt & Kilduff, 1999). So, if an individual believes that they have strong communication ties with fellow group members, they may be more apt to believe that these communication ties are reciprocated and shared within and among the group.

Additionally, one's perception about their own communication skill has implications for how they perceive their communication networks. For example, freshman who perceived themselves as skilled communicators were more confident in their ability to make new friends. They reported using more friendship formation strategies, leading to developing more friendships, and resulting in perceptions of a high availability of resources from their friendship network (McEwan & Guerrero, 2010).

Frequency of communication and interaction within groups serves as a double-edged sword when it comes to accurate perceptions. Young et al. (2011) found that peers in networks where everyone spent a lot of time interacting were more likely to misperceive peer delinquency. In this case, frequent communication led to inaccurate perceptions. However, Ottesen, Foss, and Gronhaug (2004) explored top management teams of small to medium sized organizations. They found that managers inaccurately perceived the amount of information being shared with customers, suppliers, and competitors. Despite these perceptual errors, and through interaction and careful discussion of issues with fellow management team members, top management teams were able to "recalibrate" their environmental perceptions and improve their perceptual accuracy of the communicative landscape. This suggests that communication among a group may lead to misperceptions, but can also serve as a tool for checking in and assessing accuracy with fellow members.

Structuration of Networks

This project has explored the very real implications for how perceptions of communication networks actually shape communication. Several variables have been explored for their effects on the accuracy of these perceptions. However, it is too simple to say that this is a linear process. Instead, the process is complex where perceptions shape actions, but actions then in turn shape perceptions. Perceptions have real implications for how people communicate and there are several variables that influence the accuracy of perceptions. Corman and Scott's (1994) model of network structuration offers a framework for understanding the complex social cognitive processes and social activation processes that shape communication behavior and perceived network links.

Corman and Scott's (1994) model is based on structuration theory. Giddens (1984) highlighted the duality of the observable pattern of relationships in a group (system) and the rules and resources that members draw upon to generate and maintain the group (structure). Structuration refers to "the processes by which systems are produced and reproduced through members' use of rules and resources" (Poole & Dobosh, 2010, p. 390). In other words, network members draw on rules and resources to continuously produce and reproduce itself. For example, a sports team may have a rule that says that if a player misses a practice the day before a game, they do not play in the game. When a player misses that practice and is forced to sit out the next day's game, the rule is being reproduced and becoming not just an action, but also an outcome. The rule becomes even more firmly grounded within the group reality. If the rule was not enforced and the player was allowed to play, the outcome would be that the rule becomes more fluid with open interpretation by group members. There are constant tensions between

action and structure and the structuration approach attempts to unearth and understand these tensions.

In acknowledging the duality of communication where every action simultaneously both draws on and constitutes structure, Corman and Scott (1994) posited that there is no network of communication *per se*, “instead the network is an abstract structure of perceived communication relationships that function as a set of rules and resources that actors draw upon in accomplishing communication behavior” (p. 181). In other words, communication networks, whether task or socially oriented, are structures of perceived communication relationships that network members’ communication, but then is also simultaneously shaped (or reshaped) by members’ communication. Figure 1 shows that perceived network links become evident in observable communication behavior through social activation processes, while social cognitive processes mediate the effects of the communication on perceived network links (Corman & Scott, 1994). This is a recursive process where observed communication effects network perceptions, while network perceptions, in turn, shape communication.

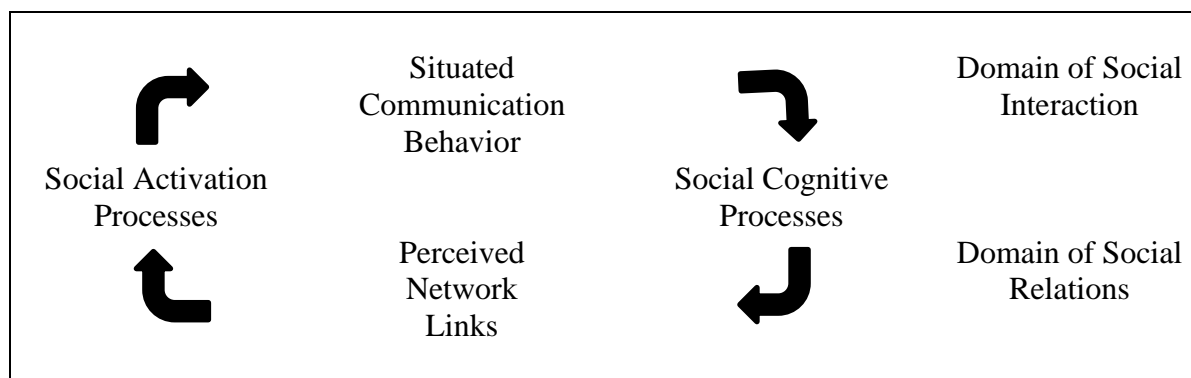


Figure 1. Relationship and mediating processes between observable communication and perceived networks (Corman & Scott, 1994).

In order to “clarify the main dimensions of the duality of structure in interaction, relating knowledge capacities of agents to structural features” (Giddens, 1984, p. 28), Corman and Scott (1994) identified three key modalities: reticulation, activation, and enactment (see Figure 2).

Reticulation signifies the previously discussed duality of network structure and observable systemic communication. The network reflects the understandings that members have about who talks to whom and which relationships are most useful or important. These perceptions constitute communication others, reproducing structural links. Thus, it becomes important to understand what effects the accuracy of these perceptions since they do not only shape subsequent communication, but create a structure that recursively constructs network perceptions.

Activation links the observable system of co-participation in activities to the structural properties that focus it. A focus is defined as a “social, psychological, legal, or physical entity around which joint activities are organized (e.g., workplaces, voluntary organizations, hangouts, families, etc)” (Feld, 1981, p. 1016). Network members whose activities are organized around the same focus will likely communicate with one another and continue to create conditions that necessitate future communication. According to Corman (2006), organizations are organized around multiple activity foci and many of these (though not all) activity foci are compatible, allowing network members “to kill two birds with one stone” (p. 38). For example, during the recruitment period for a Greek organization at a university, members are able to not only engage in recruitment of new members, but also engage in positive public promotion of their organization and strengthen bonds with fellow organization members. Thus, recruitment potentially provides a way for organization members to accomplish many organizational goals: recruitment of new members, public relations, and fostering organizational commitment. What emerges here is that a given activity focus can invite different types of communication and achieve varied group goals.

Finally, enactment refers to how coding conventions, or rules and resources tied to a particular role, are linked to triggering events. Triggering events are “trigger” foci where a given foci becomes salient at a given time. These take the shape of discrete events that set the system in motion, crossing boundaries, and causing the collective react (Corman & Scott, 1994). Network members will enact certain coding conventions to manage a given triggering event. For example, an organization is planning a fundraiser. This triggering event may necessitate that network members in certain positions work together and, from this enactment of rules and resources, certain activities are likely to follow.

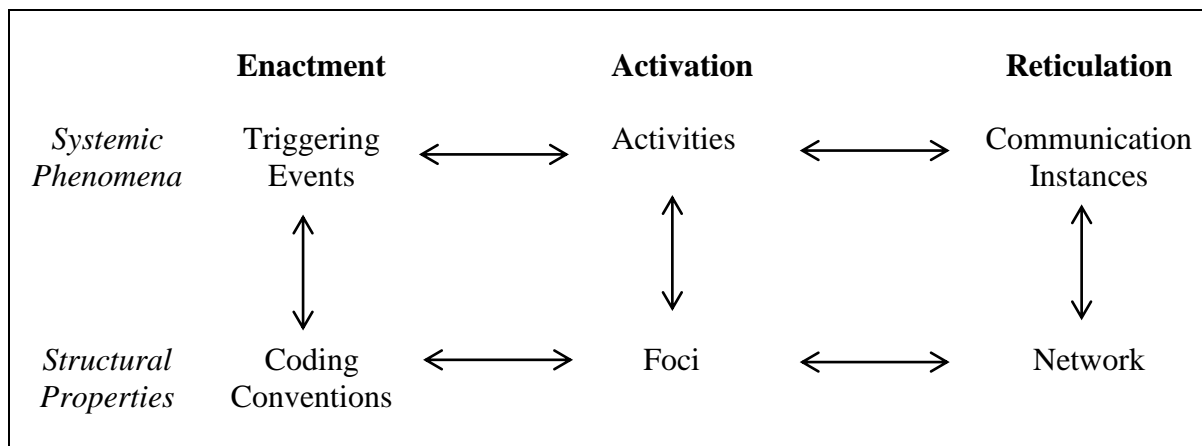


Figure 2. Modalities of the structuration of perceived networks (Corman & Scott, 1994).

Corman and Scott’s model highlights various factors and processes that come together and offer insights to how groups and organizations communicate. Perceptions are key throughout most of the model, as the ability to cognitively recognize systemic phenomena and the properties that structure them is essential. Network structuration offers a way to not only understand how perceptions both shape and are shaped by communication, but also provide a framework for beginning to understand multiple types of communication networks that are relevant within a given context. Groups engage in both task oriented and socially oriented communication. Observed communication instances, activities, and triggering events may enact

certain networks over others. Being able to accurately perceive systemic phenomena will allow an individual to tailor their communication more effectively based on the situation.

Understanding variables that affect this process will provide a deeper understanding to the complexity of network structuration.

Tying it all together: Exploring the role of cognitive complexity on perceptions

While demographic variables, social structure, and interactions have implications for how one's perceptions structure their communication networks, an individual difference variable that has not yet been explored and ties together many of the previously investigated variables may be one key to understanding these connections. Cognitive complexity refers to the development or sophistication of an individual's system of interpersonal constructs and has significant implications for an individual's communication skill (Burleson & Caplan, 1998). Cognitive complexity has been tied to social perception skill, impression formation, and the use of person-centered communication. A more complex individual may have more accurate perceptions of others, leading to more sophisticated impressions of them and the use of more effective person-centered communication. Thus, cognitive complexity has implications for both how one perceives their communication networks, as well as how they may be perceived by others in their network.

Cognitive complexity emerges from constructivist theory which focuses on individual differences in communication and stems from the implicit theories that individuals have about the world. Implicit personality theory is based on the idea that there are certain traits or behaviors that produce an impression, which then leads to further inferences being made about the individual in question (Schneider, Hastorf, & Ellsworth, 1979). Traits and behaviors fall into

certain categories and, when an individual exhibits one or more of those traits or behaviors, the perceiver puts them into that category, attributing all the other traits and behaviors to them as well. These linkages become a necessity in how individuals make sense of the world (Schneider et al., 1979).

Implicit theories about the world leads to the development of a personal construct system. Constructs refer to a basic template of cognitive structure which arms individuals with the ability to comprehend what is going on around them (Kelly, 1955). More simply put, constructs can be seen a pairs of opposites that individuals use to categorize phenomena. Construct systems are imperative in generating one's communicative strategies because they shape an individual's perceptions and influence their ability to anticipate and evaluate situations (Delia, O'Keefe, & O'Keefe, 1982). Cognitive complexity relies upon these construct systems and more complex individuals have more sophisticated systems of interpersonal constructs.

Research on cognitive complexity has touched upon a number of areas including social perception skill, message production, message reception, and social management skills (Burleson & Caplan, 1998). Although capable of short term changes to situational demands, cognitive complexity remains a relatively stable individual difference variable staunchly linked to cognitive abilities (Karney & Gauer, 2010). Individuals who are cognitively complex in interpersonal domains are generally hypothesized to have stronger social perception skills in areas such as identifying others' states and inferring their dispositions (e.g., Burleson, 1994), organizing impressions of others (O'Keefe, 1984), and taking the perspective of others (e.g., Hale & Delia, 1976). These skills have implication for how individuals perceive their relationships with fellow group or organization members, as well as how they perceive the relationships between fellow members.

Furthermore, individuals who are cognitively complex tend to use relatively more person-centered communication and less position-centered communication, resulting in effectively accomplishing both instrumental and relationship goals (e.g., Burleson & Samter, 1985; O’Keefe & McCornack, 1987). Person-centered communication involves focusing on the individual by developing messages that are responsive to the goals of the other person and tailored to that individual, while position-centered communication tends to focus not on the uniqueness of the individual, but on the role of the individual (Burleson, 1987). The use of person-centered communication has allowed more cognitively complex individuals to be described as more adept at “managing the introduction, flow, and development of conversational topics” (Burleson & Caplan, 1998, p.261). Thus, more cognitively complex individuals may engage in more effective communication with fellow group and organization members, influencing how they are perceived by fellow group members.

While the effects of cognitive complexity on communication networks has not previously been explored, the relationship between complexity and networks offers a rich arena for better understanding how individuals both perceive and structure their networks. As groups are comprised of a web of task and social relationships, the ability to accurately perceive and structure communication, as well as potentially shape how one is perceived, is vital to better understanding the complexity of group communication. When exploring network perceptions, prior investigations have considered personality characteristics such as extraversion and engagement, as well as social structure such as organizational role and centrality. Additionally, how member interactions have been studied for their impacts on network perceptions. Cognitive complexity serves as a way to begin to tie some of these previous investigations together in a more parsimonious manner. Because cognitive complexity is characterized as relatively stable

individual-difference variable where more complex individuals are better equipped to perceive their environment (e.g., assessing the dispositions of others, putting themselves in their shoes, and crafting more effective communication messages), it would follow that these characteristics of cognitive complexity would not only influence how an individual views their group, but also their ability to accurately assess and perceive their own relationships with group members, as well as the relationships among fellow group members. More cognitively complex group members who form more sophisticated impressions of their group and engage in more effective interactions may be more accurate in how they view their networks and enjoy a more centralized place within those networks. Their ability to structure the communication networks that guide communication will be amplified. The next sections will discuss how cognitive complexity will influence communication network perceptions.

Social Perception Skill and Impression Formation

According to Burleson and Caplan (1998), “persons with highly developed systems of interpersonal constructs are better able than those with less developed systems to acquire, store, retrieve, organize, and generate information about other persons and social situations” (p. 240). Constructs refer to a basic template of cognitive structure which arms individuals with the ability to comprehend what is going on around them (Kelly, 1955). Delia, O’Keefe, and O’Keefe (1982) claim that “persons implicitly rely on interpersonal construct systems in generating strategies for guiding actions” (p. 162). In other words, these constructs affect the way that individuals perceive the world around them, influencing their ability to anticipate and evaluate situations. For example, when a friend avoided a sensitive question, the more cognitively complex questioners engaged in more sophisticated thinking about the reasons behind the

avoidance (Donovan-Kicken, McGlynn, & Damron, 2012). Interpersonal construct systems allow individuals to better understand the states and dispositions of others through perspective-taking and more cognitively complex individuals are able to use their “system of personal constructs to construe how a situation appears within the construct system of another” (Hale & Delia, 1976, p. 198).

Cognitive complexity has also been linked with the ability to form sophisticated impressions of others. Perceivers with a highly differentiated interpersonal construct system are more able to synthesize new or diverse information when forming coherent and organized impressions of others (O’Keefe & Delia, 1982). According to O’Keefe (1984), “a person’s level of construct differentiation should influence the structure and content both of impressions that he or she forms and of impressions formed of that person” (p. 265). As people rely on their construct system to make sense of the world (Delia, O’Keefe, & O’Keefe, 1982), the impression-formation process involves understanding the implicit theories of personality employed by perceivers. Implicit personality theory is based on the idea that there are certain traits or behaviors that produce an impression, which then leads to further inferences being made about the individual in question (Schneider et al., 1979). For example, an individual who appears to be having fun and being comfortable at a party may also be perceived as being extroverted, confident, and outgoing. A perceiver’s impression of that person will not just be limited to them having fun and being comfortable, but will incorporate other traits that the perceiver believes to be linked to the initial, stimulus traits (Schneider et al., 1979). Implicit personality theories are linked to cognitive complexity because they both function as a desire to manage impressions.

Traits and behaviors fall into certain categories and, when an individual exhibits one or more of those traits or behaviors, the perceiver puts them into that category, attributing all the

other traits and behaviors to them as well. Linking certain traits and behaviors helps to organize impressions and can be seen as prototypes or stereotypes. Prototypes and stereotypes are a necessity in making sense of the world (Schneider et al., 1979). More cognitively complex individuals will perceive will have more categories and attributes within those categories.

Thus, more cognitively complex individuals are better able to understand how a situation appears within the construct system of another person (Hale & Delia, 1976). Additionally, perceivers with a highly differentiated construct system are better able to synthesize new or diverse information when forming coherent and organized impressions of others (O'Keefe & Delia, 1982). For example, when on the receiving end of behavioral complexity, more cognitively complex perceivers were more likely to "recognize and appreciate" the complexity of the other person's message, which thus influenced their impressions of that person (Samter, Burleson, & Basden-Murphy, 1989, p. 624). More specifically, more complex individuals responded more favorably to messages high in person-centeredness and less favorably to message low in person-centeredness than less complex individuals (Burleson et al, 2009; Bodie et al., 2011).

In sum, cognitive complexity allows individuals to take the perspective of others and effectively identify their states and dispositions. Cognitive complexity influences the way that individuals perceive, classify, and make sense out of phenomena, leading to more sophisticated impressions of their environment. Therefore, more cognitively complex individuals may be better equipped to scrutinize, assess, and appreciate the sophistication of communication messages and, subsequently, the communication networks relevant to their group. When perceiving the connections between network members, a more complex individual will get a

more accurate picture of the communicative landscape. Thus, the following two-part hypothesis is proposed:

H1a: More cognitively complex group members will have more accurate perceptions of their friendship network.

H1b: More cognitively complex group members will have more accurate perceptions of their task network.

Network structuration highlights the modality of reticulation where members' perceptions about who talks to whom and which links are most useful or important shapes how members' communicate. Communication instances then cycle back to shape perceptions. If cognitive complexity shapes the accuracy of one's perceptions about the friendship and task communication networks, their communication will also be shaped by their perceptions. For example, a more cognitively complex individual may have more accurate perceptions about the "true" communication network. These perceptions will actually shape the communication between this individual and fellow network members, leading to their perceived network more accurately reflecting actual communication. Thus, cognitive complexity emerges as a new mediating variable in Corman and Scott's (1994) model.

