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A CONFIGURATIONAL APPROACH TO INTERPERSONAL RELATIONS: PROFILES OF WORKPLACE SOCIAL RELATIONS AND TASK INTERDEPENDENCE

Jone L. Pearce
Graduate School of Management
University of California, Irvine

Steven M. Sommer
School of Business
University of Nebraska

Alan Morris
Graduate School of Management
University of California, Irvine

Marcia Frideger
Graduate School of Management
University of California, Irvine

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Jone L. Pearce
Graduate School of Management
University of California, Irvine
Irvine, CA 92717-3125
Phone 714/824-6505 or FAX 714/824-8469
JLPearce@UCI.EDU

Steven M. Sommer
School of Business
University of Nebraska

Alan Morris
Graduate School of Management
University of California, Irvine

Marcia Frideger
Graduate School of Management
University of California, Irvine

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Abstract

The development and validation of a theoretical model of organizational interpersonal relations is reported. Interpersonal relations, consisting of social relations and task interdependence, are hypothesized to consist of central dimensions which can be used to create profiles of different organizations, occupations and departments. The central dimensions of social relations were confirmed as "competitiveness," "helpfulness," and "trustworthiness", and the expected task interdependence dimension of serial interdependence disaggregated into "dependence on others" and "others' dependence," while "reciprocal interdependence" was reproduced as expected. The dimensions meet rigorous tests of reliability and of discriminant and convergent validity in four organizational settings. Hypothesized configurations of interpersonal relations based on differences in organizational culture, organizational type, occupational differences, and hierarchical level, drawn from the theoretical literature, were supported.

A Configurational Approach to Interpersonal Relations: Profiles of Workplace Social Relations and Task Interdependence

Theoretical dimensions have rarely been used to develop profiles in organizational behavior. While the correlates of the "Big Five" personality dimensions have been well established by personality theorists (Barrick & Mount, 1991), few profiles of organizational behavior processes within organizations have been developed. Here, the development and validation of a "Interpersonal Relations Profile" that can be used to characterize perceptions of different configurations of social and task relations within organizations is reported. Hypotheses are tested tat indicate configurations do vary in organizations with different practices and cultures and for employees in different task relationships with one another. The usefulness of this approach in theory development, as well as in practical diagnosis, is illustrated.

In organizational behavior, interest in both social processes and interdependence in organizational behavior is long-standing. Interest in understanding the role of social processes dates back to Roethlisberger and Dickson's (1939) pioneering studies at General Telephone's Hawthorne plant. Similarly, task interdependence figures prominently in numerous organizational theories, particularly those focusing on organizational design (Thompson, 1967; Hickson, Pugh & Pheysey, 1969; Galbraith, 1977). However, the rich theoretical traditions of both concepts have not been matched by comparable developments of systematic measures of these complex processes. Rather, researchers have used simple measures of a component of these processes as surrogates. The literature on which the Interpersonal Relations Profile is based consists of two primary dimensions, social relations and task interdependence, which are discussed below.

Social Relations

Although workplace social relations are inherently complex, many current theories center on simple bivariate relationships. They have focused on the roles of social relations, both as mediators of employee reactions to organizational practices or as rewarding ends in themselves. One example of the mediating role of social processes that has been suggested is that they influence employees' judgements of organizational "fairness" (Whyte, 1955; Adams, 1965; Bies, 1987) through comparison processes. Other examples where their influence is felt include judgements regarding such fundamental employee expectations as performance levels (Roethlisberger & Dickson, 1939), which tasks employees should perform (Loveland & Mendleson, 1974), attitudes (Krackhardt & Porter, 1985), and even whether or not to steal from employers or customers (Mars, 1982); all have been found to be mediated socially. Whether working from a psychological tradition (Hackman, 1976) or a sociological one (Granovetter, 1985; Salancik & Pfeffer, 1978), there is a long-standing consensus that individuals' organizational behavior is socially embedded.

In addition to their role in mediating between organizational practices and employee actions, workplace social relations have been studied for what they contribute, in their own right, to employee welfare. For example, employees who enjoy the company of their immediate coworkers generally enjoy greater job satisfaction (Rhodes & Steers, 1978). Also, having the opportunity to interact with others at work alleviates workplace alienation (Walker & Guest, 1952). Thus, the quality of members' workplace social relations is seen as a type of intrinsically valued organizational reward.

