

Goal Pursuit and the Pursuit of Social Networks

by

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Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor of Philosophy  
in Business Administration  
in the Graduate School  
of Duke University

2013

ABSTRACT

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## **Abstract**

An abstract of a dissertation that examines the motivational foundations of social networks. Five studies using diverse methods examine goal pursuit as an antecedent to social network structure, finding that self-oriented and affiliation-oriented goal pursuit evoke unique patterns of interpersonal perception and motivation which lead to the development of sparser and denser social networks, respectively. Study 1 serves as an empirical summary of my theorizing: individuals primed with dense networks feel more efficacious pursuing affiliation-oriented goals versus self-oriented goals, and individuals primed with sparse networks feel more efficacious pursuing self-oriented goals than individuals primed with dense networks. Study 2 finds a correlation between personal goals and network structure. Studies 3 and 4 experimentally demonstrate that reminders of self versus affiliation-oriented goals lead to different cognitively-activated network structures. Study 5 finds that individuals entering a new social network with strong career goals (self-oriented goals) develop significantly sparser local networks and attain more central network positions; the opposite pattern emerges for individuals pursuing strong social goals (affiliation-oriented goals). Individuals strongly motivated to pursue both goals lose the network structure benefits of having a strong career goal. Findings support the hypothesis linking personal goal pursuit to network structure, a novel approach to integrating psychology and networks research.

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# 1. Theoretical Chapter

Individuals in the workplace have goals that they strive to achieve. For instance, Lisa may want to obtain a promotion or switch organizations, while Jane may want to develop her leadership skills. In order to achieve these various goals—a promotion or improved leadership skills—a commonly prescribed strategy is to engage in social networking behavior. Social networking, defined as “behaviors that are aimed at building, maintaining, and using informal relationships that possess the (potential) benefit of facilitating work-related activities of individuals by voluntarily granting access to resources and maximizing common advantages (Wolff & Moser, 2009: 167-168),” has been shown to lead to better workplace outcomes (Wolff & Moser, 2009; Michael & Yukl, 1993; Orpen, 1996; Forret & Dougherty, 2004). Indeed, social networking is a commonly stated reason for pursuing an MBA degree (Stephens, 2013) and is the premise of a vast number of professional events designed to meet new people and broaden networks of contacts (Tripathi, 2012). However, given the prevalence of social networking in the common language of business, it is surprising that relatively little theoretical and empirical research has examined how individuals go about forming their social networks at a structural level, as well as how conscious and unconscious processes affect the process. Although tentative research has identified important individual differences antecedents to network structure (i.e., self-monitoring: Mehra, Kilduff and Brass 2001; Oh & Kilduff 2008; Sasovova, Mehra, Borgatti & Schippers 2010; neuroticism: Klein, Lim, Saltz & Mayer 2004; social status, Smith, Menon, & Thompson, 2012), there lacks a unifying theoretical model of how individuals build social networks both explicitly and implicitly in response to goal pursuit. In this dissertation, I examine how goals lead to different implicit social networking behaviors.

The concept of social networking touches on a fundamental tension between two prominent organizational behavior literatures and levels of analysis: goals (Locke & Latham 1990, 2002) at the individual level, and social networks (Burt, 1992, 1996, 2000, 2010; Granovetter, 1973) at the structural level. Implicit in the definition of social networking is the notion of goal pursuit and eventual goal achievement. That is, individuals network to achieve goals. Yet from a research perspective, we naturally look to other mechanisms for goal achievement. For instance, take the goals of Lisa—to obtain a promotion—and that of Jane—to develop her leadership skills—and think, from an empirical point of view, how they could go about achieving these goals. When looking at the micro-level of organizational behavior, we could suggest that they set a difficult and specific goal (Locke & Latham 1990, 2002), engage in self-regulation behaviors (i.e., overriding their current temptations to stick to long-term goals, Carver & Scheier, 1981; Muraven & Baumeister, 2000), or hope that they have various personality skills or traits (Judge, Bono, Ilies & Gerhardt, 2002). Thus the individual's traits and cognitive processes cause the goal. However, to achieve these same goals, the social network literature provides a different, structural route. That is, it has nothing to do with the characteristics of the individual, but rather the structure of their social network (Burt, 1984; Wellman, 1988). Individuals with a less constrained local network structures—where individuals with whom you are connected are not connected with each other—are more likely to be the recipient of promotions (Burt, 1992, 1996, 2000, 2010; Granovetter, 1973). Interestingly, these micro-level and macro-routes to goal achievement papers are among some of the most widely cited studies in the social sciences<sup>1</sup>, but do not usually cite each other, begging the question of how individual-

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<sup>1</sup> Citations as of March 14, 2013: Burt (1992): 933, Burt (1995): 12,199, Burt (2005): 1356, Carver and Scheier (1981): 2362, : Granovetter(1973): 23,207, Locke and Latham (1990): 5671, Locke and Latham (2002): 2099, Muraven and Baumeister (2000): 1398

level forces combine with structural elements of the environment to achieve goals. My primary hypothesis is that while engaging in individual-level processes to pursue goals, individuals also construct conducive social structures to nudge them towards goal achievement.

Goals are cognitive representations of desired end-states (Austin & Vancouver 1996), such as “to be promoted to manager this year” or “to earn the respect of my work team”. Goals vary both across and within individuals and across time. For example, goals can be pursued on a short-term (e.g., work hard today to finish a project) and long-term (e.g., work hard over the next year to achieve a promotion) basis and can change over time (e.g., this year my goal is to get a new job whereas next year my goal is to start a family). When pursued, goals shape diverse affective, cognitive, and behavioral phenomena. There are various stages of goals (Heckhausen & Gollwitzer, 1987; Lewin, Dembo, Festinger & Sears, 1944), with much empirical organizational research examining goal setting (Locke & Latham, 1990, 2002), where an individual adopts a specific goal, followed by goal pursuit or striving (Gollwitzer, 1990), where individuals engage in various behaviors to achieve the goal. In the current dissertation, I extend theorizing about the effects of goals to the understanding of social networks, exploring the possibility that goal pursuits also influence the formation of specific network structures. Social networks explicate the structure of social relationships within a group or a broader population of individuals (Wellman & Berkowitz, 1988). The configuration of ties surrounding an actor has been shown to both provide and constrain opportunities for achievement (see Burt, 1992 for a review). I propose that goal pursuit leads to the very social network structures that facilitate achievement.

How do personal goals affect social network structure? I propose that goals shape social network structure via two interrelated mechanisms: (1) the cognitive activation (Smith et al., 2012) of goal-facilitating social networks, and (2) the mobilization of goal-facilitating

relationships during actual interactions. Thus, goals influence social network cognition, dyadic interactions, and ultimately social network structure.

This theoretical model views social networks as the outcome of various motivational and goal pursuit processes. This goal pursuit perspective is theoretically distinct from perspectives of general achievement (see Burt, in press) as in this model, goal *content* varies; that is, achievement for one individual is a promotion but for another individual it is developing a strong relationship with her boss (Hart & Alabarracin 2009). Similarly, achievement for one individual at one time may be feeling closer to family, but at another time, it may be getting his inbox to zero. I propose that different types of goals lead to more or less interpersonal discrimination. Specifically, affiliation-oriented goals lead individuals to maintain densely connected cliques and in-groups (low discrimination), whereas self-oriented goals lead individuals to create sparse networks, connectioning multiple groups and diverse parts of a network (high discrimination).

### **1.1 Psychological Foundations of Social Networks**

Recent research has identified psychological factors that are associated with networks (Casciaro & Lobo, 2008; Flynn, Reagans & Guillory, 2010; Flynn & Wiltermuth, 2010; Umphress, Labianca, Brass, Kass & Scholten, 2003) and that shape network structure (Klein, Lim, Saltz & Mayer, 2004; Mehra, Kilduff & Brass, 2001; Oh & Kilduff, 2008; Sasovova, Mehra, Borgatti & Schippers, 2010; Smith et al., 2012). However, relatively little is known about how individual motivation leads people to build their social networks and to attain specific network positions. This dearth of knowledge has prompted numerous calls for investigations into network antecedents (Ibarra, Kilduff & Tsai, 2005; Kilduff, Tsai & Hanke, 2006; Kilduff & Brass, 2010; Klein, Lim, Saltz & Mayer, 2004; Mehra, Kilduff & Brass, 2001; Mason, Conrey & Smith, 2007; Monge & Contractor, 2003; Morgan & Schwalbe, 1990; Oh & Kilduff, 2008;

Sasovova, Mehra, Borgatti & Schippers, 2010; Smith et al., 2012). The relative neglect of antecedents of social network structure stands in striking contrast to the vast literature on how network structure influences outcomes (see Burt, 1992 for review).

