

## **The Ties that Influence: A Social Network Analysis of Prototypical Employees' Effects on Job Attitudes among Coworkers**

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*We explore whether or not “prototypical” employees – employees who represent the goals and values of the organization - are socially influential. We contend that employees will hold similar attitudes (organizational commitment, job satisfaction) to those of prototypical employees when strong (as opposed to weak) tie relationships characterized by friendship or advice exist between an employee and a coworker. A social networks study of admissions department employees revealed that employees tend to have similar organizational commitment and job satisfaction to prototypical coworkers with whom they maintain strong friendship ties as well those with whom they maintain strong advice ties.*

### **INTRODUCTION**

Organizational identification highlights the “the perception of oneness or belongingness to” the organization (Ashforth & Mael, 1989, p. 34) or the degree to which employees perceive that their goals and values overlap with the organization’s goals and values. Research has shown the importance of organizational identification on the attitudes (job satisfaction, affective organizational commitment, turnover intentions) and behaviors (extra-role behaviors) of employees (Riketta, 2005). However, this is an over-individualized view of social identity theory. In addition to an employee’s perception that his or her values overlap with the organization’s goals and value, other employees may perceive him or her as the embodiment of the goals and values of the organization. From this perspective, it is not the degree to which individuals perceive themselves as being one with the company but the degree to which others perceive them as being a prototypical employee. While organizational identification will influence ONE individual’s behavior, prototypical employees might have a greater impact on behaviors in an organization and subsequently organizational performance by influencing other employees through their connections.

Prototypes are preeminent to the understanding organizational identification because “prototypes are part and parcel of a group’s collective identity, which is a members’ shared sense of who they are as a group” (Bartel & Wiesenfeld, 2012, p.7). Although organizational identification research provides important insights into the behaviors of individual employees, we believe that an important and largely overlooked aspect of research is the effect that prototypical employees – or employees who are perceived as the embodiment of the goals and values of the organization - have on their coworkers. With this in mind, we explore whether or not employees who are construed by their peers as “prototypical” organization members (that is, representative of the group’s identity and values; De Cremer, van Dijke, & Mayer, 2010; Hogg & van Knippenberg, 2003) are socially influential within the workplace. We also expand current research by conceptualizing the employee-prototype relationship as a social network tie which has been here-to-date overlooked in research.

To make our arguments, we draw on social identity, social information processing, and social comparison theories as well as social network research examining tie strength and tie content. We conceptualize the relationship between employee and a prototypical organizational member as a specific social network tie. Our approach allows us to systematically test the extent to which prototypes are influential in organizations, and determine whether or not such employees are influential even in the presence of other relationships that have been shown to be socially influential in previous research (for a review, see Brass, Galaskawicz, Greve, & Tsai, 2004) such as friendship and advice ties.

## **LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

### **Identification, Categorization and Prototypes**

The spectrum of human interaction is bounded by endpoints of purely interpersonal interaction (exchange partner is evaluated solely on personal characteristics) and purely intergroup interaction (exchange partner is evaluated solely on group characteristics) (Hornsey, 2008). During interactions of an intergroup nature, an individual’s self-concept is predicated on membership in a group which is also known as a person’s social identity which is one of three levels of self-concept. The super- and subordinate levels are human identity and personal identity respectively. In addition, social identity is not a monolithic identity in that individuals simultaneously maintain memberships in various groups including their employing organizations, which is known as organizational identification.

Self-categorization is a fundamental element of the identification process (Turner & Oakes, 1989). In addition, prototypes form the basis of self-categorization. According to self-categorization theory and social identity theory, individuals ascribe the distinctive characteristics of the group to a prototype (Bartel & Wiesenfeld, 2012). Prototypes may be either a fictional conglomeration of the various individuals and characteristics or another employee in the organization. A comparative process then transpires where individual characteristics are compared to the prototype’s attributes. The closer fit between individual and prototypical attributes the greater propensity to identify or incorporate the organization’s identity into the personal identity

When an employee identifies strongly with the organization, he or she has incorporated the organization into his or her personal identity and is psychologically enmeshed with the organization’s purpose, mission, goals and values as well as its successes and failures (Ashforth & Mael, 1989). Accordingly, high identifiers have a strong psychological connection to the organization, which, in turn, has a positive effect on their level of commitment, effort and attitudes about the organization (e.g., Riketta, 2005). However, researchers have largely overlooked the possibility that individuals who identify with the organization to a high degree can affect the attitudes, perceptions, and behaviors of other employees because these individuals may be perceived as prototypes. This oversight is significant for two reasons. First, employees will form networks comprised of informal relationships with other employees, which have important employee and organizational consequences (e.g., Brass et al., 2004). Second, the degree to which the individuals who comprise an employee’s network identify with the organization will vary. This is significant given that individuals who have high levels of identification potentially have significant influence over other employees (e.g., van Dijke & DeCremer, 2008).