While there are validated measures of several facets of workplace social relations, there are no measures based on a comprehensive theoretical and

empirical treatment of the topic. Three decades ago, researchers at Minnesota and Ohio State Universities developed questionnaire measures of "satisfaction" with coworkers and supervisors (Weiss, Dawis, England & Lofquist, 1967) and satisfaction with group dimensions (Hemphill, 1956). Since that time, our theories have begun to focus on more facets of these social relationships, as well as to recognize the importance of social relationships outside the immediate work group or department. The profile developed here is for the three most salient targets of social relations: within-department, supervisor-subordinate, and another department (the one with which the respondent has the most frequent contact).

Departmental relations. Measures of the social relationships among peers in organizational behavior have been dominated by a focus on "coworker satisfaction" (Weiss et al., 1967). Weiss et al. defined it as an employee's satisfaction with "the way my coworkers get along with each other." Coworker satisfaction has been shown to be useful in moderating reactions to job characteristics (Oldham, Hackman & Pearce, 1976). "Group cohesiveness" has also shown utility in accounting for variation in performance (Seashore, 1954), with highly cohesive groups having relatively more uniform levels of performance. Yet, while group cohesiveness is a useful measure of an important social process, it has limited application. For example, it is relevant only to those employees in identifiable groups, whereas not all individuals work in clearly defined work groups or teams. Particularly at professional and managerial levels, individuals may work influentially in social settings but may not be, strictly speaking, members of a work group of peers performing similar tasks.

While global evaluations of coworker satisfaction and group cohesiveness are at times useful, they mask the most meaningful reasons for the evaluation. In particular, recent research suggests three facets of workplace interpersonal relationships that are distinct from one another but which differentially predict

important workplace behaviors. First, there is evidence that often coworkers simultaneously compete and cooperate with one another (Mills, 1991; Weick, 1983). Tjosvold (1986) suggests that workplace relations often contain elements of both competition and cooperation and that employees will behave toward one another differently under those different conditions. Sommer (1991) discovered that the competition/cooperation dimension is independent from coworker satisfaction, that is, when conflicting goals are appropriate to the context and if fair rules exist to determinine winners, competitive coworker relations can actually result in greater reported satisfaction and intimacy than when goals are cooperative.

Second, there is a growing body of research on the extent to which employees are "helpful" to one another at work. The extent to which employees spontaneously help others has been studied as a component of extra-role behavior (Katz & Kahn, 1966; Pearce & Gregersen, 1991), citizenship behavior (Organ, 1988; O'Reilly & Chatman, 1986), and spontaneity (George & Brief, forthcoming). While intuitively we might expect "helpfulness" to be manifest in relationships among employees with cooperative goals, as Tjosvold has emphasized, Mills and Sommer's work suggests that employees may help others only with tasks on which they are not competing directly. Further, Organ (1988) suggests that the concept of helpfulness is more useful in predicting job performance than job satisfaction, and, therefore, when employee behaviors are being examined, should show greater promise for performance predictions than for coworker satisfaction.

Finally, we would suggest that the best overall evaluation would be "trust" rather than "satisfaction." The concept of satisfaction has long been criticized as containing numerous different components (Evans, 1969). Schwab and Cummings (1970) suggested that the concept of satisfaction has at least two meanings: one involves satiation of needs and the other is an attitude resulting from evaluation. Alternatively, trust is a central concept in all of the behavioral, social and economic

sciences (Lewis & Weigert, 1985; Nell, 1991). Whether or not an individual trusts another has a direct effect on that individual's actions. Gambetta (1988) found, in Sicily, that pervasive distrust led to fragmentation into personal "fiefdoms," stagnation and uncertainty. Rotter's (1980) long program of research on trust indicates that those who distrust are more likely to lie and steal. The use of the concept of trust in interpersonal relations, rather than whether or not individuals find these relationships to be satisfactory, allows the application of a wide body of scholarship and research from psychology (e.g., Rotter, 1980), sociology (e.g., Shapiro, 1987), and economics (e.g., Arrow, 1974).