Additional variables may impact the relationship between cognitive complexity and network accuracy. For example, the level of satisfaction a group member has with their group may affect their ability (or desire) to accurately observe and assess the communication relationships among group members. Xia et al. (2009) found that when group members disliked their fellow group members, they were less likely to be satisfied with the group's process and outcomes. Further, how strongly an individual identifies with fellow group members or even the organization as a whole may have implications for understanding network perceptions. Strong

feelings of solidarity with fellow group members or passionately identifying with the organization as a whole may shape the way one perceives both their own relationships and the relationships of others within their network. Organizational identity has been linked to positive outcomes for both organizations and organization members and refers to how connected an individual feels with their organization (Scott & Stephens, 2009). Finally, how effective one believes their organization or group to be may influence how they perceive their group. Being satisfied or strongly identified with group and believing it to be successful may serve to help or hinder perceptions of accuracy, potentially mediating to mediate effects of cognitive complexity on accuracy. Thus, the following research question is proposed:

RQ1: Does group satisfaction, effectiveness, and/or organizational identification impact the relationship between cognitive complexity and network accuracy?

Person-Centered Communication

Being able to effectively take the perspective others and create sophisticated impressions can lead to an individual using more person-centered communication. Woods (1998) views person-centered communication as an “orientation to sociality” (p. 167), and cognitively complex individuals have the ability to produce more sophisticated messages in numerous situations. Person-centered messages should “imply a recognition of the other as a unique person, and a sensitivity to the other’s unique qualities, goals, feelings, and concerns” (Zorn, 1991, p. 183).

In addition, an association exists between cognitively complex individuals and the ability to produce and use person-centered messages (Burleson & Caplan, 1998). For example, person-centered communication has been linked with being able to recognize and develop effective comforting and supportive strategies (Burleson, 1982, Samter & Burleson, 1984, Burleson et al.,

2009, Bodie et al., 2011). More complex individuals were more likely to ask questions about a distressed person's point-of-view, resulting in being able to tailor more sophisticated comforting messages (Samter & Burleson, 1984). Moreover, individuals with a more differentiated construct system were more focused on the distressed individual and spent less time talking about unrelated issues. In other words, cognitively complex individuals use communication messages that are tailored to the other person. Therefore, cognitively complex individuals, with developed construct systems, are equipped to develop and implement person-centered communicative messages.

The ability to effectively tailor messages to an individual is tied to communication skill. For example, person-centered verbal ability has been linked to person-centered adaptiveness during interactions, nonverbal projection of concern, use of person-centered verbal strategies (Woods, 1998). Additionally, person-centered leadership messages are often perceived as more effective and relationally-oriented by employees (Zorn, 1991). Karney and Gauer (2010) also found that more cognitively complex spouses engaged in more positive behaviors during problem-solving discussion with their spouse and Burleson and MacGeorge (2002) reported that more effective supportive communication is characterized by highly person-centered verbal and nonverbal behaviors. These behaviors allowed a target of a supportive message to develop "greater comprehension of the problematic situation" and have an "improved perspective on it" (Burleson & MacGeorge, 2002, p. 402). This suggests that cognitively complex individuals may possess be more skilled in their verbal and nonverbal communication skills, resulting in higher quality communication. Thus, using higher quality communication may shape how an individual is perceived by other members of their communication network. A more cognitively complex individual may use higher quality, person-centered communication, resulting in their being

perceived by others as more central in their communication networks. Thus, the third two-part hypothesis is proposed:

H2a: More cognitively complex group members will be perceived by other group members to be more central within their friendship network.

H2b: More cognitively complex group members will be perceived by other group members to be more central within their task network.

These hypotheses support the modality of reticulation in network structuration. A more cognitively complex network member, using person-centered communication, will be perceived as a more effective communicator by fellow network members. Thus, the more complex individual will be perceived as more central. These perceptions of centrality will create a structure that systematically shapes observable communication instances where the more complex individuals are also perceived as engaging in more communication with other network members.

However, while cognitive complexity is hypothesized to directly impact network centrality in both task and friendship networks, it is important to realize that network members fulfill certain roles that carry specified tasks, goals, rules, and resources. Individuals may perceive that certain network members are connected based solely on the role fulfilled. Thus, it becomes important to investigate the impact of group role. The second research question is proposed:

RQ 2: What is the impact of organization role in the relationship between cognitive complexity and centrality?

Navigating different communication networks

While cognitive complexity enables a more complex individual to more skillfully take the perspective of others, form nuanced impression, and use more effective communication, their motivation in a perceive different networks in the same way may differ. Proposing a dual-process theory of supportive communication, Burleson and Bodie (2008) posited that the outcomes of supportive communication are influenced by one's ability and motivation to process the content of the message. A message may provide better outcomes if the receiver has the ability, due to their cognitive complexity, as well as the motivation to thoughtfully and fully perceive it. For example, a moderate level of upset increased motivation to process message content, leading to more cognitively complex individuals getting more out of messages because they scrutinize them more extensively than less complex individuals (Bodie et al., 2011).

Within groups and organizations, individuals belong to a variety of communication networks exemplified by task, advice, expertise, and friendship ties, to name a few. Individuals navigate between these different types of networks, relying on their perceptions of systemic phenomena to help them make sense out of the situation. While cognitive complexity has potential to influence the accuracy of one's network perceptions, other factors, such as motivation to accurately perceive specific networks, may impact this relationship. Cognitive complexity may have different effects on perceptions in different networks. For example, an individual may be more motivated to understand the friendships among group members in a more socially-oriented group. Or, when faced with completing a task, an individual may be more motivated to understand the expertise or working relationships among group members.

Thus, while cognitive complexity has implications for network perceptions, does it operate differently as network members perceive different communication networks within their

groups? Does motivation change the connection between cognitive complexity and accuracy in different networks or does cognitive complexity affect each communication network in a consistent manner. Does centrality in one network influence perceptions in a different network? Working through some of these variables and differences in how they shape accurate perceptions from network to network leads to a final research question:

RQ3: How and why does an accuracy vary from network to network?

In conclusion, it is essential to understand the perceptions that individuals have about the relationships and ties among fellow group and organization members because these perceptions, whether accurate or not, shape their communication. Since having accurate perceptions can serve as a source of power within groups and potentially allows an individual to communicate more effectively with other members, it is essential to understand what impacts both the perceptions one has about their communication networks, as well as what impacts how they are perceived. These perceptions serve to both structure and be structured by communication. Cognitive complexity integrates several demographic, personality, social structure property, and interaction management variables, offering a new and parsimonious way of exploring and better understanding the perceptions that individuals have about their groups and organizations. Focusing on both friendship and task-oriented connections in groups will further shed light on the intertwined social and task dynamics inherent in all types of groups, leading to a more comprehensive understanding of group communication.

CHAPTER 3

METHOD

In order to explore the relationship between cognitive complexity and perceptions of friendship and task, this project investigated socially-oriented groups facing task-oriented demands. Survey interviews were conducted to assess participants' perceptions about both friendship and task networks. Cognitive complexity, along with potential moderating variables, was examined for impacts on network perceptions.

Participants

Participants were recruited from 5 executive boards of socially-oriented Greek sororities and fraternities for a total of 47 participants including 30 females and 17 males. Executive boards of these social organizations were homogenous consisting of same sex members, similar ages, and organizational experience. The groups ranged in size with 9 out of 12 males surveyed from the executive board of organization 1, 8 out of 10 males from organization 2, 12 out of 13 females from organization 3, 10 out of 10 females from organization 4, and 8 out of 8 females from organization 5. Participant ages ranged from 18-22 with a mean age of 20 and most participants were sophomores (27 total) or juniors (17 total), with a few freshman (2 total) and a single senior (1 total). 41 participants lived in their organization's house with fellow executive board and organization members.

While titles of positions varied organization to organization, all roles were coded into categories of president (5), finance (4), recruitment (6), house management (5), administration (7), delegate (3), and membership (17) (including social, philanthropy, educational

programming, and risk management responsibilities for both new and old members). 33 participants reported holding prior organizational positions. However, 39 reported that it was their first semester in their current position working with the current executive board. Finally, these executive boards serve as the leadership teams of the larger social organization which ranged from 52 to 180 members and participants' membership in the larger organization ranged from 2 to 7 semesters, with 28 participants indicating that this was their fourth semester.

Executive boards of fraternities and sororities are especially relevant to studying variables that impact both friendship and task networks. The underlying goal of these groups is social, pushing relational issues to the forefront of the group interaction. These members engage in social and philanthropic activities and are often required to live together for a period of time in their organization's house. However, despite an emphasis on social activities and personal relationships, executive board members also must work together to manage the many organizational demands of their university chapter.

These organizational demands are not so different from the organizational demands of other more traditionally "work" oriented groups. For example, executive boards recruit and transition new members into their group, while simultaneously planning for inevitable shift of members into alumni status. Executive boards are concerned with communications and public relations, communicating with the national "parent" organization, as well as other university chapters. Within the university, they maintain relationships with fellow student organizations, university administration, and the greater community. These groups create and manage large budgets of thousands of dollars, plan and implement educational programming for members, maintain the house, plan social and philanthropic events, and implement organizational procedures and rules that govern the organization.

However, as these executive boards manage these task-oriented organizational demands, they simultaneously balance social relationships with fellow executive board members with whom they often share meals, sleeping quarters, bathrooms, and common household spaces. Lines between task and social relationships are blurred for these groups. However, this is a reality faced by other types of organizations and groups. For example, in between emergency responses, fire fighters are at the firehouse, catching up on sleep during grueling 24 hour shifts, taking meals together, and socializing. Marsar (2013) wrote “...Many firefighters (including volunteers) call their place of work a *firehouse* for a reason: They’re a family...together, they have their good times, along with the occasional pains, squabbles and dysfunctions. A firehouse isn’t just a work location; it’s where your second family lives.” The military provides another context of where organization and team members find the lines between task and social realities blurred. While these examples of living and working together may be more extreme than the average business work group, they serve to highlight the challenges that all groups face to some degree and provide fertile ground for exploring member perceptions about social and task group communication.

Procedures

The researcher emailed fraternity and sorority presidents listed on the university’s website. With the president’s response and approval, the researcher attended an executive board meeting, presented the project, and scheduled one-on-one survey interviews with participants. Survey interviews were conducted by the researcher and a trained research assistant. They took no more than an hour, were audio recorded, and included both closed and open ended questions. Participants were compensated \$10 for their time and interviews were held with 47 of 53

possible participants. A follow-up online survey was administered after the survey interviews, but had a poor response rate of 63.8% (only 30 of the 47 initial participants partially or fully completed the questionnaire).

For the first round of collection, one-on-one survey interviews were employed instead of simply administering a paper or web-based survey for several reasons. First, the nature of the network perception data may have resulted in participants getting fatigued while completing the survey and failing to complete all measures. Second, many participants were living in the same house with fellow executive board members and may have felt uncomfortable answering questions about their relationships and perceptions while fellow members were in the vicinity. A face-to-face meeting with the research team in a neutral area hopefully removed any discomfort, while also insuring that all survey questions got asked. Further, the interview format allowed for some open-ended questions to be asked, resulting in richer picture of the dynamics in question. The interviews took less than an hour.

The goal of the survey interviews was to capture the perceptions that group members have not just about their own relationships with fellow group members, but also about the relationships between group members. Perceptions about friendship, as well as task, were investigated, along with factors that influence these perceptions. Specifically, cognitive complexity, along with relational satisfaction and organizational identity, were assessed for their impacts on network perceptions. The follow-up online questionnaire surveyed members about their motives for joining their organization's executive board, as well as asked a follow up question to further assess cognitive complexity. The next section will address the methodological considerations of cognitive social structures, cognitive complexity, and other relevant relational measures.

Measuring Network Perceptions with Cognitive Social Structures

Exploring perceptions that individuals have about relationships in their group is best served through a network approach centered on cognitive social structures. Within group and organizations, individuals interact through a variety of communication networks. According to Monge and Contractor (2003), “communication networks are the patterns of contact that are created by the flow of messages among communicators through time and space” (p. 3). Advice can be sought, information shared, friendship developed, and tasks accomplished through these communication networks. Understanding not just who people are communicating with, but also the nature of the communication, allows for a better picture of the communicative landscape, as well as the structure of the group or organization. The emphasis is on the connections between entities and network analysis allows one to identify and explore these relationships between individuals, groups, and organizations.

Exploring network relationships often relies on observational data or self-report data (Casciaro, 1998). Unfortunately, gathering observational data in naturally-occurring groups poses many challenges. Researchers need to have access to groups, technology to capture these observations, and agreement from participants to be recorded. Further, there is challenge in coding this data. For example, Corman and Bradford (1993) measured observed communication during a simulation activity and found that (1) it was difficult to code the receipt of communication messages using audio recordings because of the reliance on nonverbal communication and (2) it was difficult to capture communication when members moved to different tables, instead of staying at one table. Indeed, observational data of communication networks can often be virtually impossible to gather (Casciaro, 1998) or must rely on simulations

or single instances of group or organization meetings, not necessarily reflecting actual underlying communication patterns and the social structure of the group.

Thus, network analysis often relies on self-report data for establishing these patterns of interactions and ties among network members (Krackhardt, 1987). Network connections are often established through simply asking research participants questions regarding their communication and interaction with fellow network members. More specifically, Ibarra (1992) asked participants to name the coworkers “with whom you discuss what is going on in the organization”, “who are important sources of advice whom you approach if you have a work-related problem or when you want advice on a decision you have to make”, “that you know you can count on, whom you view as allies, who are dependable in a time of crisis”, and “that you have personally talked to over the past couple of years when you wanted to affect the outcome of an important decision” (p. 431). Advice networks have also been established through asking a participant who they go for help or advice at work and having them put checks next to fellow group or organization members that fit this criterion (Casciaro 1998; Casciaro et al., 1999; Krackhardt, 1987, 1990). Expertise has been measured through having participants report their perceptions of the knowledge level of fellow organization members as being none, beginner, intermediate, or expert (Su, 2012). Network members have been asked about the frequency of their communication, whether task or non-task related, with others during typical weeks (Yuan & Gay, 2006) or even during specific instances (Corman & Bradford, 1993).

In addition to more task or work-oriented ties, friendship networks have been established through having participants report how close they are to other network members, along with how much time is spent with other network members during an average week using 7 point scales (Feeley, Hwang, Barnett, 2008). Friendship and adversarial relationships have also been

ascertained through asking participants how they feel about fellow group members using a 5 point scale ranging from “especially close” to “distant” (Xia, Yuan, & Gay, 2009) or through simply having participants check off which organization members they consider to be a personal friend (Casciaro 1998; Casciaro et al., 1999; Krackhardt, 1987, 1990). Ibarra (1992) simply asked participants to name the people “who are very good friends of yours, people whom you see socially outside of work” (p. 431).

While these questions allow researchers to get at an organization or group members own perceptions about the social structure of their network, it fails to take into account their perceptions about the connections between fellow organization and group members. Groups are inherently more complicated in that they are comprised of multiple, intersecting relationships between several members. While one’s perceptions about fellow group members is valuable, there becomes a more in depth understanding of the communicative landscape when researchers also consider the perceptions that one member has about the relationships among fellow members. These perceptions can serve as a source of power, highlight more comprehensive underlying communication patterns and extend the understanding of communication in groups and organizations.

Krackhardt’s (1987, 1990) Cognitive Social Structures (CSS) offer a way to meaningfully gather and analyze these network perceptions. While previous examples assess a group member’s perceptions about their direct ties, cognitive social structures push the questioning one step further, having participants assess what they believe the relationship to be between two parties. For example, with advice networks, participants would not just be asked about who they go to for advice and help, but would also be asked who goes to whom for advice and help. When exploring the advice network of 21 managers, Krackhardt (1987, p. 118) offered the example

“Who would Steve Bosie go to for help or advice at work?” where the other 20 managers were listed below the question. The participant would then simply check off the appropriate managers’ names. This would repeat for each manager. The result would be an individual matrix or slice reflecting one group or organization member’s self-reports of their own network ties, as well as their perceptions of the ties between other network members. In a group of 10 individuals, the result would be 10 slices or matrices reflecting each individual’s map of the social structure.

A complete Cognitive Social Structure results in individual slices (one per network member), as well as one Locally Aggregated Structure (LAS) matrix and one Consensus Structure (CS) matrix. The slices are actually reduced down into the new LAS and CS matrices allowing for a researcher to assess the accuracy individual’s perceptions of their network ties. The Locally Aggregated Structure (LAS) matrix reflects the relationships between individuals based on their own agreement of the relationship. For example, if Person A and Person B report being friends, then the LAS will indicate that they are friends. If Person B and Person C report not being friends, then the LAS will indicate that they are not friends.

The Consensus Structure (CS) differs from the LAS in that it reflects not the two network members in question, but the overall agreement of all network members. For example, if Person B and C report not being friends, but everyone else in their network perceives that B and C are in fact friends, the CS would reflect that B and C are friends. One might wonder why it is important to take this second step and the following example highlights the importance of computing and analyzing the CS matrix. If two individuals in a workplace deny a personal relationship, the LAS matrix would reflect no tie. However, if other network members perceive them to have a personal relationship, the CS matrix would reflect this relationship. Perceiving

there to be a personal relationship between B and C may shape the ways in which fellow network members communicate (or do not communicate) with B and C. Even if B and C deny a tie, the perception that there is a tie may be enough to alter communication patterns among the network.

There are some things to consider with the consensus structure matrix. While some have argued that consensus does not necessarily imply accuracy (e.g., Kenny, 1994), it remains a valuable tool for assessing what group members believe to be true of their group and has implications for how they think about and communicate with fellow group members. Perceptions are often very real in their consequences (Krackhardt, 1987) and it is often “not who you know, but who others think you know” (Monge & Contractor, 2003, p. 194). Additionally, consensus is often said to exist when there is a preponderance of network members agreeing on the relationship between two others. Preponderance is usually defined as having at least half of the network members in agreement (Monge & Contractor, 2003).