This contention is based on the assumption that employees are motivated to be viewed as legitimate organizational members and maintain higher levels of esteem through membership in the group (Bartel & Dutton, 2001). According to self-categorization theory, such a desire will compel an employee to categorize him- or herself as an organizational member and can engage the process of depersonalization. Depersonalization occurs when the employee transforms from being a distinct individual in an organization to being a representative of the meaning of organizational membership (Turner, 1985). Specifically, Hogg and Terry (2000) suggest that employees' perceptions of the attributes that define a typical organizational member will take the form of a prototype which embodies "all attributes that characterize groups and distinguish them from other groups, including beliefs, attitudes, feelings, and behaviors" (p. 123). Assimilation of the prototype into the self-concept causes an employee to see him or herself as highly similar to other organizational members.

The propensity to self-categorize creates two conditions that suggest that prototypical employees can influence other employees. First, since prototypes are exemplary organizational members and have higher levels of organizational identification, high identifiers will likely be viewed as having the most socially accepted or valid opinions, attitudes and beliefs (Turner & Oakes, 1989). Such validation provides individuals seen as prototypes with the necessary credibility and legitimacy to influence the opinions of other organization members. Second, the process of self-categorization creates impressions among organizational members that they belong to a group comprised of similar others, which in turn creates an ideal environment for prototypical employees to influence others. When this is considered in conjunction with the arguments of Turner (1985) and Turner and Oakes (1989), which suggest that social influence is a subjective rather than an objective phenomenon, it seems plausible that prototypes may be socially influential.

### **Prototypes and Social Networks**

In order to determine whether prototypical employees are socially influential, we examine prototypicality through the lens of social networks analysis. Social networks are the mechanism through which social influence occurs in an organization because they provide employees access to the beliefs of other employees who help them to form job- and organization-related perceptions (Ibarra & Andrews, 1993). By examining the level of perceptual similarity that exists between an employee and the coworkers regarded as prototypes, we can, to an extent, understand the degree to which prototypes are socially influential.

To date, the relationship between an employee and perceived prototype has not been conceptualized as a network tie. The idea of a prototype tie differs from friendship and advice ties typically examined in social networks research because an individual need not maintain a relationship with an employee to regard them as a prototype, but instead must only regard them as a prototypical member. This allows for the possibility that an employee's reputation could lead others to view them as a prototype, even if the employees do not directly interact. This underscores the importance of considering multiplex ties. Multiplexity refers to "overlapping social networks where the same people are linked together across different roles" (e.g., friend and prototype; Portes, 1998: 16).

Operationalizing prototypes as specific network ties also allows us to explore whether they are influential. Tie strength, defined as "the amount of time, the emotional intensity, the intimacy (mutual confiding) and reciprocal services that characterize the tie" (Granovetter, 1973: 1361), is a key focus of social networks research. Strong ties are more intimate, involve more self-disclosure and provide more than just instrumental exchange. Individuals who maintain strong ties are likely to have similar attitudes, background, experiences, and access to resources (Marsden & Campbell, 1984). In contrast to strong ties, exchanges that occur through weak ties are less frequent and less intimate. Weak ties are based on infrequent interaction, usually with individuals who reside outside of the focal individual's network, and provide access to different sources of information or resources that an individual does not receive through strong ties (e.g., Granovetter, 1973).

### **Social Learning Theory and Prototype Ties**

Bandura's (1986) social learning theory emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others in learning the behaviors and attitudes of those individuals. Ibarra (1999) demonstrated that investment bank and management consulting firm employees making the transition from entry-level to management positions observed and interacted with employees whom they admired in order to learn what behaviors, attitudes and perceptions made the admired employees successful (see also Bommer, Miles, & Grover, 2003). Integrating social learning and self-categorization theory, we expect that, in seeking to be recognized as legitimate organizational members (Bartel & Dutton, 2001), employees will align their behaviors and attitudes with organizational prototypes through observation and modeling (Bandura, 1986; Turner, 1985).

*Hypothesis 1: An employee's (1a) organizational commitment and (1b) job satisfaction will be similar to the (1a) organizational commitment and (1b) job satisfaction of coworkers with whom that employee maintains strong prototype relationships.*

### **Social Information Processing and Advice-Prototype Ties**

Social information processing plays a key role in shaping perceptions, attitudes, and behaviors in organizations. The core argument of social information processing theory is that because organizations are complex and ambiguous environments, perceptions are influenced by the social context in which they form. This may occur as a result of direct statements from others, though intentional or unintentional behavioral cues, and by focusing individuals' attention on certain aspects of the organization and away from others (Salancik & Pfeffer, 1978). Research generally supports the ideas behind social information processing theory, as social information affects doctors' decisions to provide new drugs (Coleman, Katz, & Menzel, 1966), employees' attitudes towards new technology (Burkhardt, 1994), perceptions of organizational coordination (Meyer, 1994), and perceptions of employer-employee relationships (Ho & Levesque, 2005; Zagenczyk, Scott, Gibney, Murrell, & Thatcher, 2010).

We argue that social information processing will occur through advice ties because employees share information and knowledge related to the completion of their work through such ties (Umphress, Labianca, Brass, Kass, & Scholten, 2003). Advice ties are characterized by cognitive trust, or the belief that another has the ability and competence to provide help (McAllister, 1995). Therefore, asking an individual for advice is an indication of respect for the opinion of that individual and an expectation that help from that individual is available and useful. When advice is provided by prototypes, it will be more credible and salient, and employees will be more likely to follow it. By receiving advice from prototypes, beliefs about the organization will be shared either directly through discussion of organizational conditions or indirectly through conversations concerning other work-related topics. Through this interaction, individuals involved in advice-prototype relationships are exposed to others' beliefs about the organization.

