"THE INTERPERSONAL STRUCTURE OF DECISION MAKING: A SOCIAL COMPARISON APPROACH TO ORGANIZATIONAL CHOICE"

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The Interpersonal Structure of Decision Making: A Social Comparison Approach to Organizational Choice

Under what circumstances does social information affect choices? A recent test of social information processing theory showed little effect of anonymous social cues on choices of brief tasks (Kilduff & Regan, 1988). But from the perspective of social comparison theory (Festinger, 1954) people faced with important and ambiguous decisions, such as the choice of an organization to work for, are likely to make their choices in the context of what others perceived to be similar to themselves are doing. For a cohort of MBA students, the relationships between patterns of social ties and patterns of interviews with recruiting organizations were analyzed. The results showed that students who perceived each other as similar, or who considered each other to be personal friends, tended to interview with the same organizations.. These correlations remained significant even controlling for similarities in job preferences and similarities in academic concentrations. The research places the individual decision maker in a social context often ignored by normative approaches such as expectancy theory.

That people are influenced in their attitudes and behavior by what other people say and do is a truism of human existence, affirmed by writers throughout recorded history. For example, Adam Smith, declared that "the countenance and behaviour of those [we live] with...is the only looking glass by which we can, in some measure, with the eyes of other people, scrutinize the propriety of our conduct" (quoted in Bryson, 1945, p. 161). Perhaps George Herbert Mead (1934, p. 171) summarized this perspective most succinctly in his remark that the individual only becomes a self "in so far as he can take the attitude of another and act toward himself as others act."

Despite the apparently decisive effects that social comparisons can have on individuals' attitudes and behavior, decision-making research has been generally silent concerning social influences on choices. Both the normative models, such as expected utility theory (e.g., Becker, 1976), and the descriptive models, such as prospect theory (Kahneman & Tversky, 1979), consider individual decision makers in splendid isolation from the force-field of influences that surround them. As a recent survey of social network analysis points out: "In the atomistic perspectives typically assumed by economics and psychology, individual actors are depicted as making choices and acting without regard to the behavior of other actors" (Knoke & Kuklinski, 1982, p. 9).

A good example of scholarly neglect of social influences on behavior occurs in the area of organizational choice. The study of the process by which individuals choose organizations to work for has been dominated by an expectancy theory approach that has spent "two decades worth of research debating the question of multiplicative versus

additive model usage" (Rynes & Lawler, 1983, p. 633; for reviews of organizational choice research see: Schwab, Rynes, & Aldag, 1987; Wanous, Keon, & Latack, 1983). The research described in this paper complements expectancy theory's exclusive focus on the individual decision maker by analyzing how the social context influences peoples' choices of organizations. The research is notable in that it focuses on the freely-chosen behaviors of a cohort of graduating MBAs for whom the organizational choice decision is both ambiguous and crucially important. The focus on actual behavior differs from previous studies that have relied on self-reports for both dependent and independent variables (e.g., Tom, 1971; Vroom, 1966).

The study builds directly on previous work that raised the question: under what conditions might social cues be expected to produce long-lasting main effects on behavior (Kilduff & Regan, 1988)? The present research seeks to test the prediction that freely chosen behaviors will be significantly influenced by the opinions and behaviors of peers. In looking at how real decisions about future employment are made, the research tries to answer the question: under what conditions does social information matter?

Social Comparison Theory and Organizational Choice

Although studies of social influences on organizational choice are virtually non-existent we do know that people generally acquire information about job vacancies through their informal networks of friends, family, and acquaintances rather than through official sources such as advertisements or employment offices (Granovetter, 1974;

Reynolds, 1951; Schwab, 1982; Schwab, Rynes, & Aldag, 1987, pp. 135-138). It would seem likely, therefore, that people rely on these same networks for help in evaluating potential employers.

The present research uses social comparison theory as a framework to study the effects of social networks on the organizational choice process. According to Festinger's (1954) formulation of social comparison theory: 1) human beings learn about themselves by comparing themselves to others; 2) they choose similar others with whom to compare; and 3) social comparisons will have strong effects when no objective non-social basis of comparison is available, and when the opinion is very important to the individual (see Goethals & Darley, 1987, for a recent review of social comparison research).