Building on the recent insight that social networks are not purely static but can also be usefully conceptualized as dynamic cognitive structures (Janicik & Larrick 2005; Krackhardt 1987; Michaelson & Contractor 1992; Smith et al. 2012), researchers have begun to distinguish among an individual's (1) potential network, (2) activated network, and (3) mobilized network (see Smith et al., 2012). The potential network is comprised of an individual's population of contacts, measured as the maximum number of people an individual knows at least by name (Hill and Dunbar, 2003). An activated network is the network recalled from memory in a given moment; that is, when asked to generate one's social network, people tend to focus on, or *activate*, a relatively small portion of the potential network (Smith et al., 2012). These activated networks are cognitive representations of the network (Janicik & Larrick, 2005; Krackhardt, 1987) and as such, are more fluid than the full potential network from which they draw. Finally, the mobilized network is a cognitive representation constructed at a given moment to solicit resources in pursuit of specific needs, and is thus a subset of potential and activated networks. Activated networks are the dominantly studied network form in the literature (Burt, 1992, 1996, 2000, 2010; Granovetter, 1973), although they are often described as relatively static, fixed, and mobilized (Wellman, 1988).

Perhaps partly because of the field's focus on static networks, researchers have emphasized the causal effects of network structure or position on individual outcomes, and have tended to under-emphasize any causal effects of the individual on networks (Burt, 1984; Monge & Contractor, 2003; Wellman, 1988). Indeed, early research highlighted the primacy of network position in determining outcomes, giving very little weight to the idea that individuals may also

shape their own positions in a network. For example, Burt (1992) dismissed the entrepreneurial “personality,” asserting that entrepreneurs are nothing more than their structural position within the network. More recent work has concluded that individual variance is partly responsible for the opportunities presented by and capitalized on via network structures (Burt, 2010). For example, high self-monitors—individuals who present themselves differently in different situations to fit in with others (Gangestad & Snyder, 2000; Snyder, 1974)—tend to have contacts in multiple unconnected groups. As a result, they form networks rich with structural holes—the sparse regions that lie between dense regions of networks—and serve as boundary spanners between previously unconnected individuals (Mehra, Kilduff & Brass 2001; Oh & Kilduff 2008; Sasovova, et al. 2010).

The majority of research on how individuals shape their social networks has studied self-monitoring; however, several recent papers have examined additional individual difference variables, including neuroticism, need for cognition, and network personality (Anderson, 2008; Burt in press; Klein et al., 2004; Smith et al., 2012). For example, individuals who score high on the trait *need for cognition*—an individual difference variable reflecting individuals’ enjoyment of thinking (Cacioppo & Petty, 1982)—are more likely to capitalize on network opportunities when in a favorable network position, although not likely to create those network opportunities per se (Anderson, 2008). Individuals high in need for cognition engage in increased information gathering; this information gathering provides a unique advantage only when in a favorable network position (i.e., need for cognition does not lead to the creation of structural holes, but rather it does predict reaping the benefits of such a position). Klein and colleagues (2004) found a relationship between neuroticism and network centrality, with those low in neuroticism attaining highly central network positions. Finally, Burt (in press) has reported evidence for what he calls *network personality*; that is, a consistency in how people tend to form different networks in their



lives, showing preferences for open or closed networks across real and virtual networks. Self-monitoring, need for cognition, neuroticism, and network personality are all relatively stable individual differences; thus, although the study of stable individual differences such as these is very useful for predicting *between* person variance across networks, this approach limits theorizing about *within* person differences, or how individuals' networks may shift and change over time.

In this dissertation, I explore a novel individual-level predictor of network structure—individual goal pursuit—that addresses both between-person and within-person network effects. I propose that goals function in two ways to influence social network structure. First, goals cognitively *activate* different portions of social networks that contain goal-enabling resources. Second, these *activated* networks are *mobilized* via approach to goal-enabling individuals, shaping social network structure over time. Next, I review the literature on goals and hypothesize how goals can lead to this structural effect.

## **1.2 Individual, Social, and Structural Influence on Goals**

Psychologists tend to describe achieving goals—earning a promotion or a new job—solely as an individual pursuit. That is, an individual earned a promotion due to his conscientiousness, willpower, or ability to delay gratification (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Mischel, Shoda, & Rodriguez 1989). Sociologists tend to describe achieving these same types of goals as a function of structural position. That is, an individual earned a promotion due to his position as a structural hole in a network, or due to his strong ties with powerful colleagues from disparate parts of his network (Burt, 1992; Granovetter, 1973). In this view, achievement may not even be pursued or intended—it is a byproduct of opportunity created by structure. Both of these research traditions have great value, and have contributed important

knowledge about individual achievement. However, they have proceeded independently, with neither body of research informing the other. The current research responds to calls to integrate these perspectives (e.g., Granovetter, 1992; Monge & Contractor, 2003) with the aim of exploring the dynamic interplay between individual actions and social structures.

Traditional accounts of goal achievement in psychology view the actor in isolation from the social world (Carver & Scheier, 1981; Muraven & Baumeister, 2000). Goals are pursued via self-regulation strategies, and self-regulation, by definition, is a *self* process, pursued by independent agents. Research has found evidence for the importance of internal characteristics such as willpower, delay of gratification, self-efficacy, and self-regulatory theories, in predicting individual goal achievement (Bandura, 1977; Baumeister et al., 1998; Mischel et al., 1989). Recent research, however, has also shed light on interpersonal influences on goal achievement, providing support for the idea that self-regulation is also shaped by interpersonal processes (Fitzsimons & Finkel, 2010; Fitzsimons & Finkel, 2011; Gruenfeld et al., 2008; Righetti & Finkenauer, 2011; Shea et al., in press; vanDellen & Baker, 2011). For example, individuals tend to more positively evaluate others who facilitate their goal pursuit (Fitzsimons & Fishbach, 2010; Fitzsimons & Shah, 2008; Gruenfeld et al. 2008); approaching these others helps individuals build more goal-supportive social environments (Fitzsimons & Shah, 2008).

Although no research has examined the effects of goals on social network measures *per se*, one study provided initial evidence for the idea that goal pursuits affect activated networks (Fitzsimons & Shah, 2008). After completing a control task or a task designed to activate academic achievement goals, participants generated a list of friends. Participants reminded of academic achievement listed achievement facilitating friends (e.g., study partners, classmates) higher in the list than non-facilitating friends, and higher in the list than did control participants. When academic achievement goals are activated, then, individuals more readily bring to mind

others who can help them succeed at academics. In other words, goals may lead individuals to cognitively activate network members who are instrumental to their goals and then mobilize these relationships through actual interactions.

Importantly, these preliminary findings are mute on how to predict the emergence of different network structures. In this dissertation, I theorize that different goals will have different effects on social networks. The goals literature has primarily studied self-oriented goals (i.e., academic, fitness, career) but has also noted that humans as social animals possess a fundamental need to belong or to achieve affiliation goals (Baumeister & Leary, 1999; Maslow, 1968). Building on this foundation, I distinguish between self-oriented goals, in which an individual has a set objective to alter something about his/her own individual outcomes, and affiliation-oriented goals, in which an individual has a set objective to connect socially. This is of course only one goal typology; as a first step to understanding how goal content might shape networks, it simply sought to capture a straightforward distinction often noted in the psychological literature. I propose that individuals evaluate others in line with their utility for that goal type (self vs. affiliation oriented). Individuals cognitively activate network ties that enable their goals, or if need be, increase their potential network to find individuals who enable goals, and then mobilize these goal-enabling ties, shaping social network structure. Both types of goals use interpersonal means and social networks to aid in achievement; they just do it in distinct ways.

### **1.2.1 Self-Oriented Goals**

In self-oriented goals, such as those for career advancement or weight loss, the individual's own outcome is the target of the goal: The individual wants to lose weight or get promoted. Although there are likely important distinctions among the huge range of goals that are targeted at the self—fitness goals vs. career goals, for example—I posit that when pursuing self-oriented goals, similar psychological effects on social networks emerge. Namely, I suggest that

self-oriented goals lead individuals to seek the resources and support needed to achieve their goals from the social environment. Past research has suggested that individuals temporarily or chronically pursuing a self-oriented goal (like academic achievement, career, and fitness goals) feel more positively about others who can facilitate that goal, and also show greater motivation to approach those others (Fitzsimons & Finkel, 2010; Fitzsimons & Fishbach, 2010; Fitzsimons & Shah, 2008; Gruenfeld et al., 2008). In other words, self-oriented goals like achievement, career, and fitness goals lead individuals to more positively evaluate facilitating others, and also to show greater motivation to approach those others. If pursuing self-oriented goals causes individuals to seek out others who facilitate achievement (Fitzsimons & Fishbach, 2010; Fitzsimons & Shah, 2008), I suggest that they will thus lead individuals to connect with multiple groups in a network in an effort to attain this help. By this rationale, the search processes for facilitative others evoked by self-oriented goals has a by-product of leading individuals pursuing these goals to be network re-shapers and brokers of structural holes (Burt, 1992; Sasovova et al., 2010).