*Hypothesis 2: An employee's (2a) organizational commitment and (2b) job satisfaction will be similar to the (2a) organizational commitment and (2b) job satisfaction of coworkers with whom that employee maintains strong advice-prototype relationships.*

### **Social Comparison and Friend-Prototype Ties**

Social influence can also occur when individuals draw comparisons between themselves and other individuals in order to better understand ambiguous situations. Social comparison theory (Festinger, 1954) suggests that (1) individuals learn about themselves through comparison with others; (2) individuals who have similar characteristics, such as race, gender, etc. are often chosen for comparison; and (3) social comparisons will have strong effects when objective nonsocial comparisons are unavailable and when others' evaluations are important to the individual.

Social comparison is prevalent in organizations because frequently employees' evaluations regarding their jobs and their relationship with the organization are subjective (e.g., Zagenczyk et al., 2010). Social

comparison results in similar perceptions between two individuals when one employee identifies with a coworker. When the coworker shares his or her beliefs about the organization, those beliefs will serve as signal to the employee regarding how he or she should interpret the situation (Felson & Reed, 1986). In particular, friendship ties are often used for social comparison because they develop between individuals with similar personal characteristics such as race, gender, age, and religion (Marsden, 1988). For instance, Wheeler and Miyake (1992) showed that social comparison was most frequent among close friends, followed by friends with whom individuals were somewhat close, and least likely among individuals who were not friends. Individuals depend on friends for socio-emotional support, especially for sensitive issues (Sias & Cahill, 1998) and tend to make career decisions that are similar to those of their friends (Kilduff, 1990). Further, employees who share friendship ties are more likely to exchange both positive and negative gossip (Grosser, Lopez-Kidwell, & Labianca, 2010). Accordingly, we expect that:

*Hypothesis 3: An employee's (3a) organizational commitment and (3b) job satisfaction will be similar to the (3a) organizational commitment and (3b) job satisfaction of coworkers with whom that employee maintains strong friend-prototype.*

### **Social Learning, Social Information Processing, Social Comparison and Friend-Advice-Prototype Ties**

Employees may also have relationships with individuals whom they consider to be prototypes, friends, and advice sources. Such prototype-friendship-advice ties may be extremely influential because they serve as a source of social information processing, social learning, and social comparison. Therefore, based upon our previous arguments, we expect an employee's job- and organization-related perceptions will be positively related to those of strong prototype-friendship-advice ties; as such ties will be a source of social information processing and learning.

*Hypothesis 4: An employee's (4a) organizational commitment and (4b) job satisfaction will be similar to the (4a) organizational commitment and (4b) job satisfaction of coworkers with whom that employee maintains strong friend-advice-prototype relationships.*

## **METHODS**

### **Participants and Procedures**

To test the hypotheses, a field study was conducted using employees from a section of the admissions department at a large public university in the eastern United States. Marsden (1990) suggests that membership in a specific organization, such as a work group, is a natural boundary for conducting social network research. Further, we were interested in how individuals' relationships within their organization were related to their affective organizational commitment and job satisfaction, so it is logical to test the hypotheses in a single establishment. At our research site, the admissions department is regarded as a specific organization in and of itself. It is run by a group supervisor and is responsible for coordinating and executing thousands of campus tours for prospective students each year as well as performing telemarketing duties, and representing the university on recruiting trips.

Data were collected as part of a larger survey given during a retreat sponsored by the organization. Respondents were told that the purpose of the survey was to investigate their experiences and the knowledge they had gained while performing their jobs. Employees were assured that their responses would remain confidential. To encourage participation, six \$50 gift certificates to local businesses were provided to randomly selected employees who completed the survey. Of the 138 members in the work unit, 101 were present at the meeting and complete data was obtained from 93 employees making the response rate 67%. The mean tenure of employees was of 1.94 years (s.d. = 1.26). The sample was 60.2% female and 80.6% Caucasian, 11.8% African-American, 5.4% Asian, and 2.2% other.

Next, respondents were given a roster including the names of all employees and asked questions about their relationships with them. Pictures of all employees were provided along with the survey so that respondents were more confident that they were answering questions about the correct individuals. In the third portion of the survey, employees were asked about their perceptions of organizational commitment and job satisfaction, as well as leadership positions they held and demographic information including gender, race, and tenure.

## Measures

*Social Network Ties.* Each question on the sociometric survey explored whether or not a certain type of tie existed between employees. As is common in most social networks research, all network measures were collected using a single item (e.g., Ibarra & Andrews, 1993). Although multi-item scales would be preferred, such scales are difficult to administer in social networks research because each employee must provide information concerning his or her relationships with every other member of the organization. Thus, multi-item scales would be time-consuming and impractical for respondents because such scales create high levels of fatigue (see Marsden, 2011). Wanous, Reichers, and Hudy (1997) present evidence that single-item measures are acceptable when situational constraints make a multi-item scale impractical or impossible. Their findings, which drew on meta-analytic job satisfaction data, revealed that single item measures have acceptable reliability. We minimized ambiguity by providing a detailed explanation of each tie. Further, in accordance with Marsden (1990), we used a roster that increases the reliability of network data concerning recurring interactions compared to other procedures such as having employees recall the individuals with whom they maintain relationships.