Supervisor relations. Longstanding research has also viewed the supervisor-subordinate relationship as as a social one. In one tradition of leadership research, subordinates are asked to characterize their supervisors' leadership style (Stogdill, Goode & Day, 1962) or their satisfaction with their supervisor (Weiss et al., 1967; Smith, Kendall & Hulin, 1969). Although it is possible to infer characteristics of the supervisor-subordinate relationship from these studies of leadership style, traditional studies appear to be concerned primarily with using the subordinates as reporters of the supervisor's behaviors rather than with studying the social relationship between them. The exception has been Dansereau, Graen and Haga (1975), who viewed leadership as consisting of a relationship between a supervisor and each subordinate. They observed that the same supervisor might have very different relationships with different subordinates, and they have been trying to learn why these relationships differ and what implications the differences have. This focus on the relationships between supervisors and subordinates has been very productive, and we hope to build on Dansereau et al.'s work by characterizing the relationships between supervisors and subordinates more completely. It is expected that the supervisor-subordinate relationship can be characterized by the three distinct dimensions of competitiveness, helpfulness, and trustworthiness.

Other departmental relations. Although empirical research has focused on evaluations of the relationships between supervisors and subordinates and among members of the same work group, recent research suggests that the quality of relationships among employees in different departments who must work together is also important. Sayles (1989) and Galbraith (1977) have argued that lateral relationships across departmental boundaries present particularly difficult interpersonal challenges. Recent research by Jelinek and Schoonhoven (1990) on organizational behavior in advanced technology companies with rapid product obsolescence emphasized the amount of time professional employees spend addressing cross-departmental relationships. However, there has been no systematic empirical research on these relationships. Here, it will be hypothesized that these relationships also will be characterized by the same three dimensions described above.

It is proposed that the three dimensions of competitiveness, helpfulness, and trustworthiness will be characteristic of these three different kinds of relationships: supervisor-subordinate, departmental coworkers, and coworkers from other departments:

H1: Workplace social relationships among supervisors and subordinates, departmental coworkers and non-departmental coworkers will all be characterized by three distinct dimensions: competitiveness, helpfulness, and trustworthiness.

Finally, an instrument measuring interpersonal relations would facilitate theory testing and development. Because social relations are complex, the best research has tended to use either qualitative methods (e.g., Mars's, 1982, research on the social context of cheating at work) or very focused quantitative measures (e.g., Jackson's, 1965, development of a metric for assessing normative

expectations). A validated instrument based on an integrated theoretical foundation will allow researchers to use scales that more closely reflect their focal construct rather than relying on the generalized "coworker satisfaction" or "supervisor satisfaction" scales. In addition, profiles on these dimensions of different groupings, such as organizations or occupations, could aid in theory refinement. Although probably no one such instrument could capture all of the subtleties of in situ social relationships, it would be an improvement over existing options.

Task Interdependence

In a work context, task interdependence is an important feature of interpersonal relations. The level of interdependence, whether or not it is asymmetrical, and the kind of interdependence would all be expected to affect interpersonal relations. Therefore, the profile includes a measure of task interdependence. Thompson's (1967) comprehensive theoretical discussion of the role of interdependence in organizational design has served as a foundation for subsequent theories and research on task interdependence. He categorized task interdependence as consisting of "pooled interdependence" (dependence on one another through dependence on the organization as a whole), "sequential interdependence" (dependence on others for input into one's own work or on others to consume one's output), and "reciprocal interdependence" (in which the individual must work collaboratively with others to produce a collective work product).

Theories of interdependence have been central to theories of organizational configuration (Galbraith, 1977; Nadler & Tushman, 1988) and control (Hickson et al., 1969; Pfeffer & Salancik, 1978). However, researchers have been only partially successful in their attempts to test individual-level theories of the effects of task interdependence by adapting measures to the individual level that were developed for unit or organizational level assessments.

Van de Ven, Delbecq and Koenig's (1976) measure of task interdependence has been the one most widely used. It consists of two components. The first is a pictorial presentation of jobs on separate continua of independent, sequentially dependent, reciprocally dependent, and requiring team work. Supervisors were asked to characterize the percentage of work flow in their units reflected in each of the four pictures, with the weighted percentages summed. Then, in the second component, respondents were asked to rate the extent to which members have "one-person jobs" and the extent to which members meet to discuss how each piece of work should be done. A .59 correlation between the pictorial and rating indices was found, suggesting that the two forms shared substantial variance. While the development of this instrument was an important step toward assessing task interdependence and helped to support the important findings outlined in Van de Ven et al.'s (1976) work, the instrument has two limitations.