Social comparison processes, concerning both academic and social prowess, are intense for MBAs at prestigious schools of business. These students are in transition between their previous careers as engineers, waitpersons, students, etc., and their new careers as executives. They spend two years constructing new identities for themselves through continuous socialization by peers drawing on the culture of the business school (cf. Van Maanen, 1983). During these two years, many students are relatively isolated from their families and previous social contacts. Further, the ambiguity of the organizational choice decision itself in the absence of any clear-cut scale on which to compare organizations, together with the importance of the decision in terms of future career success, makes organizational choice one more arena in which social comparisons can be expected to operate. The student's second year in the MBA program is dominated by the question: which

organization should I join? The organizational choice decision is the culmination of two years of social and academic training.

For these reasons -- the intense socialization pressures, the openness to social influences during identity reconstruction, the nature of the choice decision -- we can expect social comparisons to significantly influence choices. As Festinger's theory would predict, the critically important and ambiguous organizational choice decision is likely to trigger the search for social information that will help evaluate the alternatives and reduce uncertainty.

Sources of Social Information

Friends. Much research has focused on social influence processes between friends and acquaintances (e.g., Coleman, Katz, & Menzel, 1966; Festinger, Schachter, & Back, 1950; Krackhardt & Porter, 1985; Newcomb, Koenig, Flacks, & Warwick, 1967). From a social comparison perspective, friends are readily available as comparison others. People are hypothesized to shape their opinions and decisions through direct discussion with these important members of their social circle.

Structurally equivalent others. A perspective that disputes the relevance of friendship to social comparison has focused on comparisons between people who occupy similar positions in the social network (e.g., Lorrain & White, 1971). These individuals are competing with each other to maintain and enhance their social positions. They are therefore keen to adopt attitudes and behaviors that they see their rivals using successfully. Those who are structurally equivalent in the network are hypothesized to "put themselves in one another's roles as they form an

opinion" (Burt, 1983, p. 272). Influence proceeds through symbolic communication between these equivalent actors.

The structural equivalence perspective, then, denies that direct social interaction between competing individuals is relevant to the process of opinion or behavior conformity. In structural equivalence research, those individuals who have the same, or similar, relations with other individuals are considered equivalent, whether or not they interact with each other (Burt, 1987). As Knoke and Kuklinski (1982, p. 60) point out, "structural equivalence procedures for partitioning a set of network actors do not require any members of the equivalent subset to maintain relations with each other."

Similar others. Some structural equivalence research explicitly assumes that individuals identified by the researcher as equivalent perceive each other as such. As Burt (1982, p. 178) has asserted: "[An actor's] evaluation is affected by other actors to the extent that he perceives them to be socially similar to himself." This assumption has proved necessary in order to explain how structurally equivalent individuals in a social system influence each other. Interpersonal influence is hard to explain if individuals interact neither personally nor cognitively.

In order to transform objective stimuli into subjective perceptions, Burt uses Stevens' (1957; 1962) law of psychophysics. Perceived similarity is calculated as a power function of objective similarity. But as Krackhardt (1987a, p. 112) has pointed out, the use of a simple translation formula to generate subjective social perceptions from so-called objective stimuli is questionable. There is

no evidence that Stevens' law applies outside the domain of physical stimuli such as temperature and weight. The implication is that "those studying cognitive networks should...**measure** perceptions of networks directly" (Krackhardt, 1987a, p. 113).

The present research, motivated by Festinger's (1954) emphasis on perceived similarity, pioneers the technique of directly asking people to name those they perceive to be especially similar to themselves. Compared with the various operationalizations of the structural equivalence concept (e.g., Breiger, Boorman, & Arabie, 1975; Burt, 1976; White & Reitz, 1983) the direct measure of similarity is closer to the subjective perception emphasized by social comparison theory.

Controlling for Alternative Explanations

Job choice versus organizational choice. In the organizational choice literature, job choice is typically confounded with organizational choice. As a recent review has pointed out (Schwab, Rynes, & Aldag, 1987, pp. 130-131): "most researchers have not made any serious attempts to differentiate the two constructs." The result has been that two very different types of choices have been treated as one. Whereas job choice involves the selection of one type of job rather than another (e.g., product brand management rather than human resources management), organizational choice involves the selection of one organization rather than another (IBM rather than AT&T).