This theorizing is complemented by evidence from networks research, which has shown that sparse networks lead to positive self-oriented outcomes, such as obtaining promotions (Burt, 1995) and assuming a powerful position (Mehra et al., 2001). Sparse networks offer more flexibility to follow market demands (Uzzi, 1997) and lead to more organizational knowledge (Morrison, 2002). Centrality, akin to occupying a structural hole in a sparse network, but measured at the network level, increases the chances an individual will get promoted (Mehra et al., 2001), have higher power (Burkhardt & Brass, 1990), more positive job perceptions (Ibarra & Andrews, 1993), and higher creativity (Perry-Smith & Shalley, 2003). Thus, these social network positions and structures promote the achievement of self-oriented goals. Integrating the psychological and network theorizing and evidence, I offer the following hypotheses:

Hypothesis 1a: Individuals with a self-oriented goal cognitively activate connections to multiple groups within a network

Hypothesis 1b: Individuals with a self-oriented goal mobilize networks that have connections to multiple groups within a network

### **1.2.2 Affiliation-Oriented Goals**

If self-oriented goals lead to network broadening, I suggest that affiliation-oriented goals, such as those oriented towards friendship or team work, lead to network closure with individuals seeking-out close cliques of inter-connected individuals. Rather than promoting the approach of individual network ties helpful to a specific goal, affiliation-oriented goals lead individuals to seek out others to be social with, regardless of those others' instrumentality or skills. I base this hypothesis on several streams of suggestive prior research. First, affiliation goals tend to positively bias person-evaluations, making individuals feel more positively toward others (Clark & Wegener, 2008; Goodwin, Fiske, Rosen & Rosenthal, 2002; Rim, Min, Uleman, Chartrand & Carlston, 2011). Second, research suggests that instrumentality (beyond reciprocated affiliation) is not important when affiliation goals are being pursued. For instance, when participants had a romantic goal primed, they rated competent and incompetent individuals as having the same levels of competence (Goodwin et al., 2002). Finally, affiliation goals also cause individuals to seek to endear themselves to others, especially in-group members (Lakin, Chartrand & Arkin, 2008), express a preference for working with and being with others (Klein & Schnackenberg, 2000; Wong & Csikszentmihalyi, 2000), have a greater number of personal interactions (McClelland, 1985), engage in a wider range of social behaviors such as phone calls and letter writing (Boyatzis, 1973; Lansing & Heyns, 1959), interpret ambiguous behavior as affiliative (Solar & Mehrabian, 1973), and perform better when with others than when alone (Klein &

Pridemore, 1992). Perhaps unsurprisingly, given these findings, people tend to prefer coworkers who score high in affiliation (Tett & Murphy, 2002). Overall, individuals scoring high on affiliation motivation have greater sensitivity and reactance to social information and cues, as well as a strong desire to connect with others (Hill, 2009). Based on this literature, I predict that individuals with an affiliation goal will activate and mobilize networks marked by higher density and redundancy of ties, and will be less likely to occupy holes in networks.

Being situated in a large, dense network increases the probability of meeting an affiliation goal for a number of reasons. Unlike self-oriented goals, for which instrumental others need to engage in specific goal-enabling behaviors (e.g., teaching a new skill, providing unique information), affiliation-oriented goals are met simply by the presence of an accepting other. Indeed, individuals with an affiliation goal have a strong positivity bias when evaluating others, seeing a good affiliation opportunity regardless of the person's characteristics (Clark & Wegener, 2008; Goodwin et al., 2002; Rim et al., 2011). Although it's difficult to "create" a high density network, individuals can insert themselves in these types of networks by seeking social connection, and can work to connect those around them. They may also see no need to connect with others outside of their current, immediate social group, which would further reinforce the current clique. In addition, affiliation goals may cause individuals to prefer to socialize with multiple others, and dense groups may facilitate that aim. Finally, affiliation goals may lead individuals to prefer sociable, accepting others; these others may be more easily found in dense networks.

Again, this theorizing is complemented by evidence from networks research: Dense cliques and embedded social networks increase cooperation (Walter et al., 1998), trust (Gelfand et al., 2011; Uzzi, 1997), and social support (Durkeim, 1897/1958). Network closure (Coleman, 1988) capitalizes on these benefits, allowing high trust, informal behavioral control, and fine-

gain information sharing (Hansen, 1999; Uzzi, 1997). Thus, these findings suggest that dense networks are better for the pursuit of affiliation-oriented goals. Integrating psychological and network perspectives, I offer the following hypotheses:

Hypothesis 2a: Individuals with an affiliation-oriented goal cognitively activate dense networks

Hypothesis 2b: Individuals with an affiliation-oriented goal mobilize dense and static networks

## 2. Empirical Studies

Five studies test these novel hypotheses linking the psychological literature on goal pursuit to the social networks literature. The primary suggestion is that network structure can be predicted by the pursuit of self-oriented versus affiliation-oriented goals. Specifically, I hypothesize that self-oriented goals lead to sparser networks and affiliation-oriented goals lead to denser networks. The studies employ multiple methods, integrating standard social cognitive techniques from the psychological literature with measures from the social networks literature. Study 1, a quantitative review of the networks literature, seeks to establish whether generating different network structures influence perceived efficacy at pursuing self- versus affiliation-oriented goals. Study 2, a survey, seeks to examine whether personal goals and network density are correlated. That is, do cognitively activated networks correlate with goal type (Hypotheses 1a and 2a)? Studies 3 and 4, both experiments, temporarily manipulate goals and examine the cognitive activation of social networks (Hypotheses 1a and 2a), examining causality from goals to activated network structure, in two different samples and with two different goals. Study 5, a longitudinal field study of newly forming networks, examines mobilized networks, examining the relationship between goals (measured 2 months prior to network formation) and network position one month after entering a new social environment (testing Hypotheses 1b and 2b).

### ***2.1 Study 1: Implicit Theories of Networks***

This study examines the assumption underlying the hypotheses—namely, that individuals understand and recognize the efficacy of different network structures for their goals. To test this assumption, I reverse the causal direction of interest, exposing participants to networks with



different structures and examining how efficacious individuals feel about the pursuit of different goal types.

## **2.1.1 Method**

### **2.1.1.1 Participants**

Seventy-nine participants (26 females, 1 unreported;  $M_{age} = 29.33$ ;  $SD_{age} = 9.88$ ) from the United States were recruited from Mechanical Turk (Buhrmester, Kwang, & Gosling, 2011) in exchange for payment. All participants were employed full-time in organizations with ten or more employees. All participants passed attention filters (“*I will choose “Agree” to demonstrate that I am paying attention*”).

### **2.1.1.2 Materials and Procedures**

Networks were primed via a modified ego-network generator (Menon, Smith & Shea, 2013). Participants were first asked to “Please name one person who you consider to be very important in your life and write their initials here,” as per the standard ego-network generator (Burt, 1998). In the control condition, participants generated 5 network contacts using this prompt. In the sparse network condition participants were instructed to “Name a second person who is also important in your life AND doesn’t know person #1, and write their initials here;” “Now name a third person who is also important in your life AND does not know person #1 and #2.” Participants were asked to do this five times, leading to the generation of a 5-person network with a star formation. In the dense condition, after doing the initial prompt, individuals were asked to then “Name a second person who is also important in your life and knows person #1”; and “Now name a third person who is also important in your life and knows person #1 and

#2”, etc. Participants were asked to do this five times, leading to the generation of a fully connected 5-person network