The Van de Ven et al. instrument is not easily adaptable to analyses at the individual employee level. Smith, Organ, and Near (1983) used a pictorial index in their test of the association between task interdependence and citizenship behaviors, thereby committing an aggregation error (respondents were asked to characterize the work in their unit as a whole and this aggregate score was then assigned to them as individuals). While the interdependence of individuals within a unit may be similar, it can also vary a great deal. In addition, Thompson ordered his forms of interdependence along a Guttman-type scale on which each higher-level form of interdependence incorporates all lower forms. However, Van de Ven et al. placed the forms at intervals on a scale of overall interdependence. We suggest that this may mask important complexities and that the question of whether forms of interdependence are separate, as Thompson hypothesized, or are components of a unitary scale of interdependence, as Ven de Ven et al. suggested, should be tested empirically.

Kiggundu's (1983) measure, developed from his conceptualization of task interdependence, consists of received and initiated task interdependence. Unfortunately, he also did not complete rigorous tests of these dimensions' discriminant validity. His report of an intercorrelation between the two scales of a relatively high .50 suggested that these items may actually represent one interdependence scale.

We report the development and validation of measures perceived task interdependence at the individual level. Such a scale should prove useful in testing whether or not Thompson's conceptual distinctions are meaningful at the individual level and in testing theories of individual-level tasks. Because pooled interdependence should be a constant at the individual level, we propose to test only two of Thompson's original dimensions.

H2: Perceived task interdependence will be characterized by two distinct dimensions: serial and reciprocal interdependence.

Item Development

Theoretical Domain Sampling

Social relations. The intent of the instrument was to test hypotheses that the hypothesized dimensions do, in fact, represent overall workplace social relations. Therefore, care was taken to write items that were not narrow synonyms for the three dimensions. After reviewing relevant theories and other instruments, forty items were written, some worded positively and some negatively.

The targets of these assessments of the respondents' relationships are

1) the respondent's supervisor (Supervisor),

2) the respondent's colleagues in the same department (Department), and

3) the colleagues of the respondent in another department (Other Department).

The designation of other departments was done in two ways. One involved having every individual in a department assess the relationship with another specific department. This form was followed in the University-Time1 and in the Accounting Firm. The other method involved having each individual assess the relationship with the one department with which he or she had the most frequent interaction (method for the Aerospace Engineering Company and the University-Time2 samples). All items were in a five-point agree-disagree Likert-type format.

Task interdependence. Twenty items, some worded positively and some negatively, were developed to assess overal task interdependence.

Initial Item Selection

Sample and procedure. The sample for the initial item selection consisted of 99 non-academic managers and supervisors from a state research university (University-Time1). The sample was a complete census of middle-level managers at this organization in 1984. The designated "Other Departments" for members of each division were selected by the chief administrative officer and his immediate staff members, based on their judgement of the divisions with which each respondent had the most interaction. Initially, a letter from the university's chief administrative officer was sent to all respondents announcing the study and assuring confidentiality. Surveys were administered in groups in each of the seven departments, with a response rate of 83 percent. After data collection was complete, all of the managers received a brief summary for use at their management retreat.

Item selection. The social relations items for each target (Supervisor, Departmental Colleagues, and Other-Departmental Colleagues) and for task

interdependence were factor analyzed separately using a varimax rotation. Five factors with eigenvalues greater than one were found for each target. To be retains, items had to load at least .45 on any one factor or at least .10 greater than on any other factor; applying these criteria reduced the original 40 items to 21 items for each target. Using an identical factor analytic procedure for perceived task interdependence, three factors remained, leaving 16 interdependence items.

Sample and Procedure for Final Scale Development

University-Time2. In 1988, the first author was asked by the state university to conduct an evaluation of a new merit pay program which had just been installed for managerial and professional employees. The revised version of the Workplace Social Relations Survey and other instruments were administered in group settings to a random sample, stratified by rank, of managers and professionals (60% response rate for 234 useable responses). In addition, a stratified sample of interviews was conducted. All participating employees received a brief report of the results, and the human resources department executives received an evaluation of their new merit pay program. Due to job changes and the fact that the second survey was administered to a sample, rather than being a census, only 32 useable surveys were received from managers present for both University-Time1 administration in 1984 and University-Time 2 in 1989.

Accounting Firm. In 1985, a regional office of an international "big eight" accounting firm was asked to participate in the validation study. After an introductory letter from the managing partner, surveys were distributed to all accountants and consultants in this regional office through company internal mail (a complete census of all professionals below the "partner" level). If a response was not received in the mail within three weeks, a second package was mailed. Sixty-two useable responses (71% response rate) were obtained. Interviews were conducted

with a stratified random sample representative of the major ranks and specialties. All professional staff members received a brief report of the results after the completion of data collection.