In the present research, the dependent variable was similarity in bids for interviews with organizations. Clearly, in bidding for an interview with an organization a person is also bidding for a particular type of job. For example, two people may both bid for interviews with

all organizations that are recruiting in investment banking. Their bidding patterns will be identical because they want the same types of jobs, not because they want to work for the same organizations.

Fortunately, in the present research, it was possible to control for the effects of similarities in job preferences. Extensive information on the job preferences of all individuals was collected prior to the beginning of the recruiting season. Thus it was possible to focus on the question: over and above similarities in the kinds of jobs people prefer, is there any evidence of social influences on organizational choices?

Academic concentration versus organizational choice. Research in friendship formation has shown that individuals select each other initially because of: a) proximity (Festinger, Schachter, & Back, 1950); and b) overlapping personal constructs used to anticipate events (Duck, 1973). MBA students who choose the same academic concentrations are likely to have increased opportunities for interaction (they take the same classes), and are likely to be trained to use similar cognitive frames for making sense of the business world.

Students with the same majors, then, are more likely to become friends (and to see each other as similar) than students with different majors. But students with the same majors are also likely to interview for the same jobs. Two friends may have similar bidding behaviors not because of any interpersonal influence concerning choices of organizations, but because they both happen to be finance majors.

By controlling for the two alternative explanations, the question being posed reduces to: do people who are friends (or who perceive each

other as similar) but who have different majors and different job preferences make similar organizational choices? This question is posed more formally in the three hypotheses below.

Hypotheses

Hypothesis 1. Compared to pairs who are not friends, pairs who are friends will have similar patterns of organizational choices, even controlling for similarities in job preferences and academic concentrations.

Hypothesis 2. Compared with those pairs of individuals who are less structurally equivalent, those pairs of individuals who are more structurally equivalent will have more similar patterns of bidding behavior, even controlling for similarities in job preferences and academic concentrations.

Hypothesis 3. Compared to pairs who don't perceive each other as similar, pairs who do perceive each other as similar will have similar patterns of organizational choices, even controlling for similarities in job preferences and academic concentrations.

Method

Sample

The sample consisted of a class of 209 second-year MBA students at Cornell University and excluded non-residents who were ineligible to work in the United States. The average age of respondents was 27, and 70 per cent were male. Eighty-seven per cent of the sample completed mail questionnaires. Of the 181 people who completed questionnaires, 11 people either did not participate in the bidding (7 people) or were excluded because they were foreign exchange students (4 people). Both

questionnaire and behavioral data were available for a total of 170 people, or 81 per cent of the original sample.

The MBA Bidding Process

Organizational choice in the present study was operationalized as those organizations students tried to interview with over the five month recruiting period. The business school used a computerized bidding system under which each student could spend a total of 1300 points bidding for interviews with the 119 organizations that recruited at the school. In general, those students who made the highest bids for particular interview slots were automatically selected. The bidding data were sensitive to student preferences over a five month period, and the collection of the data was unobtrusive. Thus it was possible to monitor the behavioral preferences of subjects, and to compare, for example, the degree of bidding overlap between pairs of friends compared to pairs of non-friends. (For more details of the bidding system, see Kilduff, 1988).

Measures

Independent Variables

Friendship and perceived similarity. Friendship was measured by asking subjects to look carefully down a list of second-year MBAs and place checks next to the names of people they considered to be personal friends. Subjects were also asked to look carefully down a list of second-year MBAs and place checks next to the names of people they considered to be especially similar to themselves. A pair of individuals was considered to be a friendship pair (or a similar pair)

if at least one member of the pair nominated the other member as a friend (or as a similar).

Structural equivalence. Structural equivalence was operationalized as the similarity in patterns of relations with other individuals in the friendship network. Thus, a pair of individuals who had exactly the same ties to other individuals (even though they had no ties to each other) would have a score of zero, indicating no difference in their structural positions. A pair of individuals who had very different ties to other actors in the system would have a large difference score.