Slices, locally aggregated structures, and consensus structures offer similar information regarding communication networks. However, they provide a slightly different perspective or lens for analyzing the data and begin to unearth the complexity of group relationships and communication. According to Corman and Bradford (1993), the perceived connectedness of an individual to a group affects the amount of perceived communication directed from that individual to the group. Thus, focusing on the perceptions that group members have about fellow members and links between them is especially important to consider. The power of perception is essential to understanding the communication between group and organization members and Cognitive Social Structures offer a framework for exploring these relationships.

However, there are some challenges and considerations to using Cognitive Social Structures. First, a cognitive social structure yields a great amount of data, offering a

comprehensive and intricate picture of a network. This often results in smaller groups being used for this type of data collection. Therefore, with a smaller sample size, it becomes especially important to collect information from intact groups where each member provides information. Unfortunately, when this proves impossible, the consensus structure can be used to approximate relationships among members based on others' perceptions (Watling Neal, 2008). Further, cognitive social structures can be collected from multiple groups so that there is increased power in analyzing impacts on the network perceptions. Finally, because cognitive social structure data requires asking participants about a great number of relationships among their groups, participants may fatigue and fail to complete measures. Offering the questions in a matrix format or in a verbal format may expedite the process.

Second, when reducing the individual slices of the cognitive social structure down into the locally aggregated structure which looks at agreement between two individuals and the consensus structure which looks at preponderance, there needs to be care in how the data is symmetrized. Many cognitive social structure studies used dichotomous data where participants simply indicated the presence or absence of a relationship (e.g., Casciaro 1998; Casciaro et al., 1999; Ibarra, 1992; Krackhardt, 1987, 1990). Unfortunately, this may not always be the most appropriate way to assess relationships. For example, when studying friendship in a social group, it may be that everyone is friends, but that the strength of the friendship tie varies. Thus, it becomes important to not simply explore the presence or absence of a tie, but the strength.

Some examples of measuring strength of a tie include a 7-point scale ranging from “not at all close” to “very close” was used when participants were asked how close they were to other members (Feeley et al., 2008) and a 5-point scale ranging from “especially close (one of the respondent's closest friends)” to “distant (avoid contact unless necessary)” was used when

participants were asked how they feel about another group member (Xia et al., 2009). When exploring perceptions of expertise, Su (2012) had organization members report their perceptions of knowledge using a scale of none, beginner, intermediate, and expert. Frequency of communication has been reported using a 5-point scale ranging from never to very often (Xia et al., 2009) or simply allowing an open-ended response of a number (Yuan & Gay, 2006).

The challenge is in how these responses are then reduced down into the LAS and CS matrices. With dichotomous data, indicating the presence or absence of a relationship, the LAS matrix would reflect the presence of a relationship only if the two parties involved indicated the presence of the relationship. The CS matrix would reflect a relationship between two individuals if a majority of network members perceive the two individuals to have a relationship (Krackhardt, 1987). When the data moves beyond presence or absence to levels or strengths of ties, additional analysis requires more finessing in reducing the network slices into a single LAS and CS matrix. For example, when assessing accuracy of expertise recognition, Su (2012) calculated the difference between individual i 's perception of individual j 's knowledge and individual j 's self-reported knowledge. The absolute value of the difference was subtracted from the greatest possible difference for the accuracy score of i 's perception of k . This example highlights that it is important to assess the specific data being collected and determine the best way to reduce it down into measures of accuracy and consensus.

Network assessment. This project assessed group member perceptions about the task and friendship relationships among their fellow group members using Cognitive Social Structures (see Appendix A). Friendship networks were measured by asking participants to reflect on the personal relationships within their executive board. Participants were asked “*How close of a friend do you consider each other board member to be?*” In order to assess their

perceptions of a fellow member's relationship, they were then asked "*How close of a friend does (President) consider each other board member to be?*" The scale used ranged from 0 (indicating that they do not consider the other person a friend) to 10 (indicating that they consider the other person to be their best friend). This scale loosely ties to transitions in workplace friendship development: acquaintance to friend, friend to close friend, and close to friend to "almost best" friend (Sias & Cahill, 1998). The result was a friendship matrix that reflects each participant's "slice."

Task networks were assessed by having participants reflect on who is working with whom on organization-related tasks. Participants were asked "*How often do you go to each fellow board member in order to work on organization-related tasks?*" In order to assess their perceptions about the working relationships among fellow board members, participants were then asked "*How often does the (President) go to each fellow board member in order to work on organization-related tasks?*" A scale of 0 to 5 was used where 0 is "never," 1 is "occasionally," 2 is "sometimes," 3 is "often," 4 is "usually," and 5 is "always." The result was a task matrix that reflects each participant's "slice."

Additionally, participants were asked whether or not they believe they would still be friends with each fellow group member had they never joined the organization, answering "*not applicable,*" "*very likely,*" "*likely,*" "*unsure,*" "*unlikely,*" or "*very unlikely.*" Participants were also be asked what type of organization-related tasks they are working on with each other board member.

When measuring task and friendship networks, participants will be using scales with many levels. Although Krackhardt (1990) had participants simply put check marks next to organization members' names to indicate the presence or absence of a relationship, this study

will employ multiple levels in order to achieve more differentiation in the data. Due to the types of socially-oriented groups being investigated, the researcher believed that it was likely that members may consider everyone a friend. Thus, the variance of the relationships came from the strength of the friendship. The same applied to the task network where, by virtue of simply being on the executive board, they will be working to varying degrees with all group members.

Accuracy. Accuracy was assessed by using UCINET (Borgatti, Everett, & Freeman, 2002) to compute the Locally Aggregated Structure (LAS) and Consensus Structure (CS) from individual slices. For each organization, each participant's friendship and task "slices" were used to compile friendship and task LAS and CS matrices. Because the data was not dichotomous, Median LAS was used to create the LAS matrix which reflected agreement about the nature and strength of two parties' relationship. How each party rated their relationship with the other was symmetrized through averaging the ratings. If the President rated their relationship with the Vice- President as a 10 and the Vice-President rated their relationship as a 10, the LAS would indicate that the tie between the President and Vice-President is a 10. However, due to the variance of the scales being used, it may be likely that there are differences between how participants rate their relationships. Therefore, if the President rated their relationship with the Vice President as a 10, but the Vice-President rated their relationship as an 8, the LAS would take the average of 9 to reflect the tie.

The CS matrix reflected the consensus of the entire executive board about the nature of the relationship between two parties. Often, when dichotomous data is collected simply indicating the presence or absence of a relationship, the CS matrix is determined by more than half of the network agreeing about the presence or absence of the relationship (Monge & Contractor, 2003). However, because the data in this project was not dichotomous and

accounted for strength of the task relationships, UCINET's Global Aggregation only summed the strength of ties reported by participants.

Once LAS and CS matrices were computed from individual slices to represent each organization's friendship and task networks, individual slices were compared to the LAS and CS. For example, each board member's friendship slice would be compared to both their organization's friendship LAS and friendship CS. Pearson correlations were computed for how accurately that individual's slice compared to the "true" network. Thus, each participant had 4 accuracy scores reflecting their perception accuracy compared to the LAS friendship matrix, CS friendship matrix, LAS task matrix, and CS task matrix.

Centrality. Centrality refers to how many connections, relationships, or ties that one has with others in their network, group, or organization. It can often be seen as the relative importance or influence that a member has. This project assessed centrality using degree centrality, one of the most prevalent ways of assessing centrality within communication networks (Su, 2012). Degree centrality measures the in-degree and out-degree links a member has (Feeley et al., 2008), highlighting the quantity and strength of direct ties that a member has with the rest of the group.

Degree centrality was computed from the LAS and CS matrices for both friendship and task in each organization. Friendship in-degree centrality indicated how close of a friend other network members considered a person to be, while task in-degree centrality indicated how often other network members went to the person for work on organization related tasks. Friendship out-degree centrality indicated how close a friend a network member considered all other network members to be, while task out-degree centrality indicated that how often a person went to other network members to work on organization related tasks. So that centrality scores could

be compared across groups and networks of different sizes or densities, raw in-degree and out-degree scores (which were sums of strength of ties) were “standardized” and expressed as percentages of the number of actors in the network, less one. For example, in a complete network of 8 members, that maximum centrality score for friendship could be 70 (7 other members x maximum friendship rating of 10). A member with centrality score of 60 would have a standardized centrality score of .857 (60/70). Each participant had an in-degree centrality scores for 4 matrices (Friendship LAS, Friendship CS, Task LAS, and Task CS), as well as an out-degree centrality scores for each of the 4 matrices.

Measuring Cognitive Complexity with the Role Category Questionnaire

When exploring cognitive social structures, certain variables may impact the perceptions that individuals have about their fellow group or organization members. One such variable, cognitive complexity, brings together elements of personality, social structure, and interaction, and has implications for the ways in which one both views their network and is viewed within their network. Cognitive complexity is defined as the development or sophistication of an individual’s system of interpersonal constructs and is related to social perception skill, impression formation, and use of person-centered communication (Burleson & Caplan, 1998). There are a variety of ways to measure an individual, or even a group’s, cognitive complexity. This next section will explore ways several ways of measuring cognitive complexity, making a case for using the Role Category Questionnaire.

Alternate measures. Cognitive complexity can be measured in several ways. For example, the conceptual/integrative complexity scoring manual relies on a content analysis of free responses (Baker-Brown, Ballard, Bluck, de Vries, Suedfeld, & Tetlock, 1992). Responses

are rated on a scale of 1 to 7 for both differentiation and integration. Differentiation refers to the number of characteristics that are taken into account when considering a problem or issue. An undifferentiated person considers the issue in “good/bad” terms, while a differentiated person considers the situation from multiple perspectives. Integration refers to whether or not the differentiated characteristics are operating in isolation or in multiple patterns (Van Hiel & Mervielde, 2003). The types of free responses collected can vary. For example, when exploring marital discord in newlyweds, Karney and Gauer (2010) had participants describe marital problems in both a written and verbal format. Responses were coded with intraclass correlation coefficients, indicating interrater reliability, ranging from .56 to .71. Another example of this method included having participants write their opinions about current political issues, with interrater reliability of coded responses ranging from .78 to .83 (Van Heil & Merivielde, 2003).

Another technique for capturing cognitive complexity is the Attributional Complexity scale (Fletcher, G.J.O., Danilovics, P., Fernandez, G., Peterson, D., & Reeder, G.D., 1986). The scale consists of 28 items measuring aspects of attribution including motivation to explain and understand what causes the behavior of others. Items include “I really enjoy analyzing the reasons or causes for people’s behavior,” “I think a lot about the influence that society has on other people,” “I have found that the causes for people’s behavior are usually complex rather than simple.” Participants indicate how strongly they agree with these statements on a scale of 1 indicating “strongly disagree” to 7 indicating “strongly agree.” This scale appears to be a reliable and valid measure of cognitive complexity (Fletcher et al., 1986) with a study by Foels and Reid (2010) indicating $\alpha=.89$.

Beyond the integrative complexity and attributional complexity measures, there is also the Construct Repertory Test (Rep Test) (Bieri, Atkins, Briar, Leaman, Miller, & Tripoldi, 1966).

The Rep Test has participants identify individuals in their lives who fit into one of ten predefined roles including “yourself, a person you dislike, your mother, a person you would like to help, your father, a friend of the same sex, a friend of the opposite sex, the person with whom you feel most uncomfortable, a person in a position of authority, and a person who is difficult to understand” (Bowler, Bowler, & Phillips, 2009; Bowler, Bowler, & Cope, 2012). Participants then rate these individuals on ten bipolar adjective pairs (i.e. outgoing to shy, maladjusted to adjusted, decisive to indecisive, excitable to calm, interested in others to self-absorbed, ill-humored to cheerful, irresponsible to responsible, considerate to inconsiderate, dependent to independent, and interesting to dull) using a 6-point Likert scale. This results in 100 total ratings. Scoring involves summing the number of matching ratings assigned for each role (2 points each) and the number of values within one scale value of each other (1 point each). The result is 450 total comparisons that generate scores ranging from high cognitive complexity at 230 to low cognitive complexity at 900 (Bowler et al., 2009; Bowler et al., 2012). This complex process is further streamlined through using the Computer-Administered Rep Test (CART). CART automates the data collection and scoring process. The CART and paper and pencil Rep Test have been established as equivalent and the CART enjoys a strong test-retest reliability of .75 (Woehr, Miller, & Lane, 1998).

In addition to establishing an individual’s cognitive complexity, current research has moved towards an understanding of a group’s cognitive complexity. In some cases, this has been done by simply assessing each group member’s cognitive complexity and aggregating scores into one group score (e.g., Mayer & Dale, 2010). However, other studies have employed cognitive or conceptual mapping to assess a group’s complexity (Curşeu, Janssen, & Raab, 2012; Curşeu & Pluut, 2013). Groups are given concepts written on cards and asked to organize them

in such a way that the relationships between the concepts make sense to all group members. Cards are then glued onto a piece of paper, lines drawn between related concepts, and the nature of the relationship linking concepts written on the lines. The number of connections established between concepts, the number of distinct relations established between the concepts, and the number of concepts used in the map are computer and the formula
$$\text{The formula (group connectivity} \times \text{group diversity) / number of concepts results in a group's cognitive complexity}$$
 (Curşeu et al., 2012; Curşeu & Pluut, 2013). While this emphasizes the group over the individual, it still offers another way of conceptualizing and measuring cognitive complexity.

Role category questionnaire. While these approaches offer different ways to assess one's cognitive complexity, this project used the Role Category Questionnaire (RCQ) (Crocket, 1965). The RCQ estimates cognitive complexity by having participants provide free-response descriptions of several individuals known to them, after which the responses are coded for the number of interpersonal constructs reflected (Burlison & Caplan, 1998). More specifically, participants were instructed to describe a peer whom they like, writing a detailed impression of this person. They were asked to describe this person as fully as possible, paying attention to this person's habits, beliefs, ways of treating others, mannerism, and similar attributes. This process was then repeated for a peer whom the participant dislikes (see Appendix B).

The researcher trained a research assistant in coding the RCQs and both worked together to code 9 of 47 participants' RCQs. The remaining 38 participants' RCQs were independently coded and reliability was high with an intraclass correlation coefficient of .85. Differences between scores were decided by the researcher. RCQ liked and RCQ disliked were significantly correlated at the .01 level (two-tailed). Thus, scores were totaled and ranged from 7 to 36 with a mean of 20.26 and a median of 20. The mean (with standard deviation in parentheses) was 19.76

(5.25) for men and 20.53 (6.37) for women. Scores for men and women were not significantly different, $F(1, 45) = .18, p = .05, r = .06$. For analysis, participants were classified as high or low cognitive complexity based on a mean split for their sex.

Interpersonal constructs used to describe each liked and disliked peer were counted in terms of that person's personality and behavior, as opposed to their physical characteristics. The descriptions fall into five categories: (1) physical descriptions, (2) role constructs, including name, age, and sex, (3) descriptions of the other's general behaviors or specific actions in the interaction, (4) reports of specific or general beliefs and attitudes expressed by the other person, and (5) abstract dispositional and personality constructs (Delia, Clark, & Switzer, 1974). Generally, qualities falling into the physical descriptions and role constructs categories are not counted as part of the total RCQ score (Burleson & Waltman, 1988). In an investigation of friendship topic avoidance, Donovan-Kicken, McGlynn, and Damron (2012, p. 133) provided an example of one participant's RCQ responses: (for the liked individual) "Pleasant. Kind. Sincere. Respectful. Funny. Charming." (6 constructs) and (for the disliked individual) "Vulgar. Vindictive. Unprofessional. Disrespectful. Frustrating to be around. Narcissistic. An absolute horror to be around. He's just not a very nice man to put in the simplest of terms" (8 constructs).

The RCQ was used over other measures for a variety of reasons. First, while the RCQ only provides a sample of one's cognitive complexity, as opposed to an exhaustive measure, the reliability and validity of the RCQ has made it the most widely used measure of cognitive complexity in the communication field (Burleson & Caplan, 1998). Second, the RCQ allows for flexibility in how it is administered. Although the RCQ makes allowances in the number and type of persons described, research has shown that having participants describe peers for two to

five minutes allows for reliable and valid cognitive complexity estimates (Burleson & Caplan, 1998). Third, independent coders of RCQ responses are often incredibly reliable in their assessment of constructs. Interrater reliability is often extremely high with intraclass coefficients of .98 and .96 (Donovan-Kicken et al., 2012), .92 (Dobosh, 2005), .94 to .98 (Burleson et al., 2009; Bodie et al., 2011), and .90 (Little, Packman, Smaby, & Maddux, 2005). Finally, the RCQ enjoys strong test-retest reliability and construct validity in terms of its correlations with many communicative and socio-cognitive functions. In samples of adults, the RCQ enjoys strong test-retest reliability, with estimates of .95, .86, and .84 in different tests (Crockett, 1965; O'Keefe, Shepherd, & Streeter, 1981), as well as strong construct validity in terms of relative stability amongst adults (O'Keefe & Sypher, 1981).

However, some criticisms of the RCQ are that it may be affected by the wordiness of participants' responses and that the way the RCQ is administered can affect complexity scores. In response to these challenges, Burleson and Caplan (1998) synthesized the literature and found little relation between the RCQ and measures of loquacity. Dobosh (2005) found further support that loquacity was not related to cognitive complexity scores. They also indicated that the altered results from changing the administration of the measure is comparable to changing the administration of any measure and should not be a large concern. Therefore, despite some criticisms, the RCQ appears to be a valid and reliable measure of cognitive complexity.