Aerospace Engineering Company. This was the aerospace engineering company of a large Fortune 50 manufacturing company. At the time data were collected in 1988, the company received 60 percent of its revenue from governmental contracts (defense and space) and 40 percent from commercial aircraft manufacturers. The survey was administered as part of the first author's evaluation of the company's use of "contract" engineers. A census of the engineers and engineering technicians in three departments received the surveys in group settings. An 82% response rate resulted in 223 respondents from the Aerospace Engineering Company. A stratified random sample of engineers and their supervisors, representing the major ranks and specialties, was selected for interviews. At the completion of data collection, a report on peer and supervisor reactions to contractors was presented to the director of human resources management.

Scale Dimensionality

Exploratory Factor Analysis

A series of factor analyses were performed, using principal components extraction and a varimax rotation, on the items for the social relations scales and the task interdependence scale. Eigenvalues greater than one were used to determine factor solutions. Items with factor loadings greater than .45 were retained for a second factor analysis. This process was iterated until a stable factor pattern, with all items meeting the criteria above, was achieved for each of the four domains.

Supervisor relations. Of the initial 21 items, 18 items met the criteria and were retained. A three-factor solution accounted for 68% of the total item variance. Wordings for all of the items, as well as factor loading patterns and communality estimates, can be seen in Table 1A.

Insert Table 1 about here

Departmental relations. Of these initial 21 items, 16 were retained in a stable three-factor solution. These three factors accounted for 63% of the total item variance. Wordings for these items, as well as factor loading patterns and communality estimates, can be seen in Table 1B.

Other departmental relations. Seventeen of the initial 21 items were retained in a stable three-factor solution accounting for 54% of the total item variance. While the first two factors had excellent reliability, the reliability of the third factor was unacceptably low (.48), so it was dropped from further analyses (internal consistency reliabilities reported in Table 3). Wordings for all items, as well as factor loading patterns and communality estimates, can be seen in Table 1C.

Task interdependence. Of the initial 16 items, 13 were retained, leading to a stable three-factor solution. These three factors accounted for 52% of the total item variance. The specific wording of each item, as well as the factor loadings and communality estimates, can be seen in Table 1D.

Confirmatory Factor Analysis

Confirmatory factor analyses were conducted with the LISREL VI maximum likelihood procedure (Joreskog & Sorbom, 1986) on the correlation matrices for all four sets of items. Model restrictions imposed were such that each variable loaded on one and only one hypothesized factor, that the error terms were uncorrelated, and that, consistent with the exploratory orthogonal rotation, the PHI matrix was

standardized. Although LISREL provides four indicators of model fit, lack of consensus in the literature on any single best measure suggests the importance of using several assessment methods. Therefore, two additional indices of incremental fit over a baseline model were calculated.

The overall χ^2 provides an omnibus measure of a model's goodness-of-fit by testing whether the hypothesized structure differs significantly from the observed data. A lower χ^2 value indicates the plausibility of the model, while large values indicate significant differences. However, χ^2 is significantly affected by sample size, such that with larger samples even trivial differences are detected as significant (Hayduk, 1987). LISREL also provides the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), and the root mean square residual (RMR). The GFI measures the relative amount of variance and covariance jointly accounted for by the model, while the AGFI differs from the GFI by adjusting for degrees of freedom. These measures range from 1.00 to 0, with values close to 1.00 indicating a good fit. The RMR measures the mean residual between the sample and the hypothesized matrices, with small values indicating model significance. While the GFI, AGFI, and RMR are indices of absolute fit, Bentler and Bonett (1980) have proposed a normed index of relative fit (BBI). A null model of no common factors is created, providing an endpoint against which hypothesized models can be assessed. This comparison is made by looking at the difference in fit (χ^2) between the null and the target model relative to the null model. The Tucker-Lewis (1973) index (TLI) is a variation of the BBI which uses the difference in fit to degrees of freedom ratio between the null and target models, relative to the difference between the fit to degrees of freedom ratio of the null model and an "ideal" model (the "ideal" has a ratio of 1.0, since expected χ^2 equals *df*). In an empirical examination of over 30 goodness-of-fit indices, the TLI was found to be superior in its independence from sample size (Marsh, Balla & McDonald, 1988).