The difference scores were calculated as continuous measures in a Euclidean social space using the following formula (taken from Knoke & Kuklinski, 1982, p. 61), where the distance between actors d_{ij} and d_{ji} equals the square root of the sum of squared differences across all third actors q:

$$d_{ij} = d_{ji} = \left[\sum_{q=1}^{N} (Z_{iq} - Z_{jq})^2 + (Z_{qi} - Z_{qj})^2 \right]^{1/2}$$

Control Variables

For each individual it was possible to construct a vector of job preferences composed of zeros and ones, indicating, for each of 16 job categories, whether or not the student had shown a preference for that type of job. The preference data were collected by the Career Services Center prior to the recruiting season. A job preference correlation matrix was created by calculating the Pearson correlation coefficients

between the vectors of all pairs of individuals. This matrix contained information on how similar pairs of individuals were with respect to their job preferences.

In order to create a matrix that would show which pairs of individuals had the same majors, a list of seven categories of MBA majors was derived from the academic concentrations claimed on student resumes. The MBA students overwhelming chose two majors: finance (chosen by 56 per cent), and marketing (chosen by 26 per cent). In the few cases where it was impossible to identify an academic concentration from the available evidence, the students were categorized under miscellaneous.

For each student, then, it was possible to allocate a number from 1 to 7 indicating the focus of his or her studies. A majors similarity matrix was then created, of size 170 x 170, with cell entries of one indicating that two individuals had the same major, and cell entries of zero indicating that the two had different majors. This matrix was used to control for similarity in academic concentration in the regression analyses.

Dependent Variable

The dependent variable was similarity in bidding behavior. Each individual could bid for interviews with 119 organizations. Thus for each individual it was possible to construct a bidding vector, 119 cells long, that showed for each organization, whether or not a bid had been made. A bidding correlation matrix was constructed by correlating these bidding vectors for all pairs of individuals. The bidding correlation matrix, like the sociometric choice matrices, was of size 170 x 170, and

consisted of Pearson correlation coefficients. These coefficients indicated how similar in their bidding behavior each pair of individuals had been. For example, a coefficient of .45 in cell (123, 81) indicated that the bids of persons 123 and 81 were correlated at the .45 level.

Analyses

Multiple Regression and the Quadratic Assignment Procedure (QAP)

The basic analysis can be expressed as a multiple regression equation with five regressors and one dependent variable, where Y is the bidding correlation matrix, **Pref** the preference correlation matrix, **Maj** the majors similarity matrix, **Euc** the Euclidean distance matrix, **Sim** the perceived similarity matrix, Fr the friendship matrix, and ε the matrix of error terms:

$$Y = \beta_0 + \beta_1(\text{Pref}) + \beta_2(\text{Maj}) + \beta_3(\text{Euc}) + \beta_4(\text{Sim}) + \beta_5(\text{Fr}) + \varepsilon$$

Ordinary least squares (OLS) analysis is not appropriate for these data because the error terms are autocorrelated within rows and columns. The OLS procedure requires that the observations be independent, whereas observations concerning all possible pairs in a social network exhibit systematic dependence. A solution to the problem of how to test the significance of the βs in a multiple regression equation when the data are structurally autocorrelated has been demonstrated by Krackhardt (1988) and will be followed here.

Step 1: Multiple regression. The procedure will be illustrated by showing how the significance of the β for the friendship matrix was

calculated. In the first step two multiple regressions were calculated, with bidding similarity (Y) and friendship (X_5) as the dependent variables, and job preferences (X_1), majors (X_2), Euclidean distance (X_3), and perceived similarity (X_4) as the independent variables.

$$Y = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + \varepsilon$$

$$X_5 = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + \varepsilon$$

Step 2: Calculate residuals. The second step involved calculating the residuals, that is, the variance in Y and X_5 not explained by the regressors X_1, X_2, X_3, and X_4. The predicted value Y_{1234} was subtracted from the observed value Y. Similarly, the predicted value $X_{5.1234}$ was subtracted from the observed value of X_5.

$$Y^*_{1234} = Y - Y_{1234}$$

$$X^*_{5.1234} = X_5 - X_{5.1234}$$

Step 3: Calculate beta between matrices of residuals. In the third step, the simple regression coefficient between the two matrices of residuals Y^*_{1234} and $X^*_{5.1234}$ was calculated. As Krackhardt (1988) has

pointed out, this coefficient β^*_5 will always be exactly the same as the β_5 in the multiple regression model above.