In order for a tie to be counted, both employees in the dyad needed to acknowledge its existence (with the exception of prototype ties). This methodology increases the accuracy of the measurement of social networks (Hammer, 1985), because it is more likely that a tie actually exists when it is acknowledged by both parties. The reciprocity requirement also decreases single-source bias because reciprocal measures are not derived solely from the perceptions of one employee, but rather are verified by another individual in the organization.

Another important point regarding measurement of social networks variables in this study is that, in both analyses, non-overlapping ties were used. That is, each employee was assumed to have one (or no) relationship with each other employee in the organization. For example, if employee A indicated that employee B was a friend and a prototype, employee B would be considered a friend-prototype tie of employee A. However, employee B would not be considered a friendship tie and a prototype tie as well; such a tie would only be counted as a friend-prototype tie. Thus, ties are only counted once in the analysis we used, reducing multicollinearity associated with counting the same tie in several different networks.

Friendship, advice and prototype ties were used as the building blocks for all of the variables in this study. Consistent with previous research (Ibarra & Andrews, 1993; Morrison, 2002), friendship ties were measured by asking each respondent to identify coworkers “who you see as an organization member as well as socially – outside of activities related to the organization (yes/no).” Advice ties were measured by asking each respondent to identify those employees who “provide job-related advice, meaning that this person has been a source of information related to your job as a member of this organization (yes/no).” Prototype ties were assessed in a manner similar to friendship and advice ties. Each employee was asked to identify whether or not each other individual in the organization was “an employee who has a high level of performance and serves as an excellent example of the goals and values of the organization (yes/no)”.

Data on employee friendship ties, advice ties, and prototype ties were compiled into a friendship matrix, an advice matrix, and a prototype matrix respectively. Friendship, advice, and prototype matrices were created according to the following procedures. For friendship ties, if person *i* selected person *j* as a friend, and person *j* selected person *i* as a friend, cell entry  $X_{ij}$  in the friendship matrix was 1. If either person *i* or *j* did not indicate that a friendship tie existed, 0 was entered into cell  $X_{ij}$  in the friendship matrix. For advice ties, if person *i* indicated that person *j* was a source of advice, or if person *j* indicated that person *i* was a source of advice, cell entry  $X_{ij}$  was a 1. If neither person *i* nor person *j* acknowledged

that advice was shared, a 0 was entered in cell  $X_{ij}$ . For prototype ties, if person  $i$  indicated that person  $j$  was a prototypical, or if person  $j$  indicated that person  $i$  was prototypical, cell entry  $X_{ij}$  was a 1. If neither person  $i$  nor person  $j$  acknowledged that the other was prototypical a 0 was entered in cell  $X_{ij}$ . We used different procedures to compute friendship ties vs. advice/prototype ties because friendship ties should be acknowledged by both parties to ensure accuracy (Hammer, 1985), although advice ties and prototype ties could be asymmetric (or one-way/unreciprocated) ties (e.g., person  $i$  receives advice from person  $j$ , but person  $j$  does not receive from person  $i$ ; person  $j$  believes that person  $i$  is prototypical, but person  $i$  does not believe that person  $j$  is a prototype). Because square matrices are used in QAP regression, the 93 participants surveyed create a sample size of 8556 ( $93 \times 92$ ) observations.

To measure tie strength, a frequent contact matrix was created. Nelson (1989) suggested that tie strength in organizations could be measured by asking respondents how frequently they interacted with others in the network. To build the frequent contact matrix which represented strong ties, each employee was asked whether or not they interacted with every other employee "at least once a week (yes/no)." If person  $i$  indicated that they had frequent contact with person  $j$ , and person  $j$  indicated that they had frequent contact with person  $i$  cell entry  $X_{ij}$  in the frequent contact matrix was 1.

*Strong Prototype, Friend, and Advice Ties.* The strong prototype, advice, and friendship matrices were computed by multiplying the frequent contact matrix and each of these matrices, respectively.

*Dependent Variables.* The dependent variables in this study are similarity in organizational commitment and similarity in job satisfaction. Using these variables as measures of social influence is consistent with many other social influence studies (e.g. Burkhardt, 1994; Coleman et al., 1966; Ibarra & Andrews, 1993). Consistent with other measures of perceptual similarity used in past social network research, we measured similarity in dependent variables as the extent to which the focal employee's attitude in question was similar to those of each of his/her network ties.

*Similarity in Organizational Commitment.* To calculate similarity, we performed the following steps. First, we measured affective organizational commitment using the eight-item version of the organizational commitment questionnaire (OCQ; Mowday, Steers, & Porter, 1979). Participants responded to each question using a five-point Likert scale ranging from 1 = strongly disagree and 5 = strongly agree. A sample item from this scale is, "I am proud to tell others that I am part of this work group." Next, each participant's responses to the OCQ were averaged to create a mean commitment score in which higher scores represented higher levels of commitment. Then the degree of dissimilarity was computed by taking the absolute difference between individual  $i$ 's mean commitment score and individual  $j$ 's mean commitment score (Meyer, 1994). Finally, the composite scores were used to create a commitment dissimilarity matrix in which smaller numbers represented greater interpersonal similarity in organizational commitment.