Overall, fit indices indicate significance of an entire model, but individual parameters also must be assessed. LISREL provides t-values (i.e., *z* scores) which test the significance of each parameter. Modification indices also indicate the degree to which overall model fit will be improved by altering individual parameters. For the confirmatory factor analyses on each of the four domains below, interpretable and parsimonious models were considered superior to statistically driven modifications (Hayduk, 1987). Therefore, modifications which would only marginally improve fit were not made. In order to conduct a conservative test of the models, the assumptions of independent dimensions were not relaxed (i.e., no cross loadings were allowed).

Supervisor relations. The goodness-of-fit and the adjusted goodness-of-fit are acceptable for the specified model. The BBI, TLI, and RMR provide strong support for the model. The t-values for the individual factor loadings range from 9.14 to 27.19, with $p < .01$. The coefficient of determination for the items is .99.

Departmental relations. The GFI and AGFI, as well as the RMR (.04), indicate an excellent overall fit of the SR data. The BBI and TLI also provide excellent results for the proposed factor pattern. T-values for individual factor loadings ranged from 8.86 to 25.03, and all were significant at $p < .01$. The total coefficient of determination for all items was 0.99. All indicators provide excellent support for the model.

Other departmental relations. The goodness-of-fit and the adjusted goodness-of-fit are acceptable for the specified model. Relaxing some parameters may improve the BBI, but the TLI provides good support for the hypothesized model, as does the RMR (.06). Individual t-values for the factor loadings range from 6.88 to 19.93, all significant at $p < .01$. The coefficient of determination for all items is 0.95.

Task interdependence. As seen in Table 2, the GFI (.94) and the AGFI, as well as the RMR, indicate an excellent overall fit of the hypothesized factor pattern to the data. The BBI and the TLI for the specified model are acceptable. The t-values for the individual factor loadings range from 5.70 to 20.51, and all were significantly different from 0 at $p < .01$. The total coefficient of determination for the items was 0.95.

Insert Table 2

In summary, as Table 2 indicates, the Task Interdependence, Supervisor, Departmental, and Other Departmental Relations scales fit these data very well, as shown by several different indices, and the internal consistency reliabilities reported in Table 3 are acceptable. These tests indicate that these scales are internally homogeneous and sufficiently distinct from one another.

Insert Table 3 about here

Discriminant Validity

Scale Independence

Table 4 reports separately the scale intercorrelations for each of the four samples. As can be seen, there is good scale independence, despite the expected conceptual overlap. The three task interdependence scales are quite independent of one another. There are substantial differences in the scale independence across organizations, with the respondents in the Accounting Firm reporting the highest cross-target social relations intercorrelations. However, there seems to be a very good discrimination between the perceived task interdependence scales and the

social relations scales (see Table 4), suggesting that common method variance is not problematic for the survey as a whole.

Insert Table 4 about here

The first hypothesis, stating that the dimensions of competitiveness, helpfulness, and trustworthiness would characterize all three types of relationships, was largely supported. For the targets of social relations with supervisor and coworkers in the respondents' own department, the dimensions emerged as predicted. However, only two dimensions emerged for the relations with other-departmental coworkers: helpfulness ("parochial") and trustworthiness ("reliable"). Perhaps the relatively more intermittent interaction with members of the other department make their relative competitiveness less salient for these employees. Although the resultant scales have a good correspondence with the original dimensions, the item content across targets is not perfectly consistent, so the scales were given different names.

The second hypothesis predicted that the resultant scales for task interdependence would reproduce Thompson's concepts of serial and reciprocal interdependence. However, serial interdependence split into two distinct components: the respondent's Dependence on Others (the "input" component of serial dependence) and Others' Dependence on the respondent (the "output" component of serial dependence). Thus, although reciprocal interdependence appears to be conceptually distinct from serial interdependence, at the individual level respondents distinguish between whether they are dependent or others are dependent on them. Sayles's (1989) argued that different patterns of interdependence characterize different kinds of tasks. These results are consistent with that characterization, with those respondents reporting higher levels of dependence on others not necessarily reporting higher levels of others dependence

on them. While some respondents may have high levels of both input and output serial dependence, for others, the relative importance of the two differs.