Step 4: Test significance of beta using QAP. Once the β between the two matrices of residuals was calculated, the Quadratic Assignment Procedure (QAP) was used to assess whether or not this β was significant. The QAP procedure provided a nonparametric test of whether the two matrices were significantly related. This test was designed to deal with dyadic observations that are systematically interdependent (see Baker & Hubert, 1981; Hubert & Golledge, 1981; Hubert & Schultz, 1976; Krackhardt, 1987b).

Krackhardt (1988) has shown that each β in the multiple regression can be calculated as the simple regression between the residuals on Y and the residuals on the appropriate X variable. For each β thus calculated, the QAP test can assess its significance. This method, then, allows the researcher to conduct a hierarchical multiple regression analysis, introducing each of the independent variables one at a time, and controlling for spurious effects.

Insert Table 1 about here

Summary of Research Variables

An overview of the research is provided in Table 1. Briefly, the computerized bidding system provided the raw data from which it was possible to calculate hov closely each person's bidding behavior

overlapped with every other person's. The pair-wise bidding correlation was the dependent variable of the research. Information concerning the independent variables (friendship links, perceived similarity, and structural equivalence relationships) was derived from questionnaire responses. Because the research was relationship rather than attribute centered, the significance of the unstandardized regression coefficients was assessed by the Quadratic Assignment Procedure, a nonparametric test specifically designed for systematically interdependent data.

Results

There are three main questions which this research tries to answer. First, did pairs of friends tend to bid for interviews with the same organizations? Second, did pairs who perceived each other as similar tend to bid for interviews with the same organizations? Finally, did those pairs with similar patterns of friendships tend to bid for interviews with the same organizations?

In testing these hypotheses, two alternative explanations for the results were considered. First, the job choice explanation: in bidding for interviews with organizations, people were also bidding for particular types of jobs: investment banking, marketing, etc. Their preferences for 16 types of jobs were therefore controlled for in the multiple regression analysis presented here. The second alternative explanation focuses on academic concentrations in the MBA program: perhaps those individuals in the same academic fields -- finance, operations management, etc., -- tended to bid for the same interviews. Again, the effects of this variable were statistically controlled for in the multiple regression context.

The descriptive statistics in Table 2 show that the social networks among the MBAs were quite sparse. The median number of friends chosen was 13, compared to a median of 3 chosen as especially similar, with each student choosing from 169 possible names. Table 2 also shows that the mean number of organizations bid for was 19.66 (out of 119 available). The mean number of successful bids (those that resulted in interviews) was 16. The 84 per cent success rate indicates that the bidding system was not characterized by cut-throat competition. There was little apparent incentive, in fact, for friends to collude in spreading their bids among different organizations.

Insert Table 2 about here

Table 3 shows that, comparing mean correlations, people's job preferences were over twice as similar (r=.181) as their bidding behavior (r=.076). The base rate for bidding similarity was, then, quite low. In fact, the median bidding correlation between pairs of individuals was only .042.

Insert Table 3 about here

The bivariate correlations in Table 4 indicate preliminary support for hypotheses 1 and 3: friends, relative to non-friends, tended to bid for the same interviews ($Z=11.59$, $p<.0001$, 2-tailed), as did similars, relative to non-similars ($Z=13.05$, $p<.0001$, 2-tailed). Structural equivalence, however, appeared to be unrelated to bidding behavior.

Contrary to the predictions in hypothesis 2, those individuals who were friends with the same other people were no more alike in their patterns of bids than those individuals who were friends with different people ($z=-0.08$, ns).