*Similarity in Job Satisfaction.* We used five questions from the INDSALES job satisfaction scale (Churchill, Ford, & Walker, 1974). Responses were measured on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). A job satisfaction matrix was constructed in the same manner that organizational commitment matrix was created. Each cell in this matrix represented the absolute difference between two respondents' mean job satisfaction.

*Control Variables.* We included a number of social network variables as control variables in our analysis to show that relationships between prototype ties and organization- and job-related perceptions were not spurious relationships. The inclusion of social networks variables accounts for the possibility that perceptual similarity occurred because employees were friends with or received advice from employees whom they did not regard as prototypes. Consistent with past research which demonstrates that friendship and advice ties are related to perceptual similarity (i.e. Meyer, 1994), we controlled for strong and weak friendship, advice, and friend-advice ties. Matrices for these variables were constructed using the same procedures used to create matrices for the dependent variables.

Similarity with respect to organizational tenure, gender, race, and formal leadership positions were used as control variables. Tenure in the organization was represented as a matrix that represented difference between the number of years an employee had been a member of the organization relative to every other employee in the organization. Tenure is an important control variable because research has

shown that individuals with higher levels of organizational commitment and job satisfaction remain in organizations longer than other employees who have lower commitment and satisfaction. Gender was a dummy variable in which 0 = male and 1 = female. Gender was used as a control variable because research indicates that gender can influence an individual's position in informal networks (e.g. Brass, 1985). Race was dummy coded with 0 = white and 1 = non-white. Race was also included as a control, as research has shown that minorities are often marginalized in social networks (Mehra, Kilduff, & Brass, 1998). Finally, leadership positions held was used as a dummy variable in which 0 = the employee did not hold a formal leadership position and 1 = the employee held a leadership position. Whether or not an employee was a formal leader in the organization was also controlled to account for the possibility that leaders who were not viewed as prototypes influenced perceptions. Similarity matrices were constructed for all control variables based on absolute difference values with respect to each variable. For example, with respect to gender, two females would have similar gender because (dummy variable) 1 – (dummy variable) 1 = 0.

## ANALYSIS AND RESULTS

The level of analysis in this study is the dyad. Therefore, each variable is represented as a matrix in which rows and columns represent actors and cells represent a relational state between actors (Raider & Krackhardt, 2001: 68). A special analysis technique was required because dyadic relations are not independent of one another, as are observations in most social science research (Raider & Krackhardt, 2001). Social networks researchers suggest use of Quadratic Assignment Procedure regression, a test that is robust against autocorrelation, because there may be high levels of autocorrelation among the error terms in regular statistical models of social networks data (Raider & Krackhardt, 2001).

Data analysis was conducted using UCINET 6 for Windows, a network analysis program developed by Borgatti, Everett, and Freeman (2002). Quadratic assignment procedure correlation analysis was used to generate a bivariate correlation matrix and quadratic assignment procedure regression (QAP) was used to test the hypotheses. QAP correlation analysis consists of two steps (1) Pearson's correlation coefficients for corresponding cells in the two matrices are computed; and (2) the program permutes the rows and columns of one matrix and calculates the correlation between the matrices. The steps are repeated 1000 times. Each time, the correlation from step 1 is compared with the correlation from step 2 to compute the number of times the correlation generated by random permutations is larger or equal to the step 1 correlation.

To test all hypotheses, the dependent variable matrices were regressed on the social network matrices and control variable matrices using multiple regression QAP analysis (MRQAP). MRQAP is similar to QAP correlation analysis. Initially, the program runs standard multiple regression across corresponding cells of the dependent variable matrix, the social networks matrices, and the control variable matrices (Borgatti et al., 2002). Following this, all rows and columns from the dependent variable matrix are permuted randomly and the regression coefficient is recomputed. The program repeats this step 1,000 times to calculate an estimate the standard error. Results from the second step are presented as  $R^2$  values and regression coefficients. Each of the coefficients calculated in step 2 is compared to the coefficient produced in step 1. Next, the program calculates the number of random permutations needed in step 2 to produce results similar to those produced in the step 1. If the proportion of similar results found in step 2 are low in comparison with those from step 1, a significant relationship is indicated (Raider & Krackhardt, 2001).

Some important differences that exist between OLS and QAP regression bear mentioning before we present the results of our analysis. First, QAP utilizes permutation-based hypothesis tests. As a result, it is not possible to calculate degrees of freedom, statistical power, or effect sizes as in standard OLS regression (Ferrin, Dirks, & Shah, 2006). Second, equivalent correlations and beta values may not represent equal levels of significance because the structure of network data limits the possible number of correlations (Gibbons, 2004). In other words, a correlation coefficient of .07 may be significant between two variables, but not represent a significant relationship between two other variables. As a result,  $R^2$



values tend to be smaller than in regular OLS regression as well. The result of these differences is that the, the primary statistic of interest in QAP analysis is the  $p$ -value, and  $R^2$  values tend to have little meaning (Gibbons, 2004). A  $p$ -value of .01 means that 1 percent of the permutations demonstrated a greater correlation than what was observed (Gibbons, 2004).