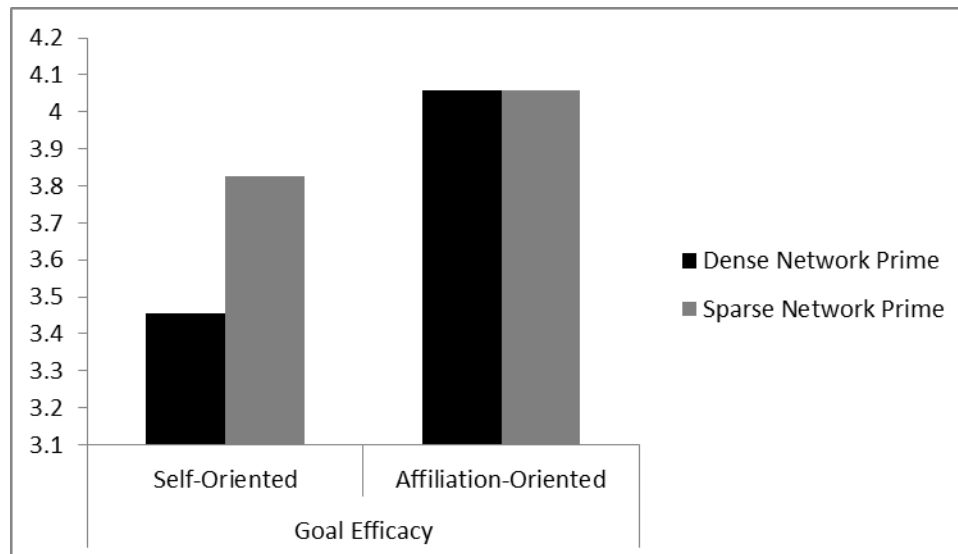
Participants were then asked to rate whether or not they could achieve various goal outcomes, categorized as self-oriented versus affiliation-oriented; I constructed these items based on the free-response items and coding results gathered in Study 2. All participants completed all goal items in randomized order. Participants were asked about whether they could achieve 4 self-oriented goals (“I could get a promotion,” “I could get a new job,” “I could be the boss in my company,” “I could run my own successful company”;  $\alpha = .76$ ). They also answered whether they could achieve 4 affiliation goals (“I could develop a better relationship with my coworkers,” “I could go to a restaurant with a group of people,” “I could get comfort when I’m upset,” “I could get social support from others”;  $\alpha = .73$ ). All items were measured on a 5-point Likert scale (1=*Strongly Disagree*, 5=*Strongly Agree*).

### **2.1.2 Results and Discussion**

First, two composite measures were computed, one of efficacy for the self-oriented goals ( $\alpha = .76$ ) and one of efficacy for the affiliation-oriented goals ( $\alpha = .73$ ). A repeated measures ANOVA was performed on efficacy perceptions with network prime (dense, sparse) as a between subjects factor, and goal type (self-oriented vs. affiliation-oriented) as a within subjects factor. As predicted, a significant interaction emerged between network primes and goal type,  $F(1,77) = 4.03, p = .048$ . Paired samples t-tests revealed that significant differences emerged for efficacy in self-oriented versus affiliation-oriented goals in the dense prime condition,  $t(38) = 3.74, p = .001$ . When primed with a dense network, individuals feel they are more efficacious at affiliation-oriented goals ( $M = 4.06$ ) than at self-oriented goals ( $M = 3.46$ ). Individuals primed with a sparse

network ( $M = 3.82$ ) feel significantly more efficacious at achieving self-oriented goals than individuals primed with dense networks ( $M = 3.46$ ),  $F(1,77) = 3.63$ ,  $p = .06$ . Individuals primed with sparse networks did not experience significantly different efficacy levels between self- and affiliation-oriented goals,  $t(39) = .67$ ,  $p = .51$ .

Most importantly, and as shown in Figure 1, I find, mostly in line with theory, that individuals primed with a sparse network perceive themselves as being more efficacious at achieving self-oriented goals compared with individuals primed with a dense network, and individual primed with a dense network perceive themselves as being significantly more efficacious at achieving affiliation-oriented goals than self-oriented goals. In sum, these findings partially support the assumption underlying the hypotheses tested in this dissertation—that individuals feel that different network structures are more or less useful for goal pursuits.



**Figure 1: Rating of goal efficacy by network prime**

## **2.2 Study 2: Survey of Goals and Ego-Networks**

Study 2 provides the first test of the hypotheses that different personal goals predict different cognitively activated social network structures, such that self-oriented goals will be more strongly linked with sparse networks than affiliation-oriented goals (Hypotheses 1a and 2a). In this study, I examine an association between self-reports of chronic personal goal pursuit and the network density of a spontaneously activated network.

### **2.2.1 Method**

#### **2.2.1.1 Participants**

Two hundred and twelve participants (133 females, 19 unreported;  $M_{age} = 40.89$ ;  $SD_{age} = 14.98$ ) from the United States were recruited from an online panel in exchange for payment. Eighteen participants did not complete the relevant measures, leaving the final sample at 194.

#### **2.1.1.2 Materials and Procedures**

Participants first completed a standard social network generator task, listing the five friends to whom they felt closest at the moment (Burt, 1998). Five-contact networks have frequently been used in previous research (see General Social Survey: Burt, 1984). Participants then completed filler personality measures<sup>1</sup> to distract from the purpose of the study. The order of the next two tasks was counterbalanced. In the density task, participants indicated whether each of their five contacts knew each other, coded as a 1 if contacts knew each other and a 0 if they did

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<sup>1</sup> Personality Scales: Self-control (Tangney et al., 2004), Need to belong (Leary, Kelly, Cottrell & Schreindorfer, 2007), Affiliation motive (Jackson, 1974), Achievement motive (Jackson, 1974), Big five personality (conscientiousness, extraversion, agreeableness, openness to experience, neuroticism) (Costa & McCrae, 1992), Satisfaction with life (Diener et al., 1985), Self-esteem (Rosenberg, 1965), Self-efficacy (Bandura, 2006). Of these scales, only one—need to belong—was correlated with our dependent variable, density,  $r(192) = .156$ ,  $p = .02$ . Our findings are unchanged if this scale is included in the regression analysis.

not; I used binary coding in this study to rule out the alternative explanation that individuals with strong affiliation goals construe all relationships as closer than those with self-oriented goals. I used this information to calculate density (Burt, 1992), defined as the number of ties within the ego-network reported to know each other, divided by the total possible interconnectedness of the network (ten in this case). In the goal setting task, participants generated the most important goal that they had set for themselves (i.e., not a goal imposed by others) and that they would pursue but not fully finish within the next 3 months. One coder, blind to hypotheses, coded the goals along two dimensions regarding the orientation of the goal: (1) from affiliation (1=*not at all*) to achievement (5=*extremely*), and (2) from interpersonal (1=*not at all*) to individual (5=*extremely*). These schemes correlated highly ( $\alpha = .83$ ) and were combined into one index. Examples of goals that received high scores (more individual/achievement) were “Make lots of money” and “Lose 20 pounds to look better”; examples of goals that received low scores (more affiliative/interpersonal) were “Take care of my aging mother” and “Spend more time with my wife.”

## **2.2.2 Results and Discussion**

Network density (Burt, 1992) was regressed upon the continuous, mean-centered (Aiken & West, 1991) measure of goal type and control variables (age, gender, and task order). I attempted to use a consistent set of controls across all studies. Age had a marginally significant positive effect on network density,  $\beta = -.12$  ( $p = .11$ ); gender (1=female, 0=male;  $\beta = -.06$ ,  $p = .40$ ) and task order ( $\beta = .07$ ,  $p = .31$ ) had no effects. As predicted, a significant negative relationship emerged between coded goal type and network density,  $\beta = -.18$  ( $p = .02$ ). Individuals with a strong self-oriented goal (+1 SD above the mean) reported a network density of .60, whereas individuals with a strong affiliation-oriented goal (-1 SD below the mean)

reported a network density of .68. Results of this analysis support the hypotheses. Networks—importantly, generated prior to any mention of goals and thus not susceptible to the interpretation that networks were influenced by the goal setting task—were significantly related to stated personal goals: The more the goal was coded as individual/achievement-oriented, the less density was reported in their activated network. Although this is the first direct test of a link between personal goals and network density, this finding complements theorizing that low density networks help individuals achieve outcomes such as promotions and salary increases (Burt, 1992), and that dense local networks—where everyone knows everyone—help provide social support (Durkheim, 1897/1958). The survey design does not allow us to assess the causal direction of the link between goals and density. Studies 3, 4, and 5 investigate causal links between goals and network structure.

### ***2.3 Study 3: Do Goals Activate Different Network Structures in Working Parents?***

Study 2 demonstrated that personal goals are related to activated network density, but left open the question of causality. Studies 3 and 4 examined the causal effects of goals on activated network density in two samples: Study 3 looks at how the importance of career versus family goals affects the networks of a sample of working parents. Study 4 looks at how the importance of academic versus socializing goals affects the networks of a sample of college students. Both studies test the hypothesis that personal goals have a causal effect on the density of cognitively-activated networks, asking: When individuals feel motivated to pursue a chronic self-oriented goal, versus a chronic affiliation-oriented goal, do they activate sparser networks?