Table 4 also reveals that the control variables were the most powerful predictors of bidding similarity. The correlation between similarity of job preferences and bidding similarity was .40 ($Z=32.08$, $p<.0001$, 2-tailed), whereas the correlation between overlapping majors and bidding similarity was .35 ($Z=23.43$, p.0001, 2-tailed). There was also a significant correlation of .33 between two of the independent variables, friendship and perceived similarity ($Z=33.24$, $p<.0001$). These significant correlations raise two questions. First, were friendship patterns and perceived similarity perceptions significantly correlated with bidding similarity, even controlling for the effects of the control variables? Second, were friendship and perceived similarity different constructs, or were they alternative measures of the same sociometric tie? To answer these questions a hierarchical multiple regression analysis was performed in which it was possible to assess the significance of each variable while controlling for the effects of the other variables.

Insert Table 4 about here

The results in Table 5 confirm the pattern revealed by the bivariate tests. Friends tended to bid for the same organizations, and

those who perceived each other as similar tended to bid for the same organizations. Further, there was no support for the prediction that those who were more structurally equivalent would have more similar patterns of bidding behavior.

Insert Table 5 about here

The first model in Table 5 confirms that those who had either similar job preferences or similar majors tended to bid for the same organizations. The Z scores for preferences (Z=19.119) and majors (Z=11.371) indicate significant relationships between bidding similarity and both similarity of preferences and similarity of majors ($p < .0001$). The control variables, then, were good predictors of overlapping patterns of bidding among the MBA cohort, confirming the pattern uncovered by the bivariate analyses. How well did the independent variables do in predicting similarities in bidding beyond what might be expected from a knowledge of similarities in job preferences and majors?

The second model in Table 5 shows that, relative to non-similars, those who perceived each other as similar were significantly more likely to bid for interviews with the same organizations, even controlling for similarities in preferences and majors ($Z=8.503$, $p < .0001$). Friends, too, had similar patterns of bids, relative to non-friends, even when the control variables were included in the analysis ($Z=5.787$, $p < .0001$) as model 3 shows. Model 4, however, indicates that structural equivalence failed to predict bidding similarity when the control variables were included in the regression ($Z=-0.856$, ns), replicating

the finding from the bivariate analysis. Apparently, pairs who had similar patterns of friendship ties were not significantly more similar in their choices of organizations than pairs who had different patterns of friendship ties.

Model 5 shows that friendship ($p<.0001$) and perceived similarity ($p<.0001$) remained significant when all three independent variables plus the two control variables were entered into the regression simultaneously (2-tailed test). In other words, friendship and perceived similarity had independent main effects on bidding similarity. This was true despite the fact that friendship choices and choices of similar others were significantly intercorrelated.

Model 5 in Table 5 also shows that structural equivalence remained insignificant in the full model ($Z=-1.026$, ns). The negative sign of the beta coefficient indicates that the relationship, although insignificant, was in the predicted direction: those pairs with large Euclidean distance scores (because the individuals were connected to very different sets of friends) were less similar in their bidding behavior than those pairs with small Euclidean distance scores (who tended to have the same friends).

The analyses indicated, as expected, that people with similar job preferences and similar academic concentrations tended to choose the same organizations with which to interview. More interesting were the results showing that individuals who perceived each other as similar members of the MBA cohort, or who perceived each other as friends, tried to interview with the same organizations. These results remained significant even controlling for the powerful effects of overlapping job

preferences and academic concentrations. Finally, structural equivalence, which is often used as a measure of perceived similarity, failed to predict bidding similarity, although the effect was in the expected direction.

Discussion

According to social comparison theory, individuals facing important and ambiguous decisions tend to elicit, and be influenced by, the opinions of peers. The results of the present research supported predictions derived from social comparison theory. Pairs of individuals who were either friends or who perceived each other as similar tended to make similar organizational choices, even if they had different academic concentrations and different job preferences.

One of the surprises of this research was the failure of structural equivalence to predict patterns of homogeneity in bidding behavior. The ineffectiveness of the structural equivalence explanation stands in contrast to recent work showing the marked superiority of structural equivalence over explanations based on friendship and acquaintainceship ties (Burt, 1987). The general argument made in favor of structural equivalence has been that the perception of similarity is crucial to the diffusion of influence, and that perceived similarity may have little to do with direct social interaction. This general argument is certainly supported by the present research, but the most effective operationalization of perceived similarity was based on the direct perceptions of the individual, rather than on structural equivalent estimates of relative positions in the friendship network.