Ideal executive board member. As this project was focused on both task and social relationships in groups and the classic RCQ asks participants to reflect on liked and disliked peers, a follow up question was administered online that asked participants to describe an ideal executive board member (see Appendix B). Interpersonal constructs were coded and counted just as in the RCQ. Only 27 participants completed this ideal board member free response. The

mean (with standard deviation in parentheses) was 7.74 (4.02). While it was expected that the “Ideal” score would correlate to the RCQ scores, the Pearson correlation of .18 was insignificant ($p = .38$). However, while still insignificant, the Ideal score seemed to better correlate to the Liked Peer scores with a Pearson correlation of .29 ($p = .14$). It may be that a larger sample size was needed to see if this was a valid measure of complexity and will only be used for exploratory purposes for this project.

Measuring Potential Moderating Variables

Additional information was collected that may impact the relationship between cognitive complexity and network perceptions. In addition to acquiring relevant demographic information, questions concerning relational satisfaction, organizational identity, and group outcomes were collected (see Appendix C).

Satisfaction. Exploring satisfaction with both the interpersonal relationships, as well as the group as a whole may be relevant to when understanding the relationship between cognitive complexity and network perceptions. Xia et al. (2009) reported that satisfaction with the group and network ties were inextricably linked. Therefore, exploring how satisfied a group member is with their group may be an important consideration in the cognitive complexity and network perception link. While satisfaction can refer to a dyadic relationship (e.g., Johnson, 2001), the complex nature of group relationships may necessitate a measure that assesses satisfaction with the group as a whole.

Satisfaction with the group was assessed with the Small Group Relational Satisfaction Scale. Anderson, Martin, and Riddle (2001) created this scale to assess the quality of group life. Using a 5-point Likert scale ranging from “strongly disagree” to “strongly agree”, participants

indicated their agreement with 12 statements (e.g., “The group members spend time getting to know each other,” “The members make me feel like I am part of the group,” “I look forward to coming to group meetings,” “The members make me feel liked,” “My absence would not matter to the group,” “I can trust my group members”). The scale has been found to be a reliable and valid measure of group satisfaction and may provide a useful tool for measuring perceptions and feelings among group members (Anderson et al., 2001).

While Anderson and colleagues reported a single factor solution, a factor analysis measuring group relational satisfaction indicated a three factor solution (eigenvalues of 4.84, 1.35, 1.25) accounting for 40.31, 51.53, 61.96% of the variance. However, using Cronbach’s alpha, the scale of all 12 items had an internal consistency of .84 and the items were used as single construct measuring satisfaction.

Organizational identification. If an individual feels strongly connected to others within their network, this may shape their perceptions of the connections among other members and organizational identity has been linked to positive outcomes for both organizations and organization members and refers to how connected an individual feels with their organization (Scott & Stephens, 2009). This study used four items from Cheney’s (1982) Organizational Identity Questionnaire (OIQ). Consistent with Scott and Stephens (2009), items that refer to “oneness with” or “commonality with” one’s organization (e.g., “I feel I have a lot in common with others in this organization,” “I find it easy to identify with this organization,” “I find that my values and the values of those in this organization are very similar,” and “I view my organization’s problems as my own”) will allow measurement of identification, as opposed to commitment, and avoid other criticisms of the OIQ.

A factor analysis of the items measuring organizational identification indicated a one factor solution (eigenvalue= 2.05) accounting for 51.31% of the variance and all items loaded at .55. Using Cronbach's alpha, internal consistency of the scale was acceptable at .65. All four items in measuring organizational identity.

Group outcomes. Finally, participants were asked to assess group outcomes. They were asked to rate their board's effectiveness at achieving organizational goals, as well as speak to some of the successes and failures of their group. A scale of 1 to 10 was used where 10 was completely effective and 1 was completely ineffective. Participants were also asked to describe any challenges their executive board is facing (or has faced), along with any challenges they have experienced when managing friendship and task relationships with fellow board members.

Motivation. In a follow-up survey, participants were asked about their reasons for joining the executive board. Reasons included philanthropy ("I am concerned about the organization's philanthropic endeavors"), leadership ("I want to have a leadership role where I can impact my organization"), "friendships" (I want to spend time with my friends"), advancement ("I want to gain experience that will help me in the future"), networking ("I want to meet and develop relationships with people both within and outside my organization"), change ("I want to change the direction that my organization is headed"), ability ("I have the skills/qualities/talents that allow me to do my position in a way that benefits my organization"). A scale of 1 to 5 was used where 1 indicated that the reason was not important at all and 5 indicated that it was very important.

In summary, capturing the perceptions that group members have not just about their own relationships, but the relationships between fellow group members, requires capturing an intricate web of connections between and among all group members. Cognitive Social

Structures are a vehicle for grasping each group member's own slice of how they view the landscape of their group. Slices from all group members can then be reduced into locally aggregated and consensus structures to reflect agreement about the relationship between the two parties involved, as well as the general consensus of the group. Exploring cognitive complexity, using the Role Category Questionnaire for its flexibility, validity, and reliability, will shed light on these network perceptions. Finally, including measures of group satisfaction, identity, effectiveness, and motivation may provide further insight into just how cognitive complexity is tied to network perceptions.

Overall, study will look at members of social organizations who work closely together to accomplish task goals, such as making decisions and problem solving. Managing these blended relationships has implications for how they perceive the relationships within the group. Cognitive complexity will be looked at for its influence on how accurate one is in perceiving the friendship and task networks, as well as how differentiated or nuanced their perceptions are of the networks. Cognitive complexity may also be influencing the centrality of an individual in both friendship and task networks. The proposed study may serve to highlight the ways in which individuals perceive their organizations and groups in terms of a variety of relationships and enhance understanding of why individuals are more or less central within their communication networks.

CHAPTER 4

RESULTS

This project explored the perceptions that group members have about not just their own relationships, but the relationships between fellow group members. Several variables were examined for their impact on participant accuracy about these communication networks, as well as their centrality within these networks. This chapter will report the descriptive data and correlations of relevant variables, as well as test the hypotheses and research questions surrounding network accuracy, network centrality, and network differences.

Descriptive and Correlation Data

Network accuracy and centrality

An executive board member's accuracy, as well as in-degree and out-degree centrality, was computed for 4 matrices: Friendship Locally Aggregated Structure (LAS), Friendship Consensus Structure (CS), Task Locally Aggregated Structure (LAS), and Task Consensus Structure (CS). Means, standard deviations, minimums, and maximums are reported in Table 1. Participants' perceptions tended to be more accurate when compared to the consensus structures than when compared to the locally aggregated structures. The accuracy mean (with standard deviation) for friend consensus structure was .78 (.11) compared to the friend locally aggregated structure mean of .65 (.13), while the accuracy mean for task consensus structure was .71 (.09) compared to the task locally aggregated structure of .59 (.13). This suggests that participants were more accurate in assessing network ties when compared to what everyone else in the

network perceived to be true, not necessarily what the two parties involved in the tie deemed to be true.

There was little difference between the means for each network's in and out degree centrality. Additionally, the centrality means indicated that the task networks were more dispersed than the friendship networks. Means, standard deviations, minimums, and maximums are also reported in Table 1. Centrality means (with standard deviations) for the friend locally aggregated structure were .66 (.08) in and .66 (.08) out, while means for the friend consensus structure were .61 (.09) and .61 (.07). Means for the task locally aggregated structure were .39 (.17) and .39 (.13), while means for the task consensus structure were .36 (.14) and .35 (.11)

Table 1						
<i>Descriptive Data for Network Accuracy and Centrality</i>						
		<u>N</u>	<u>Min</u>	<u>Max</u>	<u>Mean</u>	<u>Std Dev.</u>
<u>Friend LAS Network</u>						
	Accuracy	47	.23	.85	.65	.13
	In Degree Centrality	47	.49	.84	.66	.08
	Out Degree Centrality	47	.47	.83	.66	.08
<u>Friend CS Network</u>						
	Accuracy	47	.51	.93	.78	.11
	In Degree Centrality	47	.43	.76	.61	.09
	Out Degree Centrality	47	.47	.74	.61	.07
<u>Task LAS Network</u>						
	Accuracy	47	.34	.87	.59	.13
	In Degree Centrality	47	.07	.81	.39	.17
	Out Degree Centrality	47	.15	.71	.39	.13
<u>Task CS Network</u>						
	Accuracy	47	.52	.91	.71	.09
	In Degree Centrality	47	.12	.76	.36	.14
	Out Degree Centrality	47	.18	.62	.35	.11

Additionally, group effects for accuracy and centrality were assessed. Accuracy scores significantly varied across executive boards. With the exception of task in-degree centrality in the LAS and CS networks, centrality significantly varied across executive boards. *F*-ratios and,

where homogeneity of variance was violated, *Welch's F-ratios* are reported in Table 2. These results suggest that the effect of the executive board should be taken into consideration during further analyses.

Table 2		
<i>Group Effect for Network Accuracy and Centrality</i>		
		<u>Group Effect</u>
<u>Friend LAS Network</u>	Accuracy	Welch's $F[4, 20.47] = 18.33, p = .00, r = .89$
	In Degree Centrality	Welch's $F(4, 19.81) = 14.10, p = .00, r = .77$
	Out Degree Centrality	$F(4, 42) = 18.56, p = .00, r = .80$
<u>Friend CS Network</u>	Accuracy	$F(4, 42) = 3.46, p < .05, r = .50$
	In Degree Centrality	$F(4, 42) = 12.26, p = .00, r = .73$
	Out Degree Centrality	$F(4, 42) = 23.57, p = .00, r = .83$
<u>Task LAS Network</u>	Accuracy	$F(4, 42) = 22.62, p = .00, r = .82$
	In Degree Centrality	$F(4, 42) = 2.10, p > .05, r = .41$
	Out Degree Centrality	$F(4, 42) = 4.47, p < .01, r = .60$
<u>Task CS Network</u>	Accuracy	$F(4, 42) = 9.23, p = .00, r = .68$
	In Degree Centrality	$F(4, 42) = 2.11, p > .05, r = .41$
	Out Degree Centrality	$F(4, 42) = 5.52, p < .01, r = .59$

Correlations indicate that participant accuracy for the friend LAS, friend CS, task LAS, and task CS matrices were significantly correlated at the .01 or .05 levels. This suggests some level of consistency in how participants perceive both the friendship and task relationships between and among their group members. Furthermore, accurately perceiving task relationships (based on both the LAS and CS matrices) was significantly, but negatively, correlated to both in and out degree centrality for the friendship networks (based on both LAS and CS matrices). This suggests that participants who accurately perceived the task relationships were less central within the friendship network. Finally, with the exception of in degree centrality for the task consensus structure not correlating to friend out degree centrality for both the locally aggregated structure

and consensus structure, all the other centrality scores significantly correlated across matrices. Correlations are reported in Table 3.

Table 3

Correlations for Network Accuracy and Centrality

		Fr LAS Acc	Fr CS Acc	Task LAS Acc	Task CS Acc	Fr LAS InD	Fr CS InD	Task LAS InD	Task CS InD	Fr LAS OutD	Fr CS OutD	Task LAS OutD	Task CS OutD
Friend LAS Accuracy	<i>r</i> Sig. N	1 47	.79** .00 47	.42** .00 47	.37* .01 47	-.09 .56 47	.00 .98 47	.01 .95 47	.07 .64 47	-.09 .57 47	-.02 .92 47	-.02 .90 47	.09 .56 47
Friend CS Accuracy	<i>r</i> Sig. N	.791** .00 47	1 47	.42** .00 47	.40** .01 47	.08 .61 47	.25 .09 47	.03 .83 47	.11 .47 47	.04 .81 47	.19 .20 47	.06 .68 47	.13 .38 47
Task LAS Accuracy	<i>r</i> Sig. N	.421** .00 47	.42** .00 47	1 47	.78** .00 47	-.38** .01 47	-.31* .03 47	-.10 .52 47	-.01 .95 47	-.43** .00 47	-.40** .01 47	-.15 .32 47	-.01 .97 47
Task CS Accuracy	<i>r</i> Sig. N	.371* .01 47	.40** .01 47	.78** .00 47	1 47	-.45** .00 47	-.32* .03 47	-.21 .15 47	-.13 .37 47	-.48** .00 47	.43** .00 47	-.21 .16 47	-.15 .33 47
Friend LAS In Degree	<i>r</i> Sig. N	-.09 .56 47	.08 .61 47	-.38** .01 47	-.45** .00 47	1 47	.90** .00 47	.36* .01 47	.28 .06 47	.96** .00 47	.89** .00 47	.50** .00 47	.35* .02 47
Friend CS In Degree	<i>r</i> Sig. N	.00 .98 47	.25 .09 47	-.31* .03 47	-.32* .03 47	.90** .00 47	1 47	.38** .01 47	.31* .04 47	.85* .00 47	.95** .00 47	.55** .00 47	.42** .00 47
Task LAS In Degree	<i>r</i> Sig. N	.01 .95 47	.03 .83 47	-.10 .52 47	-.21 .15 47	.36* .01 47	.38** .01 47	1 47	.90** .00 47	.39** .01 47	.29* .05 47	.81** .00 47	.79** .00 47
Task CS In Degree	<i>r</i> Sig. N	.07 .64 47	.11 .47 47	-.01 .95 47	-.13 .37 47	.28 .06 47	.31* .04 47	.90** .00 47	1 47	.29 .05 47	.22 .14 47	.80** .00 47	.90** .00 47
Friend LAS Out Degree	<i>r</i> Sig. N	-.09 .57 47	.04 .81 47	-.43 .00 47	-.48** .00 47	.96** .00 47	.85* .00 47	.39** .01 47	.29 .05 47	1 47	.86** .00 47	.51** .00 47	.33* .02 47
Friend CS Out Degree	<i>r</i> Sig. N	-.02 .92 47	.19 .20 47	-.40** .01 47	-.43** .00 47	.89** .00 47	.95** .00 47	.29* .05 47	.22 .14 47	.86** .00 47	1 47	.46** .00 47	.35* .02 47
Task LAS Out Degree	<i>r</i> Sig. N	-.02 .90 47	.06 .68 47	-.15 .32 47	-.21 .16 47	.50** .00 47	.55** .00 47	.81** .00 47	.80** .00 47	.51** .00 47	.46** .00 47	1 47	.86** .00 47
Task CS Out Degree	<i>r</i> Sig. N	.09 .56 47	.13 .38 47	-.01 .97 47	-.15 .33 47	.35* .02 47	.42** .00 47	.79** .00 47	.90** .00 47	.33* .02 47	.35* .02 47	.86** .00 47	1 47

*Correlation is significant at the .01 level (2-tailed).

**Correlation is significant at the .05 level (2-tailed).

Cognitive complexity

As discussed previously, scores for the role category questionnaire ranged from 7 to 36 with a mean (standard deviation) of 20.26 (5.94). These raw scores are in line with past research where the RCQ was used with an undergraduate sample. Donovan-Kicken et al. (2012) averaged liked and disliked scores for a range of 1.00 to 21.50 with a mean (standard deviation) of 5.93 (3.07), while Dobosh (2005) added liked and disliked scores for a range from 2 to 39 with a mean (standard deviation) of 18.82 (6.63). Raw scores were used for analysis, as well as a mean split for high (24 participants) or low cognitive complexity (23). The mean was 19.76 (5.25) for men and 20.53 (6.37) for women. Correlations with other independent and mediating variables are reported in Table 4. RCQ raw scores and mean splits did not significantly correlate with accuracy, centrality, or any of the other variables (see Table 5).

Organizational identity

Participants strongly identified with their organizations ($\bar{x} = 4.30$, $SD = .53$) and a one-way analysis of variance indicated that there were significant group differences in organizational identification between executive teams, $F(4, 42) = 6.32$, $p = .00$, $r^2 = .61$. More specifically, participants in organization 3 ($\bar{x} = 3.81$, $SD = .34$) reported being significantly less identified with their organization than members of the other organizations. Further, organizational identity did not significantly vary across the low and high cognitive complexity groups, $F(1, 45) = 1.06$, $p > .05$, $r = .15$. Correlations with other independent and mediating variables are reported in Table 4. Additionally, organizational identity significantly correlated with both in and out degree centrality for all networks, as well as a motivation to spend time with friends, and is reported in Table 5. Organizational identity did not correlate with accuracy.

Satisfaction

Overall, participants reported being satisfied with the group relationships on their executive teams, with a mean (with standard deviation) of 4.07 (.50). While a one-way analysis of variance indicated that executive boards were not significantly different overall in their satisfaction level, $F(4, 42) = 1.94, p > .05, r = .39$, organization 4 ($\bar{x} = 3.73, SD = .77$) was significantly less satisfied than organizations 2 ($\bar{x} = 4.24, SD = .33$) and 5 ($\bar{x} = 4.27, SD = .50$). While these differences are likely attributed to chance, they may be an indication that some executive boards differ from the others. Finally, satisfaction did not differ across low and high cognitive complexity groups, $F(1,45) = .42, p > .05, r = .01$. Satisfaction did not correlate with accuracy, centrality, or any other variables (see Table 4 and 5).

Effectiveness

On a scale of 1 to 10 rating how effective participants believed their executive board to be, the mean (with standard deviation) was 7.74 (.88). Overall, a one-way analysis of variance indicated that executive boards did not significantly vary in terms of perceived effectiveness, $F(4, 42) = 2.26, p = .08, r = .42$. However, individual group comparisons indicated that executive board 3 ($\bar{x} = 8.21, SD = .99$) was significantly different from executive board 1 ($\bar{x} = 7.44, SD = .73$) and 2 ($\bar{x} = 7.25, SD = .89$). Again, these differences are likely attributed to chance, but, for example, organization 2's low satisfaction and low effectiveness may indicate some deeper organizational differences. Further, effectiveness did not significantly differ across high and low cognitive complexity groups, $F(1,45) = .00, p > .05, r = .01$. Correlations with other independent and mediating variables are reported in Table 4. Effectiveness significantly

and negatively correlated with centrality across all networks except for out degree centrality in the task locally aggregated structure network and is reported in Table 5.

Role

While titles of positions varied organization to organization, all roles were coded into categories of president (5), finance (4), recruitment (6), house management (5), administration (7), and membership (17) (including social, philanthropy, educational programming, and risk management responsibilities for both new and old members). Additionally, the role that a person played did not differ across high and low cognitive complexity groups, $F(1,45) = 1.06, p > .05, r = .11$. Correlations with other independent and mediating variables are reported in Table 4.