To answer this question, I experimentally increased feelings of motivation towards chronically valued goals (see Hart & Albarracín, 2009). Activating specific goals (e.g., career or

family goals) is known to also activate associated semantic constructs (Bargh, Gollwitzer, Lee-Chai, Barndollar & Troetschel, 2001), which would complicate the interpretation of the results. That is, priming family goals directly would lead to the activation of family networks, which are denser than career networks. Thus, rather than manipulate the content of goals—i.e., to change what goals an individual cares about—I sought instead to temporarily enhance motivation towards an enduring (chronic) goal that an individual already pursues—i.e., to increase how much the person cares about an enduring goal. Motivation to pursue chronic goals is known to vary along with factors like the situation, internal resources, and other goals (Baumeister et al., 1998; Fishbach, Zhang & Koo, 2009). For example, although it may be very important for an individual to earn a promotion, at some times he is more motivated to pursue this goal than at other times. Importantly, chronic goals are highly accessible cognitive representations (Higgins, 1996; Higgins, Shah & Friedman, 1997; Moskowitz, Gollwitzer, Wasel & Schaal, 1997). Thus, at any given time, situational cues to “try” and “strive” are most likely to be applied to individuals’ most chronically important goals. For example, if a participant cares most about career advancement, then the activated concepts of “try” and “strive” should be applied to that chronic career goal, causing him to feel temporarily more motivated to pursue that goal. I took advantage of these basic cognitive principles in designing an experimental manipulation to increase motivation towards a chronically-valued goal.

## **2.3.1 Method**

### **2.3.1.1 Participants**

Sixty-six American adults (27 males;  $M_{age} = 35.48$ ;  $SD_{age} = 10.56$ ) were recruited from Mechanical Turk (Buhrmester et al., 2011) in exchange for payment. All participants had one or

more children and were employed full-time in organizations with ten or more employees. All participants passed attention checks embedded within the survey (i.e., *I will choose “disagree” to demonstrate I am paying attention*).

### 2.3.1.2 Materials and Procedures

Participants first completed two two-item measures designed to assess the relative importance of career goals and family goals. To assess the relative chronic importance of career goals, participants were asked to indicate their agreement (1 = *Strongly Disagree*; 5 = *Strongly Agree*) with two statements assessing whether career goals take precedence over other goals: “My family often gets in the way of my career,” “Other things get in the way of my career,” both reverse coded;  $\alpha = .69$ . Similar items assessed the importance of family goals (“My career often gets in the way of my family,” “Other things get in the way of my family,” both reverse coded;  $\alpha = .82$ ).<sup>2</sup> These goal measures were counterbalanced. Participants then completed a motivation or control version of a scrambled sentence task, a standard method used in social cognition to activate mental representations (Bargh et al., 2001; Srull & Wyer, 1979). In a scrambled sentence task, participants turn a list of sets of five words into grammatically correct 4-word sentences. Embedded in fifteen of the 20 sentences are certain key words. These tasks have repeatedly been shown to induce goal states (i.e., start *perform* well the task: Perform the task well) (Bargh et al., 2001; Chartrand & Bargh, 1996; Fishbach, Dhar & Zhang, 2005; Geers et al., 2009; Labroo & Kim, 2009). The motivation related words were gain, attain, finish, flourish, score, win, thrive, achieve, fulfilled, completed, perform, succeed, execute, prosper, and accomplish. The control

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<sup>2</sup> I also assessed goal strength via a standard goal commitment scale (Hollenbeck, Klein, O’Leary and Wright 1989); however, social desirability issues made the measure not useful. Perhaps predictably, participants were unwilling to move from the maximum score regarding commitment to family ( $M = 4.42$ ,  $SD = .58$ ).



condition contained all neutral words unrelated to goals or networks. Participants then completed the same ego-network generator (Burt, 1992) as Study 2, but they were instructed to list individuals with whom they discussed important workplace issues. I limited this network to a workplace advice network so as to avoid a potential confound of individuals highly committed to either work or family activating ties solely within those network domains. Generating a workplace advice networks lessens the possibility the effects are inherent to the network-type generated (i.e., family networks are denser). Density was measured continuously (1 = *Do not know each other*, 2 = *Acquaintances*, 3 = *Connected*, 4 = *Closely Connected*) as a weighted mean of the closeness of all ties.

### **2.3.2 Results and Discussion**

Linear regression models were ran with a dummy variable representing condition (motivation vs. control), along with mean-centered goal strength (Aiken & West, 1991), the condition by goal strength interaction, and the interaction term between both goal strengths and condition. All models are listed in Table 1. Models control for demographic characteristics known to affect network structure (gender, age, socioeconomic status) and for the order of goal measures. Age emerged as a significant negative predictor of network density in all models, significantly decreasing density with age.

The highest order interaction—that between career and family goal strength and the motivation prime—did not reach significance,  $p > .20$ . However, as predicted, participants with strong career goals (+1 SD above the mean) activated significantly sparser networks in the motivation prime ( $M = 2.83$ ) than the control condition ( $M = 3.23$ ),  $\beta = -.47$  ( $p = .05$ ). Likewise, as predicted, participants with strong family goals (+1 SD above the mean) activated significantly

more dense networks in the motivation prime ( $M = 3.32$ ) than the control condition ( $M = 2.93$ ),  $\beta = .41$  ( $p = .03$ ). Thus, results supported the hypotheses: Individuals with strong career goals responded to the motivation prime by activating significantly less dense networks, whereas individuals with strong family goals responded to the motivation prime with significantly more dense networks.

**Table 1: Goal Primes and Working Parents**

*Summary of Regression Analysis for Variables Predicting Density (N = 66)*

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Gender	-.061	.185	-.043	.009	.184	.006	-.014	.184	-.010
SES	.089	.108	.102	.104	.105	.120	.118	.105	.136
Age	-.017	.008	-.285*	-.021	.008	.343**	-.022	.008	-.362
Counterbalance Code	.059	.176	.043	.063	.171	.046	.103	.173	.074
Dummy Variable	.163	.179	.118	.194	.174	.141	.156	.175	.114
Career Goal	.035	.094	.049	.202	.153	.289	.269	.161	.384
Family Goal	.126	.093	.185	-.025	.125	-.037	-.030	.124	-.044
Career x Family Goal	.027	.081	.043	-.006	.080	-.009	-.199	.170	-.319
Dummy x Career Goal				-.325	.195	-.383*	-.403	.203	-.474*
Dummy x Family Goal				.388	.182	.404*	.389	.181	.405*
Dummy x Interaction							.250	.195	.353
$R^2$	.123			.206			.229		
<i>F</i> for change in $R^2$	1.10			2.95 <sup>†</sup>			1.65		

<sup>†</sup> $p < .1$  \* $p < .05$ . \*\* $p < .01$ . All continuous variables were mean centered prior to analysis. Dummy variable was coded 1 for the achievement prime, 0 for control. Males and participants who completed the career goal commitment items first were coded 1

## **2.4 Study 4: Do Goals Activate Different Network Structures in College Students?**

Study 4 looks at how the importance of academic versus socializing goals affects the networks of a sample of college students.

### **2.4.1 Method**

#### **2.4.1.1 Participants**

Forty-four students at a private Southeastern university in the USA (15 males;  $M_{age} = 22.15$ ;  $SD_{age} = 4.39$ ) were recruited from a research pool in exchange for payment of \$7USD.

#### **2.4.1.2 Materials and Procedures**

Participants first completed two 2-item scales indicating their agreement with statements about two goals relevant to this sample: Academic achievement (“Academic goals are important to me,” “I am committed to reaching my academic goals,”  $\alpha = .70$ ), and socializing (“Making life-long social relationships is an important aspect of college,” “Social relationships are important to me,”  $\alpha = .77$ ), on a 5-point Likert scale: 1=*Strongly Disagree*, 5=*Strongly Agree*). Participants then completed the same materials as in Study 3, with the modification that the ego-network generator limited participants to listing ties in the university community and density was measured on a 5-point scale.

### **2.4.2 Results and Discussion**

Linear regression models were ran with a dummy variable representing goal prime condition, along with mean-centered goal strength (Aiken & West, 1991), and the goal prime by goal strength interaction. All models are listed in Table 2. Models control for demographic

characteristics shown to affect network structure (gender, age, socioeconomic status) as well as for the order of goal measures. None of the control variables affected network structure.

The highest order interaction (between condition and academic and social goal strength) did not reach significance,  $p > .14$ . However, as predicted, individuals with strong academic goals (+1 SD above the mean) activated sparser networks in the motivation condition ( $M = 3.35$ ) than in the control condition ( $M = 4.01$ ),  $\beta = -.41$  ( $p = .07$ ). Likewise, individuals with strong socializing goals (+1 SD above the mean) activated denser networks in the motivation condition ( $M = 3.92$ ) than in the control condition ( $M = 3.17$ ),  $\beta = .55$  ( $p = .02$ ). Results supported the hypotheses: Participants with strong academic goals responded to the motivation prime by activating significantly less dense networks, whereas those with strong social goals responded to the same prime by activating significantly denser networks.