Comparison with Prominent Attitude Measures

Each of the four survey administrations also included selected attitude measures which have been used widely in organizational behavior research: Satisfaction With Coworkers, Satisfaction With Supervisor, and General Job Satisfaction from Hackman and Oldham's (1980) Job Diagnostic Survey; Job Involvement (Lodahl & Kejner, 1965); and Organization Commitment (Mowday, Steers & Porter, 1979). The pattern of correlations reported in Table 5 is consistent with theoretical expectations. The task interdependence scales and the Job Involvement are unrelated to other socially-focused scales, since they measure concepts with little conceptual overlap with them. The scales focused on Supervisory Relations (Supportiveness, Favoritism, Encourage Competition) are most strongly associated with Satisfaction With Supervisor, while those focused on Departmental Colleagues (Trustworthy, Exploitive, Competitive) are most strongly associated with Satisfaction with Coworkers. Those focused on relations with the Other Departmental colleagues have modest to nonsignificant correlations with all these scales from the literature.

Insert Table 5 about here

These comparisons provide additional support for the discriminant validity of these scales and, hence, for their use in producing profiles. The satisfaction measures have only modest associations with the competitive facets (Encourage Competition, Competitive), suggesting that the degree of competitiveness in the relationships is not as strongly associated with employees' satisfaction in these relationships as with the extent to which they judge these others as Trustworthy and

Helpful. Interestingly, Organizational Commitment relates most strongly to how Supportive employees see their supervisor as being and to how Trustworthy they deem their departmental colleagues. This suggests that, as expected, "trustworthiness" may be the most important facet employees consider when evaluating their colleagues and their workplace.

Construct Validity

Construct validity is assessed by examining the extent to which the scales produce the same patterns of relationships that would be expected if they were, in fact, tapping the hypothesized constructs of task interdependence and social relations.

Much as personality theorists have found that a pattern of central attributes characterizes an individual's personality (Digman, 1990), so organizations, departments, and even occupations can be profiled using these dimensions. Construct validity and the utility of these dimensions are assessed by testing theory-based hypotheses of configurations of relationships in different groupings. Although these variables are at the individual level of analysis, we propose that the different tasks, occupations, reward structures, and organizational cultures of these three organizations will result in different configurations on these dimensions. If these separate dimensions are to be useful, they must reflect social relations differences and different task interdependence among organizations and members of different occupational groups. Hypotheses regarding social relations configurations and task interdependence configurations follow.

Social Relations

Corporate culture patterns. The public accounting firm had an "up-or-out" promotion policy. Substantial numbers of accountants were terminated (or left after

discovering that they would not be promoted) after each round of promotions from staff to senior to manager to partner. Only a small proportion of accountants entering this accounting firm could expect to be promoted to partner, therefore the "corporate culture" of this accounting firm was highly competitive. However, this competition was a normal part of the public accounting environment and so, following Sommer, would not be expected to lead to lower levels of trust. Thus,

H3: The public accountants will report greater supervisor favoritism, encouragement of competition, and competitiveness of departmental colleagues than will university administrators and aerospace engineers; however, there will be no difference in perceptions of supervisory supportiveness, departmental trustworthiness, and other departmental reliability among accountants, administrators, and engineers.

As can be seen in Table 6, the hypothesized pattern was supported. Accountants report significantly more supervisory favoritism and encouragement of competition, as well as competitiveness among their departmental colleagues, but their assessments of supervisory supportiveness and collegial trustworthiness were no lower than those of the administrators and engineers. In fact, the accountants report significantly higher departmental colleague trustworthiness and competitiveness than do the engineers -- despite the overall negative correlation between these two dimensions. Thus, although the three dimensions are correlated across all settings, in particular settings the dimensions may be unrelated, or even negatively related, reflecting the different configurations of particular social relations in a given setting.

Insert Table 6 about here

Collaboration patterns. Work that brings employees into more frequent collaborative contact with others should lead to less differentiation among targets. In the public accounting firm, employees frequently rotated through project teams with varying memberships. In the space of a few years, they would have worked on an interdependent team with almost all of the other employees in the regional office. In contrast, the university administrators and aerospace engineers had only limited cross-departmental contact. Once in a while, they may have served on a cross-functional task force or called colleagues in other departments to obtain information, but rarely was there an occasion to work interdependently with any of them for a sustained time on an important task. We would expect this difference in work-related collaboration to result in two effects. First, the accountants should report greater trust in other departmental colleagues because they have worked with them more often than have the administrators (these data are not available for the engineers). Second, the correlation among the social relations dimensions across targets would be greater for the accountants because they are less likely than the administrators and engineers to have distinctly different relationships with the different targets. This hypothesized pattern difference is not tested using the manager-only University-Time1 sample because the collaboration patterns of managers are expected to differ, as is detailed in the next section.