Motivation

Although follow-up response rate was poor (64%), a desire to have a leadership role where one could have an impact on the organization was the biggest motivator ($\bar{x} = 4.7, SD = .53$), while spending time with friends was the lowest motivator ($\bar{x} = 3.47, SD = 1.28$). Other motivators included wanting to gain experience that will help one in the future ($\bar{x} = 4.67, SD = .55$), having the ability to do their position in such a way that benefits the organization ($\bar{x} = 4.6, SD = .50$), wanting to change the direction that the organization is headed ($\bar{x} = 4.33, SD = .71$), networking with people from within and outside the organization ($\bar{x} = 4.23, SD = 1.07$), and caring about the organization's philanthropy ($\bar{x} = 3.53, SD = 1.14$). Correlations of the desire to have a leadership role and spend time with friends with other independent and mediating variables are reported in Table 4. Additionally, being motivated to spend time with friends was significantly and negatively correlated to task accuracy in both the locally aggregated structure (r

= -.48, $n = 30$, $p = .01$) and consensus structure networks ($r = -.40$, $n = 30$, $p = .03$) and positively correlated with task accuracy and centrality, reported in Table 5.

Table 4									
<i>Correlations of Independent and Mediating Variables</i>									
		RCQ *raw scores	RCQ *mean split	Org Identity	Satisfaction	Effectiveness	Role	Leader role	Time with friends
RCQ *raw scores	<i>r</i> Sig. N	1 47	.80** .00 47	.07 .65 47	.05 .72 47	-.01 .97 47	-.22 .13 47	.06 .77 30	-.03 .87 30
RCQ *mean split	<i>r</i> Sig. N	.80** .00 47	1 47	.15 .31 47	-.10 .52 47	.01 .97 47	-.11 .45 47	-.12 .55 30	.00 .96 30
Org Identity	<i>r</i> Sig. N	.07 .65 47	.15 .31 47	1 47	-.05 .72 47	-.15 .32 47	-.14 .37 47	.22 .25 30	.57** .00 30
Satisfaction	<i>r</i> Sig. N	.05 .72 47	-.10 .52 47	-.05 .72 47	1 47	-.07 .63 47	-.09 .55 47	-.01 .96 30	-.12 .54 30
Effectiveness	<i>r</i> Sig. N	-.01 .97 47	.01 .97 47	-.15 .32 47	-.07 .63 47	1 47	.06 .71 47	.22 .25 30	-.16 .41 30
Role	<i>r</i> Sig. N	-.22 .13 47	-.11 .45 47	-.14 .37 47	-.09 .55 47	.06 .71 47	1 47	.25 .18 30	.05 .79 30
Want to have a leader role	<i>r</i> Sig. N	.06 .77 30	-.12 .55 30	.22 .25 30	-.01 .96 30	.22 .25 30	.25 .18 30	1 30	.46** .01 30
Want to spend time with friends	<i>r</i> Sig. N	-.03 .87 30	.00 .96 30	.57** .00 30	-.12 .54 30	-.16 .41 30	.05 .79 30	.46** .01 30	1 30
*Correlation is significant at the .01 level (2-tailed).									
**Correlation is significant at the .05 level (2-tailed).									

Table 5						
<i>Correlations of Accuracy and Centrality with Cognitive Complexity, Organizational Identity, Effectiveness, and Time with Friends</i>						
		RCQ <i>*raw scores</i>	Satisfaction	Org Identity	Effectiveness	Time with friends
Friend LAS Accuracy	<i>r</i> Sig. N	.10 .53 47	.05 .75 47	-.16 .27 47	-.18 .26 47	-.13 .49 30
Friend CS Accuracy	<i>r</i> Sig. N	.01 .94 47	.18 .22 47	-.05 .72 47	-.22 .13 47	.03 .89 30
Task LAS Accuracy	<i>r</i> Sig. N	-.06 .71 47	.24 .11 47	-.16 .30 47	.02 .89 47	-.48** .01 30
Task CS Accuracy	<i>r</i> Sig. N	-.18 .24 47	.22 .14 47	-.18 .22 47	.06 .69 47	-.40* .03 30
Friend LAS In Degree Centrality	<i>r</i> Sig. N	.02 .91 47	.19 .20 47	.27 .07 47	-.30* .04 47	.44* .02 30
Friend CS In Degree Centrality	<i>r</i> Sig. N	-.03 .83 47	.18 .22 47	.37** .01 47	-.33* .02 47	.53** .00 30
Task LAS In Degree Centrality	<i>r</i> Sig. N	.14 .37 47	.03 .83 47	.52** .00 47	-.33* .03 47	.41* .02 30
Task CS In Degree Centrality	<i>r</i> Sig. N	.18 .22 47	.08 .59 47	.46** .00 47	-.30* .04 47	.34 .07 30
Friend LAS Out Degree Centrality	<i>r</i> Sig. N	.01 .97 47	.20 .17 47	.30* .04 47	-.32* .03 47	.45* .01 30
Friend CS Out Degree Centrality	<i>r</i> Sig. N	-.12 .42 47	.12 .43 47	.36* .01 47	-.36* .01 47	.52** .00 30
Task LAS Out Degree Centrality	<i>r</i> Sig. N	.07 .63 47	.15 .33 47	.46** .00 47	-.23 .12 47	.43* .02 30
Task CS Out Degree Centrality	<i>r</i> Sig. N	.08 .61 47	.05 .73 47	.41** .00 47	-.30* .04 47	.37* .04 30
*Correlation is significant at the .01 level (2-tailed).						
**Correlation is significant at the .05 level (2-tailed).						

Network Accuracy

Cognitive complexity was hypothesized to impact the accuracy of group member perceptions. More cognitively complex individuals would more accurately assess the relationships within their friendship and task networks. Additionally, analysis explored the impact of organizational identity, organizational effectiveness, and satisfaction on the relationship between cognitive complexity and network accuracy. This next section will discuss the findings for each both the locally aggregated structure and consensus structure of the friendship network, as well as the locally aggregated structure and consensus structure of the task network.

Friendship LAS

The means (with standard deviations) for accuracy of the friendship locally aggregated structure network were .63 (.14) for the low cognitively complex group and .66 (.12) for the high cognitive complexity group. Multilevel linear modeling using the RCQ mean split indicated that relationship between cognitive complexity and accuracy varied significantly across different executive boards ($X^2_{\text{change}} = 7.17$, $df_{\text{change}} = 1$, $p < .01$). However, cognitive complexity did not predict accuracy of the friendship locally aggregated structure network ($F(1, 42.27) = .15$, $p = .71$). Organizational identity, effectiveness, and satisfaction were also examined for the potential mediating effect on the relationship between cognitive complexity and accuracy. Organizational identity did not impact the relationship between cognitive complexity and accuracy ($F(1, 42.04) = .03$, $p = .86$). Further, perceptions of organization effectiveness did not mediate the relationship between cognitive complexity and accuracy ($F(1, 41.98) = .02$, $p = .89$). Finally, participant satisfaction did not impact the relationship between cognitive complexity and

accuracy ($F(1, 44.86) = .19, p = .67$). Hierarchical linear modeling using RCQ raw scores replicated these findings. RCQ did not significantly impact accuracy ($b = .00, p = .60$). The relationship between cognitive complexity and accuracy was not mediated by organizational identity ($b = -.05, p = .16$), effectiveness ($b = -.03, p = .17$), or satisfaction ($b = .02, p = .64$).

Friendship CS

The means (with standard deviations) for accuracy of the friendship consensus structure network were .78 (.11) for the low cognitive complexity group and .78 (.11) for the high cognitive complexity group. Multilevel linear modeling using the RCQ mean split indicated that relationship between cognitive complexity and accuracy did not vary significantly across executive boards ($X^2_{\text{change}} = 2.87, df_{\text{change}} = 1, p > .05$). One way analysis of variance indicated that cognitive complexity did not predict accuracy of the friendship consensus structure network ($F(1, 45) = .02, p = .88$). Organizational identity ($F(1, 44) = .01, p = .93$), effectiveness ($F(1, 44) = .02, p = .89$), and satisfaction ($F(1, 44) = .00, p = .98$) also did not significantly impact the relationship between cognitive complexity and accuracy. Again, hierarchical linear modeling using the rcq raw scores replicated these findings. RCQ did not significantly impact accuracy ($b = .00, p = .97$) and the relationship was not mediated by organizational identity ($b = -.01, p = .65$), effectiveness ($b = -.03, p = .11$), or satisfaction ($b = .04, p = .19$).

Task LAS

The means (with standard deviations) for accuracy of the task locally aggregated structure network were .594 (.12) for the low cognitive complexity group and .585 (.13) for the high cognitive complexity group. Multilevel linear modeling using the RCQ mean split

indicated that the relationship between cognitive complexity and accuracy varied significantly across groups ($X^2_{\text{change}} = 34.92$, $df_{\text{change}} = 1$, $p < .01$). However, cognitive complexity did not predict accuracy of the task locally aggregated structure network ($F(1, 42.09) = .95$, $p = .34$). Effectiveness also did not significantly shape the relationship between cognitive complexity and accuracy ($F(1, 40.61) = 1.85$, $p = .18$). However, organizational identity approached significance in its impact on the relationship between cognitive complexity and accuracy ($F(1, 41.28) = 3.89$, $p = .06$). For those who were less cognitively complex, being identified with their organization significantly predicted accuracy ($b = .09$, $t(17.74) = 2.78$, $p < .05$). This relationship did not hold up for the more cognitively complex group ($b = -.01$, $t(19.75) = -.23$, $p = .82$). Additionally, satisfaction significantly impacted the relationship between complexity and accuracy ($F(1, 40.59) = 4.11$, $p = .05$). For those who were less cognitively complex, being satisfied with their group almost significantly predicted accuracy ($b = .11$, $t(19.52) = 1.87$, $p = .08$), while satisfaction has less of an impact for those who were more cognitively complex ($b = .04$, $t(18.60) = 1.33$, $p = .20$).

Hierarchical linear modeling using the RCQ raw scores supported these findings. RCQ did not significantly impact task accuracy ($b = -.00$, $p = .45$) and the relationship was not mediated by effectiveness ($b = -.00$, $p = .67$), or satisfaction ($b = .08$, $p = .01$). Using the raw rcq scores in analysis resulted in satisfaction significantly mediating the relationship between complexity and accuracy, while organizational identity approached significance as a mediator ($b = -.06$, $p = .07$).

Task CS

The means (with standard deviations) for accuracy of the task consensus structure network were .72 (.09) for the low cognitive complexity group and (.70) for the high cognitive complexity group. Multilevel linear modeling using the RCQ mean split found that the relationship between cognitive complexity and accuracy varied across executive boards ($X^2_{\text{change}} = 16.95$, $df_{\text{change}} = 1$, $p < .01$). Cognitive complexity did not significantly predict accuracy ($F(1, 42.26) = 2.10$, $p = .16$). Similar to task LAS, effectiveness did not impact the cognitive complexity and accuracy relationship ($F(1, 41.39) = .95$, $p = .34$). Organizational identity approached significance ($F(1, 42.67) = 2.02$, $p = .16$), where the being identified with the organization almost significantly predicted accuracy for the less cognitively complex ($b = .06$, $t(19.02) = 2.01$, $p = .06$) than for the more cognitively complex ($b = -.03$, $t(21.73) = -.67$, $p = .51$). Satisfaction also approached significance in its impact on cognitive complexity and accuracy ($F(1, 41.39) = 3.10$, $p = .09$) with a slightly stronger impact for the less cognitively complex ($b = .06$, $t(20.99) = 1.25$, $p = .23$) than more cognitively complex ($b = .03$, $t(19.43) = 1.02$, $p = .32$).

The raw RCQ scores were used in hierarchical linear modeling the results confirmed that RCQ did not significantly impact accuracy ($b = -.003$, $p = .16$) and that effectiveness did not mediate the relationship ($b = .00$, $p = .92$). Organizational identity approached significance in mediating the complexity and accuracy relationship ($b = -.04$, $p = .11$), while satisfaction did significantly impact the complexity-accuracy relationship ($b = .05$, $p = .05$).

In sum, hypothesis 1a and 1b were not supported. Cognitive complexity does not seem to be directly impacting the perceptual accuracy of both friendship and task networks. In fact, though not significant, it appears that less cognitively complex individuals are actually more accurate when assessing their task networks. However, while perceptions of organization

effectiveness does not appear to mediate this relationship, there is some indication that satisfaction and organizational identity may be impacting the relationship between cognitive complexity and perceptions of accuracy for the task, not friendship, network.

Network Centrality

More cognitively complex individuals were hypothesized to be more central within their task and friendship networks. Additionally, a second research question explored the impact of role within the executive board on this relationship. This next section will discuss the findings.

Friend LAS

The means (with standard deviation) for in-degree centrality for the friend locally aggregated structure network were .67 (.09) for the low cognitive complexity group and .65 (.08) for the high cognitive complexity group. Multilevel linear modeling using the RCQ mean split indicated that the impact of cognitive complexity on centrality varied across executive boards ($X^2_{\text{change}} = 25.10$, $df_{\text{change}} = 1$, $p < .01$). However, cognitive complexity did not predict centrality ($F(1,41.13) = .42$, $p = .52$). Role did significantly impact this relationship ($F(1,40.12) = .64$, $p = .43$). Additionally, when raw RCQ scores were used in hierarchical linear modeling, the results were confirmed where RCQ did not predict centrality ($b = .00$, $p = .75$) and position did not mediate this relationship ($b = .00$, $p = .75$).

The means (with standard deviation) for out-degree centrality in the friend locally aggregated structure network were .67 (.09) for the low cognitive complexity group and .65 (.07) for the high cognitive complexity group. Multilevel linear modeling using RCQ mean split indicated that the impact of cognitive complexity on centrality varied across executive boards ($X^2_{\text{change}} = 29.75$, $df_{\text{change}} = 1$, $p < .01$). However, cognitive complexity is not predicting

centrality ($F(1,41.11) = 1.04, p = .31$). Again, role is not impacting the cognitive complexity and centrality relationship ($F(1,40.12) = .64, p = .43$). Additionally, when raw RCQ scores were used in hierarchical linear modeling, the results were confirmed where RCQ did not predict out-degree centrality ($b = .00, p = .80$) and position did not mediate this relationship ($b = -.00, p = .53$).

Friend CS

The means (with standard deviation) for in-degree centrality in the friend consensus structure network were .63 (.10) for the low cognitive complexity group and .60 (.08) for the high cognitive complexity group. The impact of cognitive complexity on centrality varied across executive boards ($X^2_{\text{change}} = 20.66, df_{\text{change}} = 1, p < .01$), but cognitive complexity did not predict centrality ($F(1,41.20) = .88, p = .35$). Role did not mediate this relationship ($F(1,40.20) = .02, p = .89$). Additionally, when raw RCQ scores were used in hierarchical linear modeling, the results were confirmed where RCQ did not predict centrality ($b = -.00, p = .95$) and position did not mediate this relationship ($b = -.00, p = .81$).

The means (with standard deviation) for out-degree centrality in the friend consensus structure were .62 (.08) and .60 (.07) for low and high cognitive complexity groups, respectively. Executive boards significantly varied in how cognitive complexity predicted centrality ($X^2_{\text{change}} = 37.22, df_{\text{change}} = 1, p < .01$), but cognitive complexity only did not significantly predict centrality ($F(1,41.10) = 2.68, p = .11$). Role did not mediate this relationship ($F(1,40.10) = .47, p = .50$). Additionally, when raw RCQ scores were used in hierarchical linear modeling, the results were confirmed where RCQ did not predict centrality ($b = -.00, p = .51$) and position did not mediate this relationship ($b = .00, p = .93$).

Task LAS

The means (with standard deviation) for in-degree centrality for the task locally aggregated structure network were .39 (.15) for the low cognitive complexity group and .40 (.20) for the high cognitive complexity group. Multilevel linear modeling using RCQ mean splits indicated that the impact of cognitive complexity on centrality did not vary across executive boards ($X^2_{\text{change}} = 1.44$, $df_{\text{change}} = 1$, $p > .05$). Further, cognitive complexity did not predict centrality ($F(1,45) = .02$, $p = .88$). However, while role significantly impacted centrality, ($F(1,44) = 20.28$, $p = .00$), but did not significantly moderate the relationship between cognitive complexity and centrality ($F(1, 44) = .12$, $p = .78$). Additionally, when raw RCQ scores were used in hierarchical linear modeling, the results were confirmed where RCQ did not predict centrality ($b = .00$, $p = .40$), while position impacted centrality ($b = -.04$, $p < .001$).

For out-degree centrality in the task locally aggregated structure, the means (with standard deviation) for the low cognitive complexity group was .42 (.12) and .37 (.13) for the high complexity group. Multilevel linear modeling using mean splits indicated that the impact of cognitive complexity on centrality varied across executive boards ($X^2_{\text{change}} = 6.43$, $df_{\text{change}} = 1$, $p < .05$), but did that cognitive complexity did not predict centrality ($F(1,41.71) = 1.60$, $p = .21$). However, again role significantly impacted centrality ($F(1,40.62) = 8.57$, $p < .01$), but failed to significantly moderate the cognitive complexity and centrality relationship ($F(1,40.57) = 2.80$, $p = .10$). Additionally, analysis with raw RCQ scores did not predict centrality ($b = .00$, $p = .69$), while position drove indicated out-degree centrality ($b = -.02$, $p = .02$).