Using two different populations and sets of goals, Studies 3 and 4 demonstrate how goals can shape cognitively-activated network structures. In response to situational cues to increase motivation—reminders to “try” and “strive”—participants highly committed to self-oriented goals activated significantly sparser social networks (compared to equally committed participants in the control condition), whereas individuals highly committed to affiliation-oriented goals activated significantly denser social networks (compared to equally committed participants in the control condition). These effects were brought out via a priming procedure designed to heighten these underlying goals; the effect of these individual goals often get washed out in day-to-day lives as other goals compete for attention and resources, explaining the lack of main effects in the control conditions. These findings are the first to experimentally demonstrate that personal goals can shape activated network structures.

**Table 2: Goal Primes and College Students**

*Summary of Regression Analysis for Variables Predicting Density (N = 44)*

Variable	Model 1		Model 2			Model 3			
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Gender	-.036	.220	-.028	-.267	.231	-.204	-.331	.232	-.254
First Language	-.324	.258	-.225	-.225	.250	-.156	-.262	.247	-.182
Age	-.029	.059	-.106	-.046	.058	-.167	-.046	.058	-.168
Student Status	.182	.388	.114	.026	.384	.016	.012	.378	.007
Dummy Variable	.183	.200	.146	.208	.192	.166	.125	.197	.100
Academic Goal	.046	.190	.040	.331	.247	.289	.348	.243	.304
Social Goal	-.052	.157	-.056	-.445	.229	-.475	-.496	.228	-.530*
Academic x Social Goal	-.302	.288	-.162	-.327	.275	-.175	-.802	.419	-.429 <sup>t</sup>
Dummy x Academic Goal				-.637	.381	-.378	-.695	.377	-.413 <sup>t</sup>
Dummy x Social Goal				.696	.318	.510*	.750	.315	.549*
Dummy x Interaction							.829	.559	.335
$R^2$	.116			.237			.283		
<i>F</i> for change in $R^2$	.62			2.82 <sup>t</sup>			2.20		

<sup>t</sup> $p < .1$  \* $p < .05$ . \*\* $p < .01$ . All continuous variables were mean centered prior to analysis. Dummy variable was coded 1 for the achievement prime, 0 for control. Males, undergraduates, and native English speakers were coded 1

## **2.5 Study 5: Goal Antecedents in Newly Forming Networks**

Study 5 investigates the local network density hypotheses supported in Studies 2-4 in a longitudinal field study of newly forming networks. This study expands the ecological validity of earlier findings by examining whether they are limited to activated cognitive networks (Hypotheses 1a and 2a), or can be generalized to mobilized social networks (Hypotheses 1b and 2b). Study 5 also assesses network position beyond immediate network density to examine the structure of actual (bounded) social networks over time. Additionally, it allows us to investigate a plausible alternative account for our earlier findings—namely, that individuals pursuing different types of goals simply report having more social network ties. It could be that individuals pursuing affiliation-oriented goals simply report greater numbers of ties. The use of complete network data from actual networks also allows us to examine another key index of network structure and position—Freeman Betweenness Centrality (Freeman, 1979)—an index of whether an individual is located on the most efficient path through the network between two randomly selected individuals. Finally, because the measure of goal strength occurred prior to network formation, Study 5 allows us to examine the causal effect of goals to network structures as they develop in real-life networks.

### **2.5.1 Method**

#### **2.5.1.1 Participants**

The population consisted of 438 incoming students enrolled in the full-time on-campus MBA program at a private Southeastern university. Wave One, an admissions survey, was completed by 370 of the students prior to their arrival on campus. Wave Two, a classroom exercise, was completed by all students at the end of the first month of classes. Consent for the

research was provided post hoc to conform with institutional ethical guidelines; 222 students consented in exchange for a charitable donation. Of this sample, 191 completed both waves (112 males;  $M_{age} = 27.81$ ;  $SD_{age} = 2.61$ ). Whole network data were used when calculating the various network scores (i.e., network centrality for a participant was based on everyone in the population), but only used consenters in regression analyses.

### **2.5.1.2 Materials and Procedures**

All newly admitted students received a survey from the university asking questions about various goals that students have while pursuing the first year of their MBA—to get an education, advance their career, socialize, and maintain health and well-being. Students rated their commitment to and the importance of each goal in their MBA pursuits on 7-point Likert scales; these items formed a two-item measure of goal strength (all alphas  $> .75$ ). Career goals align clearly with the conceptualization of self-oriented goals, and social goals align clearly with the conceptualization of affiliation-oriented goals. The other two goals—to maintain health and well-being and get an education—combine elements of both goal types; health and well-being can include self-oriented sub-goals like weight loss as well as affiliation-oriented sub-goals like belonging socially, while education (for MBA students) can include self-oriented sub-goals like learning as well as affiliation-oriented sub-goals like learning how to form a social network. Because these two goals are mixed with respect to the goal typology, no predictions about how they would relate to social network structure were advanced.

Three months after completing the admissions survey, students arrived on campus. In their introductory term, students completed a social network exercise in which they indicated friends in their section (using the roster) and completed the self-monitoring scale (Snyder &



Gangestad, 1986).<sup>1</sup> Self-monitoring is a robust antecedent to social network position (Mehra et al., 2001; Oh & Kilduff, 2008; Sasovova et al., 2010); it was thus included the measure in all analyses. Following prior research with MBA students (Flynn & Wiltermuth, 2010), network was defined by class section (section size is 70-75).

One benefit of collecting whole network data is that local network density is not based solely on the perception of the respondent (as in Studies 2-4), but is reported by transverse ties. Using UCINET (Borgatti, Everett & Freeman, 2002), the structural holes routine (Burt, 1995) ran with whole networks to calculate network density (Burt, 1992) using both in-degree and out-degree ties. The structural holes measure breaks down the whole network into the discrete ego-networks around each individual. As such, by looking solely at ego-networks, we do not capture the benefits of connections beyond the first degree. To capture a more general network position, I also ran the Betweenness Centrality routine (Borgatti et al., 2002; Freeman, 1979) in UCINET with symmetrized data. Betweenness Centrality (Freeman, 1979) is a measure of the shortest geodesic path between two actors in a network. That is, if one were to randomly travel between two points on a network graph repeatedly, Betweenness Centrality measures how often an individual would fall on the shortest path. Thus, Betweenness Centrality is another measure of network position but takes into account the whole network; that is, ties beyond the immediate ego-network.

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<sup>1</sup> Participants also completed a variety of other individual difference scales. They completed the Achievement Orientation and Affiliation Orientation sub-scales of the Personality Research Form (Jackson, 1973). These variables are most closely related to our goal types. When included in our analyses, these measures are not significant and our results do not change. Additionally, I measured the Big Five personality measures (agreeableness, conscientiousness, extraversion, neuroticism and openness to experience: Costa & McCrae, 1992). The addition of these variables did not change our results. A model including these seven additional personality variables did not alter the significance or pattern of results.

## 2.5.2 Results and Discussion

Correlations between all variables can be found in Table 3. In line with previous research, I used OLS regression to examine the effects of individual variables on social network structure (Mehra et al., 2001). Multiple regression models were run with control variables (age, gender, first language, relationship status), self-monitoring, and mean-centered goal measures to predict density as measured by structural hole formation and Betweenness Centrality (Freeman, 1979). These two measures—focusing on different levels of analysis of network structure—emphasize network denseness and sparseness (Everett & Borgatti, 2005) respectively, and are by design significantly negatively correlated in our dataset ( $r = -.39, p < .001$ ).

### 2.5.2.1 Out-Degree

I ran various regression models predicting out-degree ties, or how many total connections individuals reported in their network. As predicted, and ruling out a potential alternative explanation, the goal measures (academic, career, well-being, social) did not predict out-degree ties (all  $ps > .12$ ). Self-monitoring had a marginally significant effect on out-degree ties,  $\beta = .142$  ( $p = .08$ ), replicating findings that high self-monitors tend to have greater network size (Mehra et al., 2001).

**Table 3: Correlations***Individual Difference and Social Network Variables: Correlations and Descriptive Statistics (N = 191)*

Variables	1	2	3	4	5	6	7	8	9
1. Career Goal	–								
2. Academic Goal	.28**	–							
3. Health Goal	.20**	.18*	–						
4. Social Goal	.28**	.105	.13	–					
5. Self-Monitoring	.16*	-.05	-.02	.24**	–				
6. Density	-.25**	-.04	-.15*	-.13	-.08	–			
7. In Degree	.11	-.07	.04	.10	.24**	-.06	–		
8. Out Degree	.11	.01	.12	-.01	.16*	-.42**	.14**	–	
9. Betweenness Centrality	.17*	.00	.11	-.06	.20**	-.39**	.23**	.76*	–
<i>M</i>	6.49	6.40	5.78	5.74	3.09	.27	.13	.13	1.42
<i>SD</i>	.57	.58	.96	.98	.51	.09	.05	.10	1.87
Range	1 – 7	1 – 7	1 – 7	1 – 7	0 – 6	0 – 1	0 – 1	0 – 1	0 – 13
$\alpha$	.79	.75	.76	.84	.75				

\* $p < .05$ . \*\* $p < .01$ .