Table 1 provides descriptive statistics for control, independent, and dependent variables used in this study. As expected, employees generally maintained more weak relationships with prototypes than strong relationships. The mean number of strong prototype relationships that employees reported was 8.1 (sum of strong prototypes, strong prototype-advice, strong prototype-friend, and strong prototype-friend-advice).

**TABLE 1**  
**DESCRIPTIVE STATISTICS**

		Mean	Stand Dev	Minimum	Maximum
1	Race	-	-	-	-
2	Tenure	1.94	1.26	0	6.33
3	Female	60%	-	-	-
4	Leadership	.05	.23	0	1
	Weak Ties				
5	Advice	.36	.92	0	6
6	Friend	6.45	6.12	0	37
7	Prototype	6.04	6.51	0	34
8	Friend-Advice	.17	.46	0	2
9	Advice-Prototype	.22	.55	0	3
10	Friend-Prototype	4.65	4.75	0	36
11	Friend-Advice-Prototype	.57	.95	0	5
	Strong Ties				
12	Advice	.14	.41	0	2
13	Friend	1.96	2.49	0	16
14	Prototype	1.37	2.87	0	19
15	Friend-Advice	.25	.59	0	3
16	Advice-Prototype	.57	1.51	0	12
17	Friend-Prototype	3.22	4.39	0	32
18	Friend-Advice-Prototype	2.85	3.26	0	14
	Dependent Variables				
19	Organizational Commitment	4.09	.62	1.71	5.00
20	Job Satisfaction	4.11	.56	2.82	5.00

Note. N = 93 for all variables

Table 2 provides the intercorrelations for all variables. The reliability coefficient for organizational commitment was .77, which is consistent with past research (Mathieu & Zajac, 1990). The job satisfaction scale demonstrated an alpha coefficient of .69.

**TABLE 2**  
**RESULTS OF QAP CORRELATIONAL ANALYSIS**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1 Race																				
2 Tenure	-0.07																			
3 Gender	-0.02	0.05																		
4 Leadership	-0.08	0.14	-0.03																	
Weak Ties																				
5 Advice	0.01	-0.01	-0.01	0.04																
6 Friend	-0.03	-0.05	0.02	-0.03	-0.02															
7 Prototype	-0.03	-0.03	0.00	0.06	-0.02	-0.07														
8 Friend-Advice	0.03	-0.01	-0.01	0.02	0.00	-0.01	-0.01													
9 Advice-Prototype	0.01	-0.01	-0.02	0.02	0.00	-0.01	-0.01	0.00												
10 Friend-Prototype	-0.08	-0.06	0.01	0.07	-0.01	-0.06	-0.06	-0.01	-0.01											
11 Friend-Advice-Prototype	-0.04	-0.01	0.01	0.05	-0.01	-0.02	-0.02	0.00	0.00	-0.02										
Strong Ties																				
12 Advice	0.02	-0.02	-0.02	0.03	0.00	-0.01	-0.01	0.00	0.00	-0.01	0.00									
13 Friend	-0.07	-0.04	0.00	0.01	-0.01	-0.04	-0.04	-0.01	-0.01	-0.03	-0.01	-0.01								
14 Prototype	-0.01	-0.02	0.00	0.14	-0.01	-0.03	-0.03	-0.01	-0.01	-0.03	-0.01	-0.01	-0.02							
15 Friend-Advice	-0.01	0.00	-0.01	0.01	0.00	-0.01	-0.01	0.00	0.00	-0.01	0.00	0.00	-0.01	-0.01						
16 Advice-Prototype	0.03	-0.05	-0.02	0.00	-0.01	-0.02	-0.02	0.00	0.00	-0.02	-0.01	0.00	-0.01	-0.01	0.00					
17 Friend-Prototype	-0.06	-0.02	0.02	0.19	-0.01	-0.05	-0.05	-0.01	-0.01	-0.04	-0.02	-0.01	-0.03	-0.02	-0.01	-0.02				
18 Friend-Advice-Prototype	-0.03	-0.06	-0.02	0.05	-0.01	-0.05	-0.05	-0.01	-0.01	-0.04	-0.01	-0.01	-0.03	-0.02	-0.01	-0.01	-0.03			
Dependent Variables																				
19 Organizational Commitment	0.04	0.05	0.00	-0.06	-0.04	0.01	0.02	-0.02	-0.02	0.01	-0.02	0.00	-0.05	0.02	-0.02	0.01	-0.04	-0.05		
20 Job Satisfaction	0.07	0.08	-0.02	0.06	0.03	-0.03	-0.03	0.00	0.03	-0.03	0.00	0.00	-0.03	0.02	0.01	0.01	-0.05	-0.03	0.30	

The results for the QAP regression analysis are presented in Table 3. With respect to the control variables, our results showed that similarity in race, tenure, gender and leadership positions were not related to similarity in commitment or job satisfaction. However, weak advice-prototype ties ( $\beta = .29, p < .05$ ) were positively and significantly related to similarity in job satisfaction. Consistent with our expectations, as well as past research, strong social networks ties were significantly related to dependent variables. Strong friendship ties were positively and significantly related to organizational commitment ( $\beta = .18, p < .05$ ), but not job satisfaction ( $\beta = .10, p > .05$ ). The relationships between strong friend-advice ties and organizational commitment ( $\beta = .24, p < .05$ ) were also positive and significant. Strong advice ties were not significantly related to any of the dependent variables.