Task CS

The means (with standard deviation) for in-degree centrality for the task consensus structure network were .35 (.12) for the low cognitive complexity group and .36 (.16) for the high cognitive complexity group. Multilevel linear modeling using RCQ mean split indicated that the impact of cognitive complexity on centrality did not vary across executive boards ($X^2_{\text{change}} = 1.42$, $df_{\text{change}} = 1$, $p > .05$). However, while cognitive complexity did not predict centrality ($F(1,45) = .17$, $p = .68$), role significantly predicted centrality ($F(1,44) = 19.11$, $p = .00$). Unfortunately, role did not significantly moderate the relationship between complexity and centrality ($F(1,44) = .00$, $p = .99$). Additionally, when raw RCQ scores were used in hierarchical linear modeling, the results were confirmed where RCQ did not predict centrality ($b = .00$, $p = .27$) and position impacted centrality ($b = -.04$, $p < .001$). For out-degree centrality in the task consensus structure, the means (with standard deviation) were .36 (.11) for the low cognitive complexity group and .35 (.11) for the high complexity group. Multilevel linear modeling indicated that the impact of cognitive complexity on centrality varied across executive boards ($X^2_{\text{change}} = 8.41$, $df_{\text{change}} = 1$, $p < .01$), but did that cognitive complexity did not predict centrality ($F(1,41.51) = .35$, $p = .56$). However, while role significantly predicted centrality, ($F(1,40.38) = 12.09$, $p = .00$), it failed to moderate the relationship between complexity and centrality ($F(1,40.35) = 1.07$, $p = .31$). Additionally, when raw RCQ scores were used in hierarchical linear modeling, the results were confirmed where RCQ did not predict centrality ($b = .00$, $p = .72$), while position predicted centrality ($b = -.02$, $p = .01$).

The impact of a participant's role on the executive board is a key factor in predicting in and out degree centrality in the task network. With certain roles come certain duties and expectations that clearly shaped member perceptions. Table 6 provides the task in and out

degree centrality for each position. Presidents, along with participants who are involved in the financial and recruitment efforts of their organization, were consistently more central within the task networks, while the executive board members who served as external delegates (working with committees outside of their organization) were less central. However, role did not appear to impact friendship ties.

Table 6

Executive Board Role and Centrality

	N	Task LAS Matrix Centrality		Task CS Matrix Centrality	
		In Degree Mean (SD)	Out Degree Mean (SD)	In Degree Mean (SD)	Out Degree Mean (SD)
President	5	.69 (.09)	.59 (.11)	.65 (.11)	.54 (.10)
Recruitment	6	.44 (.16)	.38 (.10)	.37 (.06)	.35 (.07)
Finance	4	.50 (.06)	.42 (.10)	.44 (.09)	.36 (.09)
House Management	5	.34 (.12)	.36 (.12)	.28 (.05)	.30 (.07)
External Delegate	3	.14 (.09)	.22 (.05)	.18 (.05)	.24 (.04)
Administration	7	.38 (.18)	.40 (.11)	.31 (.09)	.35 (.09)
Membership	17	.33 (.12)	.37 (.11)	.31 (.10)	.34 (.09)
Total	47	.39 (.17)	.39 (.13)	.36 (.14)	.35 (.11)

In sum, hypothesis 2a and 2b were not supported. Cognitive complexity does not appear to be directly predicting network centrality. However, when exploring the locally aggregated structure and consensus structure from the task network, the role that one has on the executive board significantly predict their in and out degree centrality, but fails to significantly moderate the relationship between cognitive complexity and centrality. The same relationship does not hold for the friendship networks.

Network differences

The final research question focused on how and why accuracy varied from network to network. This next section will present findings related to the impact of cognitive complexity on accuracy network differences, as well as the implications of relevant motivating variables and centrality on network accuracy.

Accuracy differences between task and friendship networks where the difference between one's accuracy score for both the friend and task locally aggregated structures were computed. The same was done for the task and friend consensus structures. The result was a locally aggregated structure accuracy difference score and a consensus structure accuracy difference score. Higher scores indicated that participants varied in their accurate perceptions across friendship and task networks. Lower scores indicated that participants were consistent in their perceptions across friend and task networks. Participants were split into high difference and low difference groups based on the mean.

The impact of cognitive complexity was explored for its impact on network perception differences. When comparing accuracy scores for task and friendship locally aggregated structures, means (with standard deviations) were .14 (.11) for the low cognitive complexity group and .10 (.07) for the high complexity group, suggesting that more cognitively complex network members are more consistent in their perceptions. However, this finding was not significant ($F(1, 45) = 1.98, p = .18$). When comparing scores for the task and friendship consensus structures, means (with standard deviations) were .09 (.08) for the low complexity group and .11 (.07) for the high complexity group, suggesting that less complex individuals are more consistent in their perceptions. Again, these differences were insignificant ($F(1, 45) = .67$,

$p = .42$). Cognitive complexity does not appear to effect consistency in accuracy across networks.

There are also several variables that may motivate organization members to join their executive boards. These factors may impact how accurately they perceive come networks over others. A desire to have a leadership role on the executive board did not significantly impact accuracy of the friend locally aggregated structure ($F(2, 27) = .88, p = .43$), friend consensus structure ($F(2, 27) = .02, p = .98$), task locally aggregated structure ($F(2, 27) = .61, p = .55$), and task consensus structure ($F(2, 27) = 1.128, p = .35$). Additionally, joining the executive board in order to spend time with friends did not significantly impact accuracy of the friend locally aggregated structure ($F(2, 25) = 1.58, p = .21$), or the friend consensus structure ($F(2, 25) = 1.10, p = .38$). However, it was approaching significance for the task locally aggregated structure ($F(4, 25) = 2.52, p = .07$), and task consensus structure ($F(2, 25) = 2.16, p = .10$). More specifically, individuals who indicated that it was very important to spend time with friends as a motivator for joining their executive board were less accurate when perceiving task relationships ($\bar{x} = .52$ and $.67$, $SD = .10$ and $.10$, $n=8$, respectively) than those who indicated that spending time with friends was not important at all ($\bar{x} = .74$ and $.81$, $SD = .04$ and $.05$, $n=3$, respectively).

Finally, previous literature has highlighted the relationship between centrality and accurate network perceptions. In-degree and out-degree centrality scores for friend and task locally aggregated and consensus structures were split at the mean into high and low centrality. The impact of in and out degree centrality on friendship and task networks was investigated.

Centrality in the friendship networks was explored. In-degree centrality for the friend locally aggregated structure did not significantly predict accuracy of the friend LAS matrix, ($F(1, 45) = .85, p = .36, r = .14$), though it approached significance for the task LAS matrix ($F(1, 45)$

= 3.48, $p = .07$, $r = .27$) where less central members ($\bar{x} = .62$, $SD = .14$) were more accurate than more central members ($\bar{x} = .55$, $SD = .10$). In-degree centrality for the consensus structure matrix did not significantly predict the accuracy of the friend CS matrix ($F(1, 45) = 1.57$, $p = .32$, $r = .18$) or task CS matrix ($F(1, 45) = .73$, $p = .40$, $r = .12$). Out-degree centrality for the locally aggregated structure significantly predicted group differences in accuracy in the friend LAS matrix ($F(1, 45) = 4.10$, $p = .05$, $r = .12$), as well as accuracy in the task LAS matrix (Welch's $F(1, 42.03) = 14.54$, $p = .00$, $r = .46$). In both cases, less central members ($\bar{x} = .68$ and $.64$, $SD = .13$ and $.13$, respectively) were more accurate than more central members ($\bar{x} = .60$ and $.52$, $SD = .12$ and $.07$, respectively). Finally, out-degree centrality for the consensus structure did not significantly impact friend CS matrix ($F(1, 45) = .04$, $p = .85$, $r = .00$), but it did for task CS matrix ($F(1, 45) = 10.34$, $p = .00$, $r = .43$). Again, for the task CS matrix, less central members ($\bar{x} = .75$, $SD = .09$) were more accurate than the more central members ($\bar{x} = .67$, $SD = .07$). Centrality in the friendship network is impacting perception accuracy. However, contrary to prior research, network members less central in the friendship network are more accurate when predicting friendship and task network ties.

Centrality in the task networks was also explored. In-degree LAS centrality indicated no group differences in accuracy among the friend LAS ($F(1, 45) = .05$, $p = .82$, $r = .04$) and task LAS ($F(1, 45) = .18$, $p = .68$, $r = .02$) networks. In-degree CS centrality also indicated no group differences in accuracy among the friend CS ($F(1, 45) = .21$, $p = .65$, $r = .06$) and task CS ($F(1, 45) = .04$, $p = .85$, $r = .00$) networks. Out-degree centrality in the task LAS network did not predict group differences in accuracy in the friend LAS ($F(1, 45) = .24$, $p = .63$, $r = .07$) network, but did impact differences in accuracy perceptions in the task LAS matrix ($F(1, 45) = 4.06$, $p = .05$, $r = .29$) where less central members ($\bar{x} = .63$, $SD = .12$) were more accurate than

more central members ($\bar{x} = .55$, $SD = .12$). Finally, out-degree CS centrality indicated no group differences in accuracy among the friend CS ($F(1, 45) = .0$, $p = .77$, $r = .04$) or task CS ($F(1, 45) = .07$, $p = .79$, $r = .05$) networks.

In understanding how and why accuracy varies across different types of communication networks, several observations can be made. First, cognitive complexity does not appear to impact consistency in perception accuracy. Second, individuals who were motivated to spend time with friends may be less accurate in their perceptions of the task networks. Finally, while centrality has often been linked with accurately perceiving network ties, this study found that being less central within the friendship network may enable some members to be more accurate in their assessment of not only that network, but also the task networks in which they communicate.

This project posited that more cognitive complexity was directly related to accuracy perceptions and centrality in both friendship and task networks. While cognitive complexity does not seem to be predicting accuracy or centrality in either types of networks, some key findings emerged from analysis. First, it appears that less cognitively complex individuals may be more accurate in assessing their task networks. Additionally, the role of organizational identity and satisfaction are potentially mediating the relationship between cognitive complexity and accurately perceiving task networks. Second, there appears the role that one has in a group strongly impacts their centrality within the task networks of that group. Finally, several observations were made regarding how and why network accuracy varies. The next chapter will explore these findings in depth.

CHAPTER 5

DISCUSSION

Understanding both the task and social dimensions of groups allows for a more comprehensive understanding of group communication. This project sought to explore not only the perceptions that members have about task and friendship relationships with fellow group members, but also their perceptions about the friendship and task relationships between fellow group members. Within a model of network structuration where perceptions serve as rules and resources for structuring (and restructuring) communication, variables such as cognitive complexity, satisfaction, organizational identity, and role were examined for their impact on this process. While the relationships between these variables and both perceptual accuracy and network centrality were unexpected, the surprising nature of the findings invites further investigation and a shift in thinking about task and social dimensions of group communication. In addition to explaining this project's findings, this chapter will discuss limitations of the project, as well as outline research contributions and future directions.

Findings and Explanations

Before hypotheses were tested and research questions answered, correlations of relevant variables indicated some interesting relationships. First, role category questionnaire scores, measuring cognitive complexity, did not correlate to any of the measures of accuracy or centrality, as well as any other moderating or mediating variables. This suggests no direct relationship between cognitive complexity and network accuracy or centrality. Second, organizational identity correlated to centrality, indicating that more identified group members were also perceived as being more central. Third, motivation to spend time with friends was

negatively correlated to accurate perceptions of the task network, indicating that individuals motivated by friendship were also less accurate in assessing the task relationships among group members. Finally, effectiveness negatively correlated to centrality. This suggests that members who were not central within their group's friendship and task networks viewed their group as being more effective as achieving organizational goals. While these correlations suggest relationships (or lack thereof) between variables, they were explored in depth through testing the hypotheses and addressing the research questions.

Because cognitive complexity influences the way that individuals perceive, classify, and make sense out of phenomena, leading to more sophisticated impressions of their environment, it was hypothesized that more cognitively complex individuals would more accurately perceive not only their own friendship and task relationships, but also the friendship and task relationships among fellow group members. Findings from this study do not support these hypotheses. When perceiving the friendship networks, there were no significant group differences between high and low cognitive complexity groups. Additionally, organizational identity, effectiveness, and satisfaction had no impact on this relationship. However, when perceiving the task networks, less cognitively complex group members more accurately perceived the task network ties within their group. While this finding only approached statistical significance, it is interesting in that it was the opposite of what was hypothesized. Further, when exploring task network perceptions, satisfaction and organizational identity appeared to play mediating role in the relationship between cognitive complexity and accuracy. More specifically, it appears that, for those who are less cognitively complex, being identified with one's organization and/or satisfied with one's group may enhance their ability to accurately perceive their task networks.

While cognitive complexity did not impact perceptual accuracy of networks as predicted, it may only be a factor in understanding network perceptions in terms of how it interacts with other variables. While a cognitively complex individual may have the ability and skills to more accurately perceive their social landscape, it does not mean that they always draw upon those abilities. However, for the less cognitively complex, being strongly identified with their organization and/or satisfied with the relationships among group members may enhance their abilities or offset any lacking skills in perceiving their environment. This is in line with Scott and Stephens (2009) belief that being strongly identified with one's organization can lead to positive outcomes for an individual. In this case, being strongly identified or satisfied may allow a less cognitively complex individual to more accurately perceive the task relationships within their group, effectively shaping their understanding and expectations of the communication relationships and behaviors.

Cognitive complexity has been linked to person-centered communication where more complex individuals engage in higher quality communication. Because this would shape how an individual is perceived by others, it was hypothesized that more cognitively complex individuals would be more central in their task and friendship networks. However, this relationship was not supported. There were no significant differences in either in or out degree centrality between low and high cognitive complexity groups. This held for both the friendship and task networks. Simply being a cognitively complex individual and having the ability to engage in person-centered, high quality communication does not necessarily mean that the individual will always put the effort forward to do so. Thus, it may be necessary to explore variables other than (or in addition to) cognitive complexity impacting perceptions of network centrality.

One such variable that was explored was that of executive board role. While role had no impact on centrality in the friendship networks and did not moderate the relationship between centrality and task accuracy, it served as stand-alone predictor of centrality in the task networks. Certain positions, such as President, Treasurer, and Recruitment Chair, are associated with duties and responsibilities that cause the individuals holding these positions to engage in substantial communication with several, if not all, other executive board members. Positions such as Delegate involve being an organization representative to external groups, resulting in the individuals holding these positions not being required to engage in as much task-oriented communication with fellow executive board members. It would appear that an understanding of the duties and responsibilities associated with the various executive board positions shaped participant expectations about who communicates with whom. This knowledge serves as one important class of rules and resources (or Corman and Scott's coding conventions) which suggest guidelines for who talks to whom. In a complex and recursive process, these perceived relationships guide communication behavior which then serves to reconfirm the communication expectations.

Finally, this project explored how and why perceptions of accuracy varied across different types of networks. First, significant correlations suggest that there was not much variance in accuracy perceptions across networks. Accuracy scores for friendship networks correlated with accuracy scores for task networks. However, cognitive complexity was explored as a variable that might account for any differences in perceptions where more complex individuals would be more consistent how accurately they perceive both the friendship and task networks. No such relationship was found. Similar to findings looking at the effects of complexity on accuracy and

centrality, it would seem that there are other factors, beyond or in addition to cognitive complexity, influencing one's motivation to accurately perceive the networks.

Second, while various motivations for joining the executive board did not impact perceptions of the friendship network, individuals who were highly motivated to join their executive board in order to spend time with friends were often less accurate in perceiving the task relationships among their executive board. This highlights the complexity of task and relational dimensions of group communication. These groups included members who had joined their organization for social reasons, but were then motivated to take a spot on the leadership team for a variety of reasons ranging from being socially-oriented (e.g., spending time with friends) to more task-oriented (e.g., wanting a leadership role). While other motivators had no impact, the more social motive of wanting to spend time with friends had potentially damaging implications for one's perceptions of task relationships.

Finally, centrality has been linked to accurately perceiving communication networks (e.g., Krackhardt, 1990; Simpson et al., 2011) and accuracy serves as a source of information that network members can draw upon when understanding communication expectations and behavior. This project found that some group members, despite being highly central in friendship network, were less accurate in perceiving both the friendship relationships as well as task relationships between and among group members. In this case, group members who were not highly entrenched in strong friendship relationships with many others were able to more accurately assess both the task and friendship connections of others. This is in line with prior research that linked high centrality with low accuracy in recalling interactions with others (Grippa & Gloor, 2009). Group members with friendship ties that are not as strong or varied

may have a more clear perspective on the complexity of communication relationships within the group.

The impact that being motivated to spend time with friends and having lots of strong friendship ties has on accurately perceiving the friendship and task relationships highlights the complex relationship between task and social communication in group. While often conceived as two separate entities, this project highlights that communication and perceptions within one network can serve to influence communication and perceptions in other networks. More specifically, being strongly immersed in one network may cloud one's ability to accurately perceive other types of network ties. This project highlights that more socially-oriented motivations and relationships may serve to negatively impact task dimensions of group life and may serve as an example of the "dark side" of groups where the relational processes go awry (Cupach & Sptizberg, 1994; Keyton, 1999, Barker et al., 2000). For example, Young et al. (2011) found that members of a network characterized by frequent communication among members were more likely to inaccurately perceive peer delinquency. It may be that being on the periphery encourages someone to take a more in depth and nuanced look at what is going on around them. Additionally, this project serves to highlight that there are differences between friendship and task networks and that these differences require attention to be paid to both task and relational dimensions of group communication.

Limitations

There were several limitations to this project. First, executive boards of Greek organizations on a college campus were investigated. These were very specific types of group that were highly homogenous. Executive boards, as well as the larger organizations they are a part of, were comprised of members with many similarities including sex, race, and age.

Additionally, while the executive boards are concerned legitimate tasks that are similar to tasks faced by other types of more traditional organizations (e.g., finances, socialization, and recruitment), they remain the governing bodies for organizations characterized by friendship, communal living, and social activities. However, these groups provided a fertile ground for exploring relevant variables in this project. Task and social elements are a reality for all groups and, in this circumstance, these elements were even more salient. Other types of organizations and groups, such as fire fighters who sleep, take meals, and socialize in between emergency calls, face similar challenges and dynamics. Further, the homogeneity of the participants in this study could impact the generalizability of the findings. However, it was hoped that the homogeneity of the group would allow for the impact of the variable in question to emerge. While the findings did not line up with predictions, it would be interesting to explore these issues in a more heterogeneous group.