### 2.5.2.2 Density

Table 4 presents all model iterations predicting density (Burt 1992). In calculating density I symmetrized the data, using both incoming and outgoing ties as evidence of a tie between two actors in the network. Model 1, the baseline model with control variables, does not explain variance. The second step, adding self-monitoring ( $\alpha = .75$ ) to create Model 2, does not significantly improve model fit (*adjusted*  $R^2 = -1.62\%$ ). Model 3 adds the four goal commitment and importance measures, and explains 3.4% of the variance ( $p < .001$ ). This model explains significant additional variance beyond self-monitoring ( $\Delta R^2 = 9.3\%$ ,  $p < .01$ ). Consistent with Hypothesis 1b, self-oriented goals (career goals) led individuals to build connections to multiple parts of a network,  $\beta = -.225$ ,  $p < .001$ : Individuals with strong career goals (+1 SD above the mean) created social networks rich with structural holes ( $M = .23$ ), compared to those with a weak career goal (-1 SD below the mean,  $M = .28$ ). None of the other goals significantly predicted network density. Thus, these findings failed to show evidence for a positive effect of strong social goals on network density, as predicted in Hypothesis 2b and shown in Study 2 and 3. Model 4 includes a variable representing an interaction between career goals and social goals, and finds a significant interaction,  $\beta = .216$ ,  $p < .001$ . Pursuing a social goal in tandem with a career goal increases network density—that is, having strong career and social goals (+1 SD above the mean) simultaneously leads to the development of network structures less facilitative of career goals,  $M = .29$ , compared to individuals with a strong career goal (+1 SD above the mean) and a weak social goal (-1 SD below the mean),  $M = .24$ .

**Table 4: Density**

*Summary of Regression Analysis for Variables Predicting Symmetrized Density (N = 188)*

Variable	Model 1		Model 2			Model 3			Model 4			
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE(B)</i>	$\beta$
Gender	0.005	0.015	.028	0.004	0.015	.021	0.009	0.015	.045	0.009	0.014	.047
First Language	0.026	0.016	.119	0.024	0.016	.021	0.030	0.016	.137 <sup>t</sup>	0.032	0.016	.147*
Romantic Partner	-0.002	0.015	-.009	0.000	0.015	.001	-0.001	0.015	-.007	-0.001	0.015	-.004
Self-Monitoring				-0.008	0.015	-.040	0.005	0.015	.026	0.008	0.015	.044
Career Goal							-0.038	0.013	-.225**	-0.026	0.013	-.156*
Academic Goal							0.008	0.012	.048	0.004	0.012	.024
Health Goal							-0.010	0.007	-.096	-0.007	0.007	-.074
Social Life Goal							-0.008	0.008	-.086	-0.009	0.008	-.088
Career x Social Life Goal										0.035	0.012	.216**
<i>R</i> <sup>2</sup>	.014		.015			.093			.134			
<i>F</i> for change in <i>R</i> <sup>2</sup>	.875		.271			3.87**			8.40**			

<sup>t</sup>*p* < .07 \**p* < .05. \*\**p* < .01.

*All continuous variables were mean centered prior to analysis. Gender was coded 1 for males. First language was coded 1 for English. Romantic partner was coded 1 for having a spouse or long-term partner, 0 for being single.*

### 2.5.2.3 Freeman Betweenness Centrality

Table 5 presents all models predicting Freeman Betweenness Centrality (Freeman 1979). Model 1, the baseline model with controls, is not significant. The second step, adding self-monitoring to create Model 2, significantly improves model fit (*adjusted R*<sup>2</sup> = 3.4%). Replicating previous research (Mehra et al., 2001), self-monitoring increases network centrality,  $\beta = .241, p < .001$ . Model 3 adds the four goal strength measures, and explains 7% of the variance. This model explains significant additional variance beyond self-monitoring ( $\Delta R^2 = 5.6\%, p < .01$ ). Consistent with Hypothesis 1b, individuals with a strong career goal (+1 SD above the mean) assumed positions that were highly central in the network ( $M = 1.91$ ), increasing their reach to multiple groups in the network,  $\beta = .170, p < .001$ , than individuals with a weak career goal (-1 SD below the mean;  $M = 1.04$ ). Consistent with Hypothesis 2b, individuals with a strong social goal (+1 SD above the mean) assumed network positions that were significantly less central,  $\beta = -.188, p < .001, M = 1.10$ , increasing network closure, versus individuals with a weak social goal (-1 SD below the mean,  $M = 1.85$ ). In Model 4, a marginally significant interaction of social and career goals emerged,  $\beta = -.137, p < .07$ , replicating the density pattern, and again suggesting that strongly pursuing both types of goals (+1 SD above the means) puts one in a worse network position for career achievement,  $M = 1.02$ , versus individuals with a strong career goal (+1 SD above the mean) and a weak social goal (-1 SD below the mean),  $M = 2.28$ .

**Table 5: Betweenness Centrality**

*Summary of Regression Analysis for Variables Predicting Symmetrized Freeman Betweenness Centrality (N = 188)*

Variable	Model 1			Model 2			Model 3			Model 4		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE(B)</i>	$\beta$
Gender	-0.141	0.303	-.035	0.023	0.300	.006	0.044	0.298	.011	0.040	0.296	.010
First Language	-0.076	0.331	-.017	0.126	0.330	.029	0.223	0.329	.050	0.194	0.327	.044
Romantic Partner	-0.141	0.305	.036	-0.088	0.307	-.022	0.090	0.308	.022	0.082	0.306	.020
Self-Monitoring				0.933	0.294	.241**	0.988	0.301	.255**	0.942	0.300	.243**
Career Goal							0.579	0.264	.170*	0.431	0.275	.126
Academic Goal							-0.089	0.251	-.027	-0.039	0.251	-.012
Health Goal							0.218	0.148	.107	0.189	0.148	.093
Social Life Goal							-0.376	0.155	-.188*	-0.373	0.154	-.187*
Career x Social Life Goal										-0.453	0.248	-.137 <sup>†</sup>
<i>R</i> <sup>2</sup>	.002			.054			.110			.126		
<i>F</i> for change in <i>R</i> <sup>2</sup>	.137			10.09**			2.83*			3.34 <sup>†</sup>		

<sup>†</sup>*p* < .07 \**p* < .05. \*\**p* < .01.

*All continuous variables were mean centered prior to analysis. Gender was coded 1 for males. First language was coded 1 for English. Romantic partner was coded 1 for having a spouse or long-term partner, 0 for being single.*

This study demonstrates longitudinally that personal goals reported prior to entering a new network shape two important measures of social network structure and position—density and Betweenness Centrality. Those who entered their MBA program reporting that they highly valued career goals developed significantly less dense networks and assumed highly central network positions one month into the program. Pursuing a self-oriented goal like career advancement thus seems to lead individuals to attain these more powerful network positions and structures, which I have theorized, in line with prior literature, are more instrumental for individual advancement. Those who entered the program reporting that they highly valued social goals assumed significantly less central network positions one month later, which provide the benefits derived from embeddedness, such as social support and cohesion, which is useful for those who highly value social goals. When students entered the program indicating high levels of motivation toward both social and career goals, they developed significantly denser local networks and assumed significantly less central network positions one month into the program, suggesting social goals may undermine the development of networks helpful to career goals.



### **3. Discussion and Theoretical Implications**

Five studies provided evidence for a novel link between personal goal pursuit and social networks. Social network researchers have long known that network structure and position are related to goal achievement: Mobilized network structures have been shown to lead a wide variety of successful goal-related outcomes from increased social support (Cohen & Wills, 1985; Durkheim, 1897/1958) to getting a new job (Burt, 1992; Granovetter, 1973). However, little has been known about the reverse causal direction—how goals may have a causal effect on network structures. In this dissertation, I find evidence for the hypotheses that individuals activate and build social networks in response to the goals they are striving to achieve.

Across four studies, I consistently find that individuals pursuing self-oriented goals, such as career advancement, cognitively activate and develop sparser social network structures, whereas individuals pursuing affiliation-oriented goals, such as having a strong social life, cognitively activate and develop significantly denser social network structures. I find these effects in a survey, two experiments, and a longitudinal field study of newly forming social networks. These new findings contribute to psychological research on goal pursuit as well as to research on social networks, increasing the understanding of how individuals can orchestrate social processes to achieve goals, and the knowledge of what causes individuals to develop different social network structures.