Hypothesis 1 predicted that an employee's organizational commitment and job satisfaction would be positively related to the organizational commitment and job satisfaction of coworkers with whom that employee maintained strong prototype relationships. Results indicated that strong prototype relationships were not significantly related to organizational commitment (H1a:  $\beta = -.06, p > .05$ ) or job satisfaction (H1b:  $\beta = -.07, p > .05$ ). Overall, then, we found that employees were not influenced by prototypes with whom they had frequent contact when the relationship was not characterized by advice or friendship.

Our expectation with respect to Hypothesis 2 was that an employee's (a) organizational commitment, and (b) job satisfaction would be positively related to the level of (a) organizational commitment, and (b) job satisfaction of coworkers with whom that employee maintained strong advice-prototype relationships. We found no support for this hypothesis, as strong advice-prototype relationships were not related to similarity in organizational commitment (H2a:  $\beta = -.03, p > .05$ ) or job satisfaction (H2b:  $\beta = -.03, p > .05$ ). Therefore, we found no evidence to suggest that employees adopt organization- and job-related perceptions similar to those of prototype-advice ties.

In Hypothesis 3, we predicted that an employee's (a) organizational commitment and (b) job satisfaction would be positively related to the (a) organizational commitment and (b) job satisfaction of coworkers with whom that employee maintained strong friend-prototype relationships. We found partial support for this hypothesis, as strong friend-prototype relationships were positively and significantly related to similarity in job satisfaction (H3b:  $\beta = .13, p < .05$ ) but not organizational commitment (H3a:  $\beta = .11, p > .05$ ).

Finally, we predicted in Hypothesis 4 that an employee's (a) organizational commitment and (b) job satisfaction would be positively related to the (a) organizational commitment and (b) job satisfaction of coworkers with whom that employee maintained strong friend-advice-prototype relationships. Overall, we found support for this hypothesis. Employees had similar organizational commitment (H4a:  $\beta = .17, p < .01$ ) and job satisfaction (H4b:  $\beta = .09, p < .05$ ) to strong friend-advice-prototypes.

**TABLE 3**  
**RESULTS OF HYPOTHESES TESTS USING QAP REGRESSION**

<i>Dependent</i>	<i>Organizational Commitment</i>	<i>Job Satisfaction</i>
<i>Independent</i>		
<i>Control Variables</i>		
Race	-0.05	-0.08
Tenure	-0.03	-0.03
Gender	0.00	0.02
Leadership	0.12	-0.08
<i>Weak Ties</i>		
Advice	0.35	-0.18
Friend	-0.01	0.07
Prototype	-0.02	0.06
Friend-Advice	0.2	-0.00
Advice-Prototype	0.20	0.29*
Friend-Prototype	-0.02	0.07
Friend-Advice-Prototype	0.15	0.03
<i>Strong Ties</i>		
Advice	-0.00	0.02
Friend	0.18*	0.10
Prototype (H1)	-0.06	-0.07
Friend-Advice	0.24*	-0.10
Advice-Prototype (H2)	-0.03	-0.03
Friend-Prototype (H3)	0.11	0.13*
Friend-Advice-Prototype (H4)	0.17**	0.09*

*Note.* Unstandardized beta coefficients are displayed. Coefficient signs indicate greater (+) or lesser (-) interpersonal perceptual similarity. \*Significant at .05 level; \*\*Significant at .01 level

## DISCUSSION

In this study, we examined the proposition that social influence exerted by prototypes would shape employees' organization- and job-related perceptions. Results indicate that employees' job satisfaction was similar to the job satisfaction of prototypes with whom they maintained strong friendship relationships, and strong friend-advice-prototype relationships. Employees tended to have similar organizational commitment to prototypes with whom they maintained strong friend-advice relationships. In particular, when such relationships are strong (as opposed to weak) and based to some degree in affect (as opposed to advice) in nature, there is a more conducive environment for social influence. Overall, it seems that the affect and identification that underlies friendship relationships are additional conditions that must be present in order for prototypes to have influence. In the absence of such conditions, an employee will perceive that they are sufficiently different than the prototype, which erodes the prototype's ability to influence (or the coworkers' willingness to be influenced).