Cognitive complexity was the driving variable in this project and it did not operate as predicted or as prior research would suggest. Several reasons emerge for this. One, it may be a variable that is simply not influencing the communication process as suggested. Second, while past research validates counting constructs to comprise the measure, it may be that a deeper coding process where constructs are coded for abstractness would yield different results. Third, a larger sample size may have yielded significant findings where the relationships were only nearing significance. Finally, cognitive complexity was linked to network perceptions as part of the reticulation modality of Corman and Scott's model. However, it may be that cognitive complexity does impact network structuration process, but that it is operating within the activation and enactment modalities where perceptions of triggering events, coding conventions, and activity foci influence subsequent expectations of communication (e.g., Corman, 2006).

Finally, communication networks were assessed through asking participants about their friendship and task relationships. These perceptions were meant to appropriate the task and friendship communication relationships among group members. However, asking about these relationships in ways that were more specific to the type of communication may have yielded better results. For example, instead of asking who considered whom a friend or who worked with whom, it may have been effective to ask participants how often they engaged in certain types of communication such as sharing personal information, sharing organizational information, seeking advice for personal relationships, and seeking advice for organizational issues.

Contributions and Future Directions

Despite some limitations, this project serves as a jumping off point for future investigation into the complex nature of group communication. By exploring task and friendship networks in groups where both social and task demands are heightened, this project continued to shed light on the relational side of groups and highlights the necessity of understanding the how various types of communication networks operate together within a given group context. Getting at the complexity of group interaction by exploring the different types of communication relationships has implications for all groups where task and social realities are blended.

Additionally, Corman and Scott's theory of network structuration offers a framework for understanding the blended nature of groups where different communication networks are often at play together and in contrast to one another. While their model appears to favor exploring the complexities of one network, it may be extended to highlight the triggering events, activity foci, and coding conventions that shift a group's communication focus from more task oriented to more socially oriented communication. As groups manage both task and social realities,

members must engage in varied communication with members and the ability to do this elegantly and appropriately may vary. Corman and Scott's model provides a starting off point to continue to understand the mechanisms influencing this process.

Extending the model can take several paths. First, this project focuses on network perceptions and communication instances within the reticulation modality and future work can explore how perceptions shape the enactment and activation modalities. Second, while cognitive complexity was explored for its impacts on network accuracy and centrality, future work should continue to understand the implications of satisfaction and organizational identity in addition to other variables such as task and maintenance cohesiveness, organizational commitment, and self-monitoring. Third, while perceptions are key in the network structuration process, it is also important to also research observable communication as it relates to relevant communication networks. Finally, there are a variety of additional group contexts such as first responders, military, churches, and traditional work groups that should be explored.

In conclusion, this dissertation sought to better understand the relational side of groups. By focusing on groups where social and task dimensions were especially salient, this project used a model of network structuration to better understand the complexity of group communication where these task and social realities are inextricably linked. Perceptions of relationship ties shape expectations about communication, as well as actual communication behaviors. While cognitive complexity did not impact perceptions as expected, there did emerge some interesting findings that highlight the importance of satisfaction and organizational identity on the networks perceptions, as well as the importance of understanding how different networks affect the other and shape the structuration process.

REFERENCES

- Aakhus, M., & Rumsey, E. (2010). Crafting supportive communication online: A communication design analysis of conflict in an online support group. *Journal of Applied Communication Research*, 38, 65-84.
- Alexander, S.C., Peterson, J.L., & Hollingshead, A.B. (2003). Help is at your keyboard: Support groups on the internet. In L.R. Frey (Ed.), *Group communication in context: Studies of bona fide groups* (pp. 309-334). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Anderson, C.M., Martin, M.M., & Riddle, B.L. (2001). Small group relational satisfaction scale: Development, reliability and validity. *Communication Studies*, 52, 220-233.
- Baker-Brown, G., Ballard, E.J., Bluck, S., de Vries, B., Suedfeld, P., & Tetlock, P.E. (1992). The conceptual/integrative complexity scoring manual. In C.P. Smith, J.W. Atkinson, D.C. McClelland, & J. Veroff (Eds.), *Motivation and personality: Handbook of thematic content analysis* (pp. 393-418). New York: Cambridge University Press.
- Bales, R.F. (1950). *Interaction process analysis: A method for the study of small groups*. Reading: MA: Addison-Wesley.
- Bales, R.F. (1953). The equilibrium problem in small groups. In T. Parsons, R.F. Bales, & E.A. Shils (Eds.), *Working papers in the theory of action* (pp. 111-161). New York: Free Press.
- Barge, J.K., & Hirokawa, R.Y. (1989). Towards a communication competency model of leadership. *Small Group Behavior*, 20, 167-189.

- Barker, V.E., Abrams, J.R., Tiyaamornwong, V., Seibold, D.R., Duggan, A., Park, H.S., & Sebastian, M. (2000). New contexts for relational communication in groups. *Small Group Research*, 31, 470-503.
- Bazarova, N.N., & Hancock, J.T. (2012). Attributions after a group failure: Do they matter? Effects of attributions on group communication and performance. *Communication Research*, 39, 499-522.
- Beebe, S.A., & Masterson, J.P. (2012). *Communicating in small groups: Principles and practices*, (10th ed.). Boston: Pearson.
- Benne, K.D., & Sheats, P. (1948). Functional roles of group members. *Journal of Social Issues*, 4, 41-49.
- Bernard, H.R., Killworth, P., & Cronenfeld, D. (1984). The problem of informant accuracy: The validity of retrospective data. *Annual Review of Anthropology*, 13, 495-517.
- Bieri, J., Atkins, A.L., Briar, S., Leaman, R.L., Miller, H., & Tripoldi, T. (1966). *Clinical and social judgment*. New York: Wiley.
- Bodie, G.G., & Burleson, B.R. (2008). Explaining variations in the effects of supportive messages: A dual-process framework. *Communication Yearbook*, 32, 354-398.
- Bodie, G.G., Burleson, B.R., Holmstrom, A.J., McCullough, J.D., Rack, J.J., Hanasono, L.K., & Rosier, J.G. (2011). Effects of cognitive complexity and emotional upset on processing supportive messages: Two tests of a dual-process theory of supportive communication outcomes. *Human Communication Research*, 37, 350-376.
- Borgatti, S.P., Everett, M.G. and Freeman, L.C. 2002. Ucinet for Windows: Software for Social Network Analysis. Harvard, MA: Analytic Technologies.

- Bowler, M.C., Bowler, J.L., & Cope, J.G. (2012). Further evidence of the impact of cognitive complexity on the five-factor model. *Social Behavior and Personality*, 40, 1083-1098.
- Bowler, M.C., Bowler, J.L., & Phillips, B.C. (2009). The Big-5±? The impact of cognitive complexity on the factor structure of the five-factor model. *Personality and Individual Differences*, 47, 979-984.
- Bridge, K., & Baxter, L.A. (1992). Blended relationships: Friends as work associates. *Western Journal of Communication*, 56, 200-225.
- Brown, T.M., & Miller, C.E. (2000). Communication networks in task-performing groups: Effects of task complexity, time pressure, and interpersonal dominance. *Small Group Research*, 31, 131-157.
- Buchalter, R. (2003). Negotiating (im)permeable neighborhood borders. In L.R. Frey (Ed.), *Group communication in context: Studies of bona fide groups* (pp. 57-82). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Buhs, E., & Ladd, G.W. (2001). Peer rejection as an antecedent of young children's school adjustment: An examination of mediating processes. *Developmental Psychology*, 37, 550-560.
- Burleson, B.R. (1982). The development of comforting communication skills in childhood and adolescence. *Child Development*, 53, 1578-1588.
- Burleson, B.R. (1987). Cognitive complexity. In J.C. McCroskey & J.A. Daly (Eds.), *Personality and interpersonal communication* (305-349). Newbury Park, CA: Sage.
- Burleson, B.R. (1994). Friendship and similarities in social-cognitive and communication abilities: Social skill bases of interpersonal attraction in childhood. *Personal Relationships*, 1, 371-389.

- Burleson, B.R., & Caplan, S.E. (1998). Cognitive complexity. In J.C. McCroskey, J.A. Daly, M.M. Martin, & M.J. Beatty (Eds.), *Communication and personality: Trait perspectives* (233-286). Cresskill, NJ: Hampton Press.
- Burleson, B.R., Hanasono, L.K., Bodie, G.G., Holmstrom, A.J., Rack, J.J., Rosier, J.G., & McCullough, J.D. (2009). Explaining gender differences in responses to supportive messages: Two tests of a dual-process approach. *Sex Roles, 61*, 265-280.
- Burleson, B.R., & MacGeorge, E.L. (2002). Supportive communication. In M.L. Knapp, & J.A. Daly (Eds.), *Handbook of interpersonal communication* (3rd ed.) (374-424). Thousand Oaks, CA: Sage.
- Burleson, B.R., & Samter, W. (1985). Consistencies in theoretical and naïve evaluations of comforting messages: Two empirical studies. *Communication Monographs, 52*, 103-123.
- Burleson, B.R., & Waltman, M.S. (1988). Cognitive complexity: Using the role category questionnaire measure. In C.H. Tardy (Ed.), *A handbook for the study of human communication: Methods and instruments for observing, measuring, and assessing communication processes* (pp1-29). Norwood, NJ: Ablex Publishing.
- Campbell, K., & Wright, K.B. (2002). On-line support groups: An investigation of relationships among source credibility, dimensions of relational communication, and perceptions of emotional support. *Communication Research Reports, 19*, 183-193.
- Casciaro, T. (1998). Seeing things clearly: social structure, personality, and accuracy in social network perception. *Social Networks, 20*, 331-351.
- Casciaro, T., Carley, K.M., & Krackhardt, D. (1998). Positive affectivity and accuracy in social network perceptions. *Motivation and Emotion, 23*, 285-306.

- Cheney, G. (1982). Identification as process and product: A field study. Unpublished master's thesis, Purdue University.
- Cline, R.J.W. (1999). Communication in social support groups. In L.R. Frey, D.S. Gouran, & M.S. Poole (Eds.), *The handbook of group communication theory and research* (pp. 517-538). Thousand Oaks, CA: Sage.
- Conquergood, D. (1994). Homeboys and hoods: Gangs and cultural space. In L.R. Frey (Ed.), *Group communication in context: Studies of natural groups* (pp. 23-52). Hillsdale, NJ: Lawrence Erlbaum.
- Corman, S.R. (2006). Using activity focus networks to pressure terrorist organizations. *Computational and Mathematical Organization Theory*, 12, 35-49.
- Corman, S.R., & Bradford, L. (1993). Situational effects on the accuracy of self-reported organizational communication behavior. *Communication Research*, 20, 822-840.
- Corman, S.R., & Scott, C.R. (1994). Perceived networks, activity foci, and observable communication in social collectives. *Communication Theory*, 4, 171-190.
- Crockett, W.H. (1965). Cognitive complexity and impression formation. In B.A. Maher (Ed.), *Progress in experimental personality research* (pp. 47-90). New York: Academic.
- Cupach, W.R., & Spitzberg, B.H. (Eds.) (1994). *The dark side of interpersonal communication*. Hillsdale, NJ: Lawrence Erlbaum.
- Curşeu, P.L., Janssen, S.E.A., Raab, J. (2012). Connecting the dots: social network structure, conflict, and group cognitive complexity. *Higher Education*, 63, 621-629.
- Curşeu, P.L., & Pluut, H. (2013). Student groups as learning entities: the effect of group diversity and teamwork quality on groups' cognitive complexity. *Studies in Higher Education*, 38, 87-103.

- Delia, J.G., Clark, R.A., & Switzer, D.E. (1974). Cognitive complexity and impression formation in informal social interaction. *Speech Monographs*, 41, 299-308.
- Delia, J.G., O'Keefe, B.J., & O'Keefe, D.J. (1982). The constructivist approach to communication. In F.E.X. Dance (Ed.), *Human communication theory: Comparative essays* (147-191). New York: Harper & Row.
- Dobosh, M. (2005). The impact of cognitive complexity and self-monitoring on leadership emergence. Unpublished master's thesis, University of Delaware.
- Dodge, K.A., Lansford, J.E., Burks, V.S., Bates, J.E., Pettit, G.S., Fontaine, R., & Price, J.M. (2003). Peer rejection and social information-processing factors in the development of aggressive behavior problems in children. *Child Development*, 74, 374-393.
- Donovan-Kicken, E., McGlynn, J., & Damron, J.C.H. (2012). When friends deflect questions about sensitive information: Questioners' cognitive complexity and explanations for friends' avoidance. *Western Journal of Communication*, 76, 127-147.
- Feeley, T.H., Hwang, J., & Barnett, G.A. (2008). Predicting employee turnover from friendship networks. *Journal of Applied Communication Networks*, 36, 56-73.
- Feld, S. (1981). The focused organization of social ties. *American Journal of Sociology*, 86, 1015-1035.
- Fletcher, G.J.O., Danilovics, P., Fernandez, G., Peterson, D., & Reeder, G.D. (1986). Attributional complexity: An individual differences measure. *Journal of Personality and Social Psychology*, 51, 875-884.
- Foels, R., & Reid, L.D. (2010). Gender differences in social dominance orientation: The role of cognitive complexity. *Sex Roles*, 62, 684-692.

- Freeman, L.C., & Romney, A.K. (1986). Words, deeds, and social structure. *Human Organizations*, January.
- Frey, L.R. (2002). *New directions in group communication*. Thousand Oaks, CA: Sage.
- Frey, L.R. (2003). Group communication in context: Studying bona fide groups. In L.R. Frey (Ed.), *Group communication in context: Studies of bona fide groups* (pp. 1-20). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Galanes, G.J. (2009). Dialectical tensions of small group leadership. *Communication Studies*, 60, 409-425.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Berkeley: University of California Press.
- Goins, M.N. (2011). Playing with dialectics: Black female friendship groups as a Homeplace. *Communication Studies*, 62, 531-546.
- Greenbaum, H.H., & Query, Jr., J.L. (1999). Communication in organizational work groups: A review and analysis of natural work group studies. In L.R. Frey, D.S. Gouran, & M.S. Poole (Eds.), *The handbook of group communication theory and research* (pp. 539-564). Thousand Oaks, CA: Sage.
- Grippa, F., & Gloor, P.A. (2009). You are who remembers you. Detecting leadership through accuracy of recall. *Social Networks*, 31, 255-261.
- Hale, C.L., & Delia, J.G. (1976). Cognitive complexity and social perspective taking. *Communication Monographs*, 43, 195-203.
- Hart, Z.P., Miller, V.D., & Johnson, J.R. (2003). Socialization, resocialization, and communication relationships in the context of an organizational change. *Communication Studies*, 54, 483-495.

- Heald, M.R., Contractor, N.S., Koehly, L., & Wasserman, S. (1998). Formal and emergent predictors of coworkers' perceptual congruence on an organization's social structure. *Human Communication Research*, 24, 536-563.
- Ibarra, H. (1992). Homophily and differential returns: Sex differences in network structure and access in an advertising firm. *Administrative Science Quarterly*, 37, 422-447.
- Ingoldsby, E.M., Shaw, D.S., Winslow, E., Schonberg, M., Gilliom, M., & Criss, M.M. (2006). Neighborhood disadvantage, parent-child conflict, neighborhood peer relationships, and early antisocial behavior problem trajectories. *Journal of Abnormal Child Psychology*, 34, 303-319.
- Janis, I.L. (1982). *Groupthink: Psychological studies of policy decisions and fiascoes* (2nd ed.). Boston: Houghton Mifflin.
- Johnson, A. J. (2001). Examining the maintenance of friendships: Are there differences between geographically close and long-distance friends? *Communication Quarterly*, 49, 424-435.
- Kalmijn, M. (1998). Intermarriage and homogamy: Causes, patterns, trends. *Annual Review of Sociology*, 24, 395-421.
- Karney, B.R., & Gauer, B. (2010). Cognitive complexity and marital interaction in newlyweds. *Personal Relationships*, 17, 181-200.
- Kelly, G.A. (1955). *The psychology of personal constructs* (2 vols.). New York: W.W. Norton.
- Kenny, D.A. (1994). *Interpersonal perception: A social relations analysis*. New York: Guilford Press.
- Kenny, D.A., Bond, C.F. Jr., Mohr, C.D., & Horn, E.M. (1996). Do we know how much people like one another? *Journal of Personality and Social Psychology*, 71, 928-936.

- Keyton, J. (1991). Evaluating individual group member satisfaction as a situational variable. *Small Group Research*, 22, 200-219.
- Keyton, J. (1999). Relational communication in groups. In L.R. Frey, D.S. Gouran, & M.S. Poole (Eds.), *The handbook of group communication theory and research* (pp. 192-222). Thousand Oaks, CA: Sage.
- Keyton, J. (2000). Introduction: The relational side of groups. *Small Group Research*, 31, 387-396.
- Keyton, J. & Beck, S.J. (2009). The influential role of relational messages in group interaction. *Group Dynamics: Theory, Research, and Practice*, 13, 14-30.
- Kim, R.Y. (2004). Second-generation Korean American evangelicals: Ethnic, multiethnic, or white campus ministries? *Sociology of Religion*, 65, 19-34.
- Krackhardt, D. (1987). Cognitive social structures. *Social Networks*, 9, 109-134.
- Krackhardt, D. (1990). Assessing political landscape: Structure, cognition, and power in organizations. *Administrative Science Quarterly*, 35, 342-369.
- Krackhardt, D., & Kilduff, M. (1999). Whether close or far: Social distance effects on perceived balance in friendship networks. *Journal of Personality and Social Psychology*, 76, 770-782.
- Kram, K.E., & Isabella, L.A. (1985). Mentoring alternatives: The role of peer relationships in career development. *Academy of Management Journal*, 28, 110-132.
- Little, C., Packman, J., Smaby, M., & Maddux, C.D. (2005). The skilled counselor training model: Skills acquisition, self-assessment, and cognitive complexity. *Counselor Education & Supervision*, 44, 189-200.