#### ***3.1 Contributions to Social Networks***

In recent research on social networks, longstanding assumptions about the static nature of networks have been revised, along with assumptions of causality flowing solely from network structure to outcomes (see Kilduff et al., 2006). Newer lines of research have explored how

individuals actively shape their social networks as a function of their personalities (Sasovova et al., 2010) and status (Smith et al., 2012). Most importantly, these findings demonstrate for the first time that different personal goals held by individuals, on either a chronic basis or a temporary basis, affect key measures of social network structure and position. I reverse the traditional causal direction of network research, examining goal pursuit as the driver of social network structure. I find that individuals—previously assumed to be constrained by their social structures—orchestrate interpersonal processes that create the very social structures conducive to goals that they are trying to achieve. I further highlight the idea that constrained versus open networks are not better or worse, but rather they are better or worse at achieving different types of goals. Indeed individuals pursuing self-oriented goals cognitively activate and develop sparse networks, whereas individuals pursuing affiliation-oriented activate and develop the denser network structures, networks that facilitate each goal type. This research provides the empirical complement to the long-standing literature demonstrating how structure leads to outcomes, suggesting a bi-directional process.

In addition, these findings add to the growing understanding of the dynamic emergence of networks, showing that goal pursuits affect both cognitively activated networks and networks that are mobilized over time. Following the example of Smith and colleagues (2012), I not only find effects with cognitively activated networks in correlational and experimental studies, but also replicate the same effects in longitudinal field data of newly forming networks. Thus, I present convergent evidence for goals predicting cognitive activation of social networks in the moment (Studies 2-4), as well as the cumulative effect of goals shaping the mobilized network over time (Study 5).

The current findings also offer new insights about the merits of different network structures for career advancement. Evidence exists that sparse ties advance careers due to the unique information that sparse ties provide (Burt, 1992; Granovetter, 1973), but evidence also exists that in upper levels of organizations, dense networks are better for career advancement, because loyalty and consistency in impressions promote career mobility (Marsden & Hurlbert, 1988; Podolny & Baron, 1997). The findings clearly support the utility of sparse networks for self-oriented goals like career advancement; Study 1 data found that people feel most efficacious regarding self-oriented goals when exposed to sparse networks, and the studies found that when people feel particularly motivated to pursue self-oriented goals, they activate and construct sparser networks. However, the interaction between social and career goals found in Study 5 may be relevant, albeit not replicated experimentally in Studies 3 and 4. Those who strongly value both social and career goals may have a different strategy—they may pursue career goals not by seeking structural holes but by affiliating closely with a small, dense clique, a strategy that may be more effective in higher levels of organizations or later stages of network development (Podolny & Baron, 1997). The interaction of social and career goals and the dynamic nature of network development as careers progress are important directions for future research.

In addition to the theoretical contributions of the current work, the findings also have practical implications for organizations. For instance, if an organization composes a work team with employees who all have high career goals and does not carefully link career advancement to group performance, this group may not cohere due to their goal-driven tendencies to connect with disparate parts of the network outside of their team. Furthermore, Study 3's examination of working parents suggests that individuals who strongly value family may undermine their career goals by failing to utilize social capital effectively. Despite the fact that participants explicitly

reported high commitment to both goals (means above 4 on a 5-point scale), the relative trade-offs in goal strength still predicted how individuals approached their networks for workplace advice, with parents highly committed to their families constructing less beneficial network structures. Future research should explore these social networking patterns, addressing the balance of social and career goals within the workplace in addition to examining how employees' workplace behavior is affected by extra-organizational social goals.

### ***3.2 Contributions to Goals***

In the psychological literature, recent research has demonstrated several ways through which individuals can utilize relationships with others to help them achieve goals (Fitzsimons & Shah, 2008; Gruenfeld et al., 2008; Shea et al., in press; vanDellen & Hoyle, 2010). The current program of research makes a novel contribution to this burgeoning interest in social and interpersonal factors in goal achievement by raising the level of analysis to network structure, demonstrating how individuals' goals lead to different structural patterns of relationships. Very little empirical work in psychology has addressed social networks, either as independent or dependent variables of interest. By extending the scope of analysis as I have done in the current dissertation, I hope to encourage psychologists to take a broader view on social relations. Thinking about how relationships are organized into larger networks is a new direction that may be fruitful for a wide range of areas within psychology, but may have particular relevance for the study of goal pursuit. Goals tend not to be pursued in isolation but rather in the company of coworkers, family members, and friends; as such, social networks may be particularly relevant predictors of goal success, and may also be consequential outcomes of goal pursuit.

One notable finding in the current dissertation relates to a growing interest in psychology in the pursuit of multiple goals. Although psychologists have typically studied the pursuit of one goal in isolation—examining how students persist on academic goals in a lab environment, for example—more recently, scholars have attempted to understand more realistic everyday goal pursuits, which often involve multiple active goals, some of which facilitate each other and some of which conflict (Cavallo & Fitzsimons, 2011; Fishbach & Ferguson, 2007; Kruglanski et al., 2003). The interaction between career and social goals found in Study 5 may have psychological mechanisms of relevance to the literature on multiple goal pursuit. Given that no similar significant interaction emerged ( $ps > .14$ ) in Studies 3 and 4, possibly due to the subtlety of the priming paradigm or even the possibility that this interaction is unique to the Study 5 sample, I hesitate to over-interpret this one finding, but speculatively, I suggest that it may come down to conflict among strategies or means (Kruglanski, Shah, Fishbach, Friedman, Chun & Sleeth-Keppler, 2002). If an individual pursuing a self-oriented goal reaches out to individuals in multiple social groups, as I have suggested, this conflicts directly with a strategy of reinforcing relations within the current social group, as is the case with affiliation-oriented goals. Given that reinforcing relations is likely less effortful than creating new relations, this may explain why the effect appears to be attenuated in the direction of the affiliation goal. Again, given the inconsistency of the interaction effect and my lack of an a priori hypothesis about this effect, I tread cautiously in drawing definitive conclusions, but believe that examining the social behaviors that serve as strategies for different personal goal pursuits, and the interaction among those behaviors, will be a valuable direction for future research.

### **3.3 Limitations and Future Research**

While providing evidence towards a goal pursuit antecedent to social network structure, this dissertation represents a novel direction and set of findings, and as such, it raises a number of questions for future research. First, examining how the content of goal pursuit—self-oriented goals versus affiliation-oriented goals—affects networks means that our analysis remains agnostic about how specific characteristics of goals may shape network structure and position. For example, a large body of research has highlighted the importance of understanding goal specificity and difficulty (Earley, Connolly & Ekegren, 1989; Locke & Latham, 1990; Locke & Latham, 2002; Wood & Locke, 1990). Examining how the pursuit of vague versus specific goals, and easy versus challenging goals, shapes social network position and structure is an interesting direction for future research. Since pursuit of difficult goals leads individuals to experiment more with different goal pursuit strategies, an individual who has a challenging career goal that they cannot achieve independently may seek out helpful social networks as a sub-goal to their ultimate career goal. Second, this dissertation does not address whether individuals consciously and explicitly intend to construct networks to facilitate their goals, or whether this is a subtler, perhaps unconscious, process. Finally, I did not examine the full dynamic interplay between goals and social networks—networks may also determine the available set of goals for individuals and shape aspects of their goal pursuit; examining the mutual reinforcement of networks and goals is an important next step for this research. Building off of previous work that finds consistent network activation (Smith et al., 2012), I predict that distinct goal-driven social networking patterns will mediate ultimate goal achievement.

### **3.4 Conclusions**

Imagine that a coworker starts spending increased time with the work team. Or imagine that another coworker seems a little distant these days and is having lunch with a different, more diverse set of individuals instead of with the team. In addition to the typical self-based explanations for this change in social behavior (i.e., *they are (aren't) spending time with me because they are enamored with (mad at) me*), I suggest that a change in personal goal pursuits may also prompt individuals to approach and develop their social networks differently (i.e., *they are (aren't) spending time with me because they are seeking a promotion or friendship*). Across four studies using a variety of methods from the psychological and networks literatures, I find converging evidence that individuals pursuing self-oriented goals develop sparser networks whereas individuals pursuing affiliation-oriented goals develop denser networks. This dissertation complements the network literature's long-standing understanding of how network structure constrains and provides opportunities to achieve. In depicting goal pursuit as a driver of social network structure, rather than just an outcome of it, this dissertation highlights the fact that individuals can be active agents in creating social structures conducive to goals they strive to achieve.

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## **Biography**

Catherine Theresa Shea was born on September 28, 1982 in Hamilton, Ontario, Canada. She received a Bachelor of Commerce with Honors in 2005, and a Master of Science in Organizational Behavior in 2006, both from Queen's University, Kingston, Canada. Her research, "Riding other people's coattails: Individuals with low self-control value self-control in other people," is published in Psychological Science. She was the recipient of a Duke Graduate Fellowship during her Ph.D studies. Upon graduation she will be a Visiting Assistant Professor and Post-Doctoral Research Fellow at the Kellogg School of Management, Northwestern University.