### Theoretical Contributions

Our study makes several contributions to the literature. First, results suggest that prototypes are potentially an important source of social influence, a possibility overlooked in past social networks research. Second, our study adds to research demonstrating that social influence affects employee perceptions. Prior social influence research reveals that employees' social ties are related to perceptions of and attitudes towards organizations, including perceptions of organizational justice (Umphress et al., 2003), perceived organizational support (Zagenczyk et al., 2010), attitudes towards technology (Burkhardt, 1994); decisions regarding job interviews (Kilduff, 1990); and beliefs about organizational coordination (Meyer, 1994). However, no prior research of which we are aware had explored the possibility that organizational commitment and job satisfaction, which were previously conceptualized as dyadic relationships between the employee and the organization, were subject to social influence. Third, our study indicates that the study of social influence may benefit from consideration of not only whether ties are present, but also how strong these ties are and whether or not the ties are multiplex. Most social influence studies do not consider tie strength, but the results of this study demonstrate that, overall, strong ties are more influential than are weak ties. While we did not make explicit hypotheses regarding weak employee-prototype relationships, we did control for these variables. We found that weak advice-prototype and friend-prototype relationships were related to similarity in job satisfaction, but all other weak prototype relationships were insignificant. The overall pattern of our results suggests that accounting for tie strength and tie content is important in social influence research.

In addition, our results indicate that in general, multiplex ties are more influential than simplex ties. Again, most social influence studies in organizations pay little attention to multiplex ties, despite the fact that researchers such as Portes (1998) have emphasized how potentially influential such ties can be. Understanding the fact that multiplex relationships are influential is important, as it suggests that future social influence studies should use measures that not only differentiate friendship and advice ties, but also examine the effects of combinations of ties. This may have implications for managers as well; if managers can devise strategies to develop friendship relationships between employees and prototypes, prototypes may have a stronger positive effect on employee learning.

Finally, this study makes an important contribution to organizational identification research. Previous research has generally explored the degree to which an employee identifies with the organization affects various outcomes associated with that particular employee (Riketta, 2005). Our study builds on this research by furthering our understanding by investigating the effects that high identifiers (i.e., prototypes) have on other organization members. Accordingly, defining prototypes as a social network tie opens new avenues for researchers to answer a number of questions about prototypes, such as what other outcomes might be affected by prototypes, what characteristics or attributes are related to an employee being perceived as a prototype, what effect do multiple strong-prototype ties have on employee perceptions, etc.

## **Managerial Implications**

While many organizations view job satisfaction and organizational commitment as individual-level perceptions, our findings indicate that the occurrences of these phenomena are more complex. Therefore, companies must be concerned not just with how they treat individual workers, but rather with how they treat all workers in the organization. If employees who are widely regarded as prototypes are treated in such a manner by the organization that their commitment wanes or they become unsatisfied with their jobs, such a situation could lead to a pervasive belief among other organizational members that they should not be committed to the organization or satisfied with their jobs either. However, if prototypical employees feel committed and satisfied, their positive beliefs may pervade the organization as employees who do not have positive beliefs, and who are friends with these prototypes, will adjust their perceptions of the organization to be consistent with prototypical employees. This has implications for communication in organizations: managers may be well served to use prototypical employees to deliver messages when information provided by the organization through formal channels is unlikely to be believed (e.g., Bordia, DiFonzo, Haines, & Chaseling, 2005) or during difficult or stressful organizational change efforts (Bordia, Jones, Gallois, Callan, & DiFonzo, 2006), particularly when past change efforts have been difficult or unsuccessful (Bordia, Restubog, Jimmieson, & Irmer, 2011) or when employees feel that the organization actively attempts to make it more difficult for them to achieve their personal and professional goals (Gibney, Zagenczyk, & Masters, 2010).

## **Limitations**

The cross-sectional nature of this study makes it impossible to rule out the possibility that similarity in perceptions among individuals actually drives whether or not they have ties. It is conceivable that employees who are dissatisfied with their relationship with the organization or jobs would commiserate together, consistent with the idea that “misery loves company.” However, most research reveals that relationships are formed as a result of similarity that exists between individuals with respect to variables such as gender, race, or religious affiliation (e.g. Brass, 1985). These variables are probably more salient than are beliefs regarding the organization when it comes to relationship formation. Indeed, most network studies that use perceptual similarity as a dependent variable consider it to be the result of interaction between employees, not a force that drives interaction between employees (e.g., Burkhardt, 1994).

Second, the manner in which tie strength was measured is potentially problematic because it does not account for the meaningfulness of interactions. Our approach to measuring tie strength was used by Granovetter (1973) as well as Nelson (1989) and others, and in many cases researchers report that frequency of contact is highly correlated with other dimensions of tie strength (reciprocity, intensity, etc.). However, this does not preclude the possibility that individuals who had frequent trivial interactions were classified as strong ties, while individuals who had more meaningful (but less frequent) interactions were classified as weak ties.

## **Future Research**

This study presents a number of opportunities for future research. First, while we explored the role that a number of different ties play in influencing employees’ perceptions, it is likely that other network ties may also be influential. Future research examining the degree to which ties are regarded to be trustworthy may be particularly relevant. Second, future research could more thoroughly investigate the directionality of advice ties. In this study, employees were only asked from whom they receive advice. It could be argued that “advice-givers” perceptions are important in shaping the perceptions of advice-receivers.

## **CONCLUSION**

Results of our studies indicate that prototypes may be an important source of social influence in organizations. Our results show that employees tend to have similar organization- and job-related perceptions to those of coworkers with whom they maintain strong friend-prototype relationships, and strong friend-advice-prototype relationships. Further, our findings provide some support for social

information processing, social identification, and social learning theories as influence mechanisms exerted by prototypes in organizations.

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