Because social comparison theory stresses the importance of the individual's own perception of similarity, the sociometric questions in the present research allowed individuals to nominate similar others on the basis of personal definitions, rather than on the basis of researcher-imposed constructs (cf Kelly, 1955). Future research could elicit from the sample the bases of perceived similarity, and use these dimensions to assess degrees of structural equivalence. It may be that similarity is being assessed on the basis of perceived expertise, for example, rather than in terms of positions in the friendship network.

The relative superiority of perceived similarity and friendship over structural equivalence must be kept in perspective. The best predictors of bidding homogeneity were not the sociometric variables, but job preference similarity and similarity of majors. For the first time in the empirical literature on organizational choice (see Schwab, Rynes, & Aldag, 1987, for a review), it was possible to focus explicitly on choices of organizations, controlling for the confounding effects of job preferences and academic specialization. The social influence independent variables operated on the margins of choices, perhaps determining which organizations, of those offering the particular jobs the students were interested in, would be selected for bids.

This rather peripheral role of social influences should not, however, lead us to dismiss them as unimportant. This research has examined social influences only at the very end of a long decision process. The same kind of analysis could be applied to the actual choices of job preferences and MBA majors. These previous choices restrict the extent to which later choices can be influenced by social

or other forces. But these previous choices may themselves have been influenced by friends, rivals, and family.

The present research differs from previous work (e.g., Granovetter, 1974) that has found strong effects of social networks on the transmission of job vacancy information in imperfect labor markets. The MBAs in the present research made choices in a relatively perfect market characterized by full advance information concerning vacancies. Information concerning the characteristics of recruiting organizations was also widely disseminated by means of special company presentations on campus, and through the Career Services Center. The market appeared to work quite effectively, with about 70 per cent of the students actually obtaining jobs through the school-organized system, receiving an average of three job offers each.

The overlapping patterns of bidding behavior between friends and between similar others in the present study cannot be dismissed, then, as the result of the sharing of scarce information concerning vacancies. All the evidence points to a market environment overflowing with information. Conversations with the MBAs in the sample suggested that friends (and those who perceived each other as similar) appeared to share, not facts about recruiting organizations, but evaluative criteria on which alternatives could be judged. For example, one group of finance majors decided amongst themselves that investment banking firms should be evaluated primarily on how much "face-time" was demanded, that is, how many hours per week employees had to show their faces in the office.

In a relatively perfect market, therefore, with an abundance of information, social networks may help to create and validate choice criteria. Previous research has shown that friends do indeed mutually influence evaluative criteria (Duck, 1973), and the way these criteria are used in organizations (Krackhardt & Kilduff, forthcoming). The opinions of strangers, however, concerning trivial choices is unlikely to influence behavior (Kilduff & Regan, 1988). As social comparison theory would predict, only important and ambiguous decisions, such as organizational choice, motivate individuals to seek comparative information from peers.

Most tests of social comparison theory have been laboratory experiments (e.g., Latane, 1966; Suls & Miller, 1977). Such research has generally neglected "the larger social context in which the social comparison process operates" (Pettigrew, 1967, p. 248). A recent survey reported that, "we are just beginning to study how SE [social evaluation] works in the context of real-world social networks" (Gartrell, 1987, p. 61).

In moving social comparison research from the laboratory to the field, the present research relied on indirect measures of social influences on behavior rather than on systematic observations of influence processes (cf. Pfeffer, Salancik, & Leblebici, 1976). The existence of social influence was inferred from the significant overlaps in bidding behavior beyond what could be predicted from a knowledge of overlapping job preferences and academic concentrations. Future research could examine the influence process itself through the case

study method (e.g., Abolafia & Kilduff, 1988), or through a within-persons longitudinal study of a small group (e.g., Rynes & Lawler, 1983). Such research could help answer the question: does influence take place through the process of "taking the role of the other" (Mead, 1934) in the absence of any direct contact between individuals? Or is personal interaction necessary in order for one person to influence another?