- Marsar, S. (2013, April). Camaraderie in the firehouse. *Fire Rescue*.
- Mayer, B.W., & Dale, K. (2010). The impact of group cognitive complexity on group satisfaction: A person-environment fit perspective. *Journal of Behavioral & Applied Management, 12*, 24-47.
- McEwan, B., & Guerrero, L.K. (2010). Freshmen engagement through communication: Predicting friendship formation strategies and perceived availability of network resources from communication skills. *Communication Studies, 61*, 445-463.
- Monge, P.R., & Contractor, N.S. (2003). *Theories of communication networks*. New York: Oxford University Press, Inc.
- O'Keefe, B.J. (1984). The evolution of impressions in small working groups: Effects of construct differentiation. In H.E. Sypher & J.L. Applegate (Eds.), *Communication by children and adults: Social cognitive and strategic processes* (262-291). Beverly Hills, CA: Sage.
- O'Keefe, B.J., & Delia, J.G. (1982). Impression formation and message production. In M.E. Roloff & C.R. Berger (Eds.), *Social cognition and communication* (pp. 33-72). Beverly Hills, CA: Sage.
- O'Keefe, B.J., & McCornack, S.A. (1987). Message design logic and message goal structure: Effects on perceptions of message quality in regulative communication situations. *Human Communication Research, 14*, 68-92.
- O'Keefe, D.J., Shepherd, G.J., & Streeter, T. (1981). Role category questionnaire measures of construct differentiation: Reliability and comparability of alternative forms. Paper presented at the International Communication Association convention, Minneapolis, MN.

- O'Keefe, D.J., & Sypher, H.E. (1981). Cognitive complexity measures and the relationship of cognitive complexity to communication. *Human Communication Research*, 8, 72-92.
- Ottesen, G.G., Foss, L., Gronhaug, K. (2004). Exploring the accuracy of SME managers' network perceptions. *European Journal of Marketing*, 38, 593-607.
- Pavitt, C., & Curtis, E. (1998). Small group discussion (3rd ed., On-Line). Available <http://www.udel.edu/communication/COMM356/pavitt>.
- Petronio, S., Jones, S., Morr, M.C. (2003). Family privacy dilemmas: Managing communication boundaries within family groups. In L.R. Frey (Ed.), *Group communication in context: Studies of bona fide groups* (pp. 23-55). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Pittinsky, M., & Carolan, B.V. (2008). Behavioral versus cognitive classroom friendship networks: Do teacher perceptions agree with student reports? *Social Psychology of Education*, 11, 133-147.
- Poole, M. S. (1983). Decision development in small groups II: A study of multiple sequences in decision-making. *Communication Monographs*, 50, 206-232.
- Poole, M.S., & Dobosh, M.A. (2010). Group decision making. In C.R. Berger, M.E. Roloff, and D.R. Roskos-Ewoldsen (Eds.), *The handbook of communication science* (2nd ed., pp 381-397). Thousand Oaks, CA: Sage.
- Poole, M. S., & Roth, J. (1989). Decision development in small groups IV: A typology of decision paths. *Human Communication Research*, 15, 323-356.

- Putnam, L.L., & Stohl, C. (1996). Bona fide groups: An alternative perspective for communication and small group decision making. In R.Y. Hirokawa & M.S. Poole (Eds.), *Communication and group decision making* (2nd ed., pp 147-178). Thousand Oaks, CA: Sage.
- Rawlins, W.K. (1994). Being there and growing apart: Sustaining friendships during adulthood. In D.J. Canary & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 275-294). San Diego, CA: Academic Press.
- Richards, W.D. (1985). Data, models, and assumptions in network analysis. In R.D. McPhee & P.K. Tompkins (Eds.), *Organizational communication: Themes and new directions* (pp. 109-147). Newbury Park, CA: Sage.
- Ryan, J.B. (2011). Accuracy and bias in perceptions of political knowledge. *Political Behavior*, 33, 335-356.
- Samter, W., & Burleson, B.R. (1984). Cognitive and motivational influences on spontaneous comforting behavior. *Human Communication Research*, 11, 231-260.
- Samter, W., Burleson, B.R., & Basden-Murphy, L. (1989). Behavioral complexity is in the eye of the beholder: Effects of cognitive complexity and message complexity on impressions of the source of comforting messages. *Human Communication Research*, 15, 612-629.
- Scheerhorn, D., & Geist, P. (1997). Social dynamics in groups. In L.R. Frey & J.K. Barge (Eds.), *Managing group life: Communicating in decision-making groups* (pp. 81-103). Boston: Houghton Mifflin.
- Scheitle, C.P., & Adamczyk A. (2009). It takes two: The interplay of individual and group theology on social embeddedness. *Journal for the Scientific Study of Religion*, 48, 16-29.

- Schneider, D.J., Hastorf, A.H., & Ellsworth, P.C. (1979). *Person perception* (2nd ed.). Reading, MA: Addison-Wesley Publishing Company.
- Schnurr, S. (2008). Constructing leader identities through teasing at work. *Journal of Pragmatics*, 41, 1125-1138.
- Scott, C.R., & Stephens, K.K. (2009). It depends on who you're talking to...: Predictors and outcomes of situated measures of organizational identification. *Western Journal of Communication*, 73, 370-394.
- Sias, P.M. (2005). Workplace relationship quality and employee information experiences. *Communication Studies*, 56, 375-395.
- Sias, P.M. (2009). *Organizing relationships: Traditional and emerging perspectives on workplace relationships*. Thousand Oaks, CA: Sage.
- Sias, P.M., Heath, R.G., Perry, T., Silva, D., Fix, B. (2004). Narratives of workplace friendship deterioration. *Journal of Social and Personal Relationships*, 21, 321-340.
- Sias, P.M., Bartoo, H. (2007). Friendship, social support and health. In L. L'Abate, D.D. Embrey, & M.S. Baggett (Eds.), *Low cost approaches to promote physical and mental health: Theory, research, and practice* (pp. 455-472). New York: Springer-Verlag.
- Sias, P.M., Pedersen, H., Gallagher, E.B., & Kopaneva, I. (2012). Workplace friendship in the electronically connected organization. *Human Communication Research*, 38, 253-279.
- Simpson, B., Markovsky, B., Steketee, M. (2011). Power and the perception of social networks. *Social Networks*, 33, 166-171.
- Smith, C. (2003). Religious participation and network closure among American adolescents. *Journal for the Scientific Study of Religion*, 42, 259-267.

- Socha, T.J. (1999). Communication in family units: Studying the first “group”. In L.R. Frey, D.S. Gouran, & M.S. Poole (Eds.), *The handbook of group communication theory and research* (pp. 475-492). Thousand Oaks, CA: Sage.
- Socha, T.J., & Socha, D.M. (1994). Children’s task-group communication: Did we learn it all in kindergarten? In L.R. Frey (Ed.), *Group communication in context: Studies of natural groups* (pp. 227-246). Hillsdale, NJ: Lawrence Erlbaum.
- Su, C. (2012). Who knows who knows what in the group? The effect of communication network centralities, use of digital knowledge repositories, and work remoteness on organizational members’ accuracy in expertise recognition. *Communication Research*, 39, 614-640.
- SunWolf (2008). *Peer groups: Expanding our study of small group communication*. Thousand Oaks, CA: Sage.
- SunWolf, & Leets, L. (2003). Communication paralysis during peer-group exclusion: Social dynamics that prevent children and adolescents from expressing disagreement. *Journal of Language and Social Psychology*, 22, 355-384.
- Tracy, S.J., Lutgen-Sandvik, P., & Alberts, J.K. (2006). Nightmares, demons, and slaves: Exploring the painful metaphors of workplace bullying. *Management Communication Quarterly*, 20, 148-185.
- Valenti, M.A., & Rockett, T. (2008). The effects of demographic difference on forming intragroup relationships. *Small Group Research*, 39, 179-202.
- Van Hiel, A., & Mervielde, I. (2003). The measurement of cognitive complexity and its relationship with political extremism. *Political Psychology*, 24, 781-801.

- Waggoner, A.S., Smith, E.R., & Collins, E.C. (2009). Person perception by active versus passive perceivers. *Journal of Experimental Social Psychology, 45*, 1028-1031.
- Watling Neal, J. (2008). “Kracking” the missing data problem: Applying Krackhardt’s cognitive social structures to school-based social networks. *Sociology of Education, 81*, 140-162.
- Wheless, L. R. (1978). A follow-up study of the relationships among trust, disclosure, and interpersonal solidarity. *Human Communication Research, 4*, 143–157.
- Woehr, D.J., Miller, M.J., & Lane, J.A.S. (1998). The development and evaluation of a computer-administered measure of cognitive complexity. *Personality and Individual Differences, 25*, 1037-1049.
- Woods, E. (1998). Communication abilities as predictors of verbal and nonverbal performance in persuasive interaction. *Communication Reports, 11*, 167-178.
- Xia, L., Yuan, Y.C., & Gay, G. (2009). Exploring negative group dynamics: Adversarial network, personality, and performance in project groups. *Management Communication Quarterly, 23*, 332-62.
- Xu, Y., & Burleson, B. R. (2001). Effects of sex, culture, and support type on perceptions of spousal social support: An assessment of the “support gap” hypothesis in early marriage. *Human Communication Research, 24*, 535–566.
- Yuan, Y.C., & Gay, G. (2006). Homophily of network ties and bonding and bridging social capital in computer-mediated distributed teams. *Journal of Computer-Mediated Communication, 11*, 1062-1084.
- Yuan, Y.C., Gay, G., & Hembrooke, H. (2006). Focused activities and the development of social capital in a distributed learning “community.” *The Information Society, 22*, 25-39.

- Young, J.T.N., Barnes, J.C., Meldrum, R.C., Weerman, F.M. (2011). Assessing and explaining misperceptions of peer delinquency. *Criminology*, 49, 599-630.
- Zorn, T.E. (1991). Construct system development, transformational leadership and leadership messages. *Southern Communication Journal*, 56, 178-193.

APPENDIX A

COGNITIVE SOCIAL STRUCTURE MEASURES

Friendship Networks

How would you characterize your personal relationship with each member of your organization's executive board? For each fellow board member, indicate the strength of your personal relationship using the scale where 0 indicates that you are *not friends* with the board member and 10 indicates that you are *best friends* with the board member.

How would you characterize the personal relationships among members of the executive boards? For each fellow board member, please use the scale to indicate the strength of **their** relationship with each other board member where 0 indicates that they are *not friends* and 10 indicates that they are *best friends*.

On a scale of 0 to 10, how close of a personal relationship do you/ does _____ have with each other board member?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

I am not friends with her/him.-----I am friend with her/him.-----I am best friends with her/him.
She/he is not friends with her/him.-----She/he is friends with him.-----She/he are best friends with her/him.

	1-President	2-Social	3-Recruitment	4-Finance	5-Internal Operations	6-Capital Maintenance	7-Alumni Relations-	8-Public Relations	9-Comissar	10-Recruitment	11-Member Education	12-New Member Education
1-President												
2-Social												
3-Recruitment												
4-Finance												
5-Internal Operations												
6-Capital Maintenance												
7-Alumni Relations												
8-Public Relations												
9-Comissar												
10-Recruitment												
11-Member Education												
12-New Member Education												

If you had never joined your organization, do you think you would still be friends with each fellow executive board member?

0-Not applicable 1-Very unlikely 2-Unlikely 3-Unsure 4-Likely 5-Very Likely

1-President	0	1	2	3	4	5
2-Social	0	1	2	3	4	5
3-Recruitment	0	1	2	3	4	5
4-Finance	0	1	2	3	4	5
5-Internal Operations	0	1	2	3	4	5
6-Capital Maintenance	0	1	2	3	4	5
7-Alumni Relations	0	1	2	3	4	5
8-Public Relations	0	1	2	3	4	5
9-Comissar	0	1	2	3	4	5
10-Recruitment	0	1	2	3	4	5
11-Member Education	0	1	2	3	4	5
12-New Member Education	0	1	2	3	4	5

Task Networks

How often do you work with fellow board members on organization-related tasks? For each fellow board member, please indicate how often you go to them in order to work on organization-related tasks. Use the scale where 0 indicates that you never go to them in order to work on organization-related tasks and 5 indicates that you always go to them in order to work on organization-related tasks.

0-I **never** go to them to work on organization-related tasks.

1-I **occasionally** go to them to work on organization-related tasks.

2-I **sometimes** go to them to work on organization-related tasks.

3-I **often** go to them to work on organization-related tasks.

4-I **usually** go to them to work on organization-related tasks.

5-I **always** go to them to work on organization-related tasks.

		What kinds of tasks do you work on?
1-President	0 1 2 3 4 5	
2-Social	0 1 2 3 4 5	
3-Recruitment	0 1 2 3 4 5	
4-Finance	0 1 2 3 4 5	
5-Internal Operations	0 1 2 3 4 5	
6-Capital Maintenance	0 1 2 3 4 5	
7-Alumni Relations	0 1 2 3 4 5	
8-Public Relations	0 1 2 3 4 5	
9-Comissar	0 1 2 3 4 5	
10-Recruitment	0 1 2 3 4 5	
11-Member Education	0 1 2 3 4 5	
12-New Member Education	0 1 2 3 4 5	

How often do fellow board members work with one another on organization-related tasks? For each fellow board member, please indicate how often she/he goes to a fellow board member in order to work on organization-related tasks. Use the scale where 0 indicates that she/he never goes to the other board member in order to work on organization-related tasks and 5 indicates that she/he always goes to the other board member in order to work on organization-related tasks.

0-She/he **never** goes to her/him to work on organization-related tasks.

1-She/he **occasionally** goes to her/him to work on organization-related tasks.

2-She/he **sometimes** goes to her/him to work on organization-related tasks.

3-She/he **often** goes to her/him to work on organization-related tasks.

4-She/he **usually** goes to her/him to work on organization-related tasks.

5-She/he **always** goes to her/him to work on organization-related tasks.

	1-President	2-Social	3-Recruitment	4-Finance	5-Internal Operations	6-Capital Maintenance	7-Alumni Relations-	8-Public Relations	9-Comissar	10-Recruitment	11-Member Education	12-New Member
1-President												
2-Social												
3-Recruitment												
4-Finance												
5-Internal Operations												
6-Capital Maintenance												
7-Alumni Relations												
8-Public Relations												
9-Comissar												
10-Recruitment												
11-Member Education												
12-New Member Education												

APPENDIX B

COGNITIVE COMPLEXITY MEASURES

Liked Peer:

Please describe a peer whom you like. Please take 3 to 5 minutes to write your detailed impression of this person. Describe this person as fully as possible and pay particular attention to this person's habits, beliefs, ways of treating others, mannerisms, and similar attributes. Please write their initials or a pseudonym in the blank. _____

Disliked Peer:

Please describe a peer whom you dislike. Please take 3 to 5 minutes to write your detailed impression of this person. Describe this person as fully as possible and pay particular attention to this person's habits, beliefs, ways of treating others, mannerisms, and similar attributes. Please write their initials or a pseudonym in the blank. _____

Ideal Leader:

Please describe an "ideal" executive board member. Please take about 3 minutes to write your detailed impression of this "ideal" person. Describe this person as fully as possible and pay particular attention to this person's habits, beliefs, ways of treating others, mannerisms, and similar attributes.

APPENDIX C

ADDITIONAL MEASURES

Demographic Variables:

When did you join your fraternity/sorority? Fall _____ Spring _____
What is the title of the sorority/fraternity position you currently hold? _____
How many semesters, including this semester, have you held this position? 1 2 3 4
Do you currently live in your fraternity/sorority house? 1-Yes 2-No
Have you held any prior sorority/fraternity positions? 1-Yes 2-No
If yes, which ones and for how long? _____
What is your age? _____
What year are you? 1-Freshman 2-Sophomore 3-Junior 4-Senior 5-Other
What is your sex? 1-Male 2-Female
What is your major? _____

Group Relational Satisfaction:

Please think about the executive board. For each of the following items, please indicate how strongly you agree or disagree using the following scale:

1-Strongly Disagree 2-Disagree 3-Neutral 4-Agree 5-Strongly Agree.

The group members spend time getting to know each other. _____
The members make me feel a part of the group. _____
I look forward to coming to group meetings. _____
I do not feel part of the group. _____
The members make me feel liked. _____
My absence would not matter to the group. _____
I can trust group members. _____
We can say anything in this group without worrying. _____
I prefer not to spend time with members of the group. _____
The members make me feel involved in the group. _____
Some of the group members are my friends. _____
The group atmosphere is comfortable. _____

Organizational Identity:

Please think about your fraternity/sorority. For each of the following items, please indicate how strongly you agree or disagree using the following scale:

1-Strongly Disagree 2-Disagree 3-Neutral 4-Agree 5-Strongly Agree.

I feel I have a lot in common with others in this organization. _____
I find it easy to identify with this organization. _____
I find that my values and the values of those in this organization are very similar. _____
I view my organization's problems as my problems. _____

Group Outcomes:

On a scale of 1 to 10 where 1 is completely ineffective and 10 is completely effective, how effective do you think your organization executive board has been at achieving organizational goals? _____

What have been some organizational successes and/or achievements?

What have been some organizational challenges?

Have there been any challenges balancing friendship and working relationships while serving on the executive board? If so, please describe them.

Motivation:

You probably choose to serve on your organization's executive board for a variety of reasons. Below are some reasons that may motivate you as an executive board member. Please indicate how important each motive is as you serve(d) on your executive board. You may also write in any other motivators not listed. Use the following scale:
1-Not important at all 2-Slightly important 3-Somewhat important 4-Important 5-Very important

Philanthropy: I am concerned about the organization's philanthropic endeavors.

Leadership: I want to have a leadership role where I can have an impact on my organization.

Friendship: I want to spend time with my friends.

Advancement: I want to gain experience that will help me in the future.

Networking: I want to meet and develop relationships with people both within and outside my organization.

Change: I want to change the direction that my organization is headed in.

Service: I have skills/qualities/talents that allow me to do my position in a way that benefits my organization.