Organizational choice was selected by Soelberg (1967) as an example of the kind of non-routine decision-making that is so little understood and yet which "forms the basis for allocating billions of dollars worth of resources in our economy every year" (1967, p. 20). More than twenty years have passed since Soelberg recommended future research on social influences on decision making as the "single most promising direction" in which the study of organizational choice could be extended (Soelberg, 1967, p. 23). Despite renewed interest in Soelberg's ideas (e.g., Power & Aldag, 1985), neither organizational choice research, nor decision making research in general, has moved in the direction he envisaged.

Researchers have neglected the importance of patterns of influence among freely interacting individuals in part because of the absence of appropriate statistical procedures to study such phenomena, and in part because of the dominance of theories (such as expectancy theory) that emphasize individual cognition. The present research shows how state-of-the-art advances in social network analysis can be used to test hypotheses derived from a theory of interpersonal influence. More importantly, the work presented here suggests that in order to

understand how individuals make complex decisions, it is essential to study their interactions in the social systems to which they belong.

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Table 1

Summary of Research Variables

Variables	Source of Data	Operationalization
DEPENDENT		
Overlapping choices of organizations	Computerized bidding system	For each pair, the correlation between bidding patterns across 119 orgs
INDEPENDENT		
Friendship	Friendship questionnaire	For each pair, whether either person claimed the other as a friend
Structural equivalence	Friendship questionnaire	The Euclidean distance between each pair
Perceived similarity	Perceived similarity questionnaire	For each pair, whether either person claimed the other as similar
CONTROL		
Overlapping job preferences	MBA resume book	For each pair, the correlation across choices of 16 jobs
Overlapping majors	MBA resume book	For each pair, whether the individuals chose the same of 7 majors

Table 2

Summary Statistics for Number of Friends, Number of Similar Others, and Number of Bids

	Max[a]	Median	Mean	Range	S.D.
Similars	169	3	4.46	40	5.21
Friends	169	13	17.49	70	14.50
Bids	119	19	19.66	54	9.72

[a] Maximum number of friends, similars or bids that could be chosen.

Table 3

Means and Standard Deviations of Variables

Variables	Min	Max	Mean	S.D.
Bidding	-0.259	0.789	0.076	0.166
Equivalence	2.449	13.491	8.730	1.668
Friendship	0	1	0.146	0.353
Similarity	0	1	0.047	0.211
Majors	0	1	0.385	0.487
Preferences	-0.540	1	0.181	0.310

Note. The results are based on 28,730 dyadic observations.

[a] Pearson correlations.

[b] Euclidean distance scores.

[c] Each observation was either 0 or 1.

Table 4

Significance of Zero-Order Correlations Among Variables

Variables	1	2	3	4	5	6
1. Bidding						
r	-	-.01	.11	.10	.35	.40
Z	-	-.08	11.59**	13.05**	23.43**	32.08**
2. Equivalence						
r		-	.07	.00	.01	.00
Z		-	2.90*	-0.18	0.34	0.31
3. Friendship						
r			-	.33	.08	.11
Z			-	33.24**	4.67**	7.40**
4. Similarity						
r				-	.04	.07
Z				-	2.93*	6.91**
5. Majors						
r					-	.48
Z					-	22.05**
6. Preferences						
r						-
Z						-

Note. The Z scores were calculated by means of the Quadratic Assignment Procedure (QAP) and are based on 28,730 dyadic observations.

* $p < .005$ (2-tailed)

** $p < .0001$ (2-tailed)

Table 5

Five Multiple Regression Models Predicting Bidding Similarity Showing Unstandardized Beta Coefficients and Z Scores.

	Models				
Independent Variables	(1)	(2)	(3)	(4)	(5)
Equivalence					
β				-0.002	-0.002
Z				-0.856	-1.026
Friendship					
β			0.030		0.021
Z			5.787*		4.407*
Similarity					
β		0.059			0.047
Z		8.503*			6.675*
Majors					
β	0.072	0.072	0.071	0.072	0.072
Z	11.371*	11.420*	11.286*	11.348*	11.360*
Preferences					
β	0.160	0.157	0.157	0.160	0.156
Z	19.119*	18.895*	18.888*	19.094*	18.722*

Note. The Z scores were calculated by means of the Quadratic Assignment Procedure (QAP).

* $p < .0001$ (2-tailed)

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