H4: The accountants will report more positive other-department collegial reliability and lower parochialism than the University-Time 2 administrators, and they will have higher cross-target intercorrelations in their perceptions of social relations than will the administrators and engineers.

The expected pattern was largely supported. In Table 6, it can be seen that the University-Time2 administrators reported significantly lower other department

collegial reliability than did the accountants, but the hypothesized difference did not appear for parochialism. The cross-scale cross-target intercorrelations appear in Table 4. Overall, there are more consistently high cross-target correlations for the accounting firm respondents than for university or engineering company respondents. This suggests that the accounting firm pattern of job rotation is associated with both greater trust of colleagues outside their own department and less distinction among the different targets than in the less mobile and more autonomous university administrators and aerospace engineers.

Hierarchical patterns. Finally, we would expect that supervisors' coordinating and information processing responsibilities will bring them into more frequent work-related contact with others in the organization than would non-supervisors. The University-Time1 respondents were middle-managers and all formally supervised others; most of their subordinates, in turn, supervised others. In the University-Time2 and the Accounting Firm, the respondents can be categorized into those without formal supervisory responsibilities ("administrative and professional" employees for the university and "staff accountants" for the accounting firm) and supervisors ("managers" and "executives" for the university and "seniors" and "managers" for the accounting firm). None of the respondents from the Aerospace Engineering Company had formal supervisory responsibilities. In addition, frequently being responsible for representing their own units in arguments for resources (Pelz, 1952; Sayles, 1989) will lead managers to report greater competitiveness in relationships. Again, we expect this pattern of difference between supervisors and non-supervisors only in the university and the engineering company, because the frequent contact among non-partner supervisors and accountants in the accounting firm would make the hierarchical distinction more mute. Therefore,

H5: University supervisors will report greater collegial trustworthiness, reliability, and departmental competition than will non-supervisors in this organization.

Table 7 contains social relations of the supervisory and non-supervisory respondents. (The University-Time1 and Aerospace Engineering Company reports are included for comparison purposes.) It can be seen that the hypothesized pattern has been supported partially. While there is no difference in supervisors' and subordinates' levels of trust in their colleagues, supervisors do view themselves as in a more competitive relationship with their colleagues than do those without supervisory responsibilities. Taken as a whole, the support for the predicted differential patterns among these conceptual dimensions of workplace social relations provides good support for the construct validity of these scales and for the use of the dimensions in developing differential profiles.

Insert Table 7 about here

Task Interdependence

Task interdependence would be expected to vary substantially across types of jobs. As noted earlier, Thompson's (1967) original conceptualization was intended to articulate the different types of interdependence in different types of work. In this sample, we can test two configurations, one drawn from Thompson's original distinctions among types of tasks and another drawn from organizational behavior theory regarding the tasks of supervisors.

Occupational patterns. The occupations of university administrator, public accountant, and engineer differ greatly. University administrators work in a Professional Bureaucracy (Mintzberg, 1979), with professional administrators and managers in this sample concerned largely with applying their professional

expertise. They evaluate and recommend, usually having clear personal responsibility for particular tasks. Thus, they spend relatively little of their work time in highly interdependent teams, and they, therefore, are expected to report relatively less Reciprocal Interdependence than respondents spending more time on team projects. Aerospace engineers work on "project teams" that meet to coordinate their individual tasks. However, accountants produce a genuine "team product": an audit or information system installation. Therefore, one component of the pattern difference between the respondents in these organizations is the expectation that the public accountants will report greater reciprocal task interdependence than will the university administrators and aerospace engineers.

Further, the accountants' team membership is expected to also affect another of the task dependence dimensions. Since their performance is so clearly a collective product, they are hypothesized to experience less personal responsibility for performance outcomes (Earley, 1989). This should be reflected in their reports that others are less dependent on them, as compared to administrators who are clearly more personally accountable. Here, we expect the engineers to report a pattern similar to that of the accountants rather than to the administrators'. That is, the engineers' completed designs are collective products attributable to a team rather than to an individual, while the university administrators nearly always produce an individual analyses or decisions.

Finally, the accountants' team membership should make their dependence on others quite salient to them, so we would expect them to report greater task dependence on others than the university administrators and aerospace engineers. Therefore,

H6: The public accountants will report comparatively greater reciprocal task interdependence and task dependence on others than will the university

administrators or aerospace engineers. The university administrators will report relatively greater dependence on others than will the accountants or engineers.

As can be seen in Table 6, with the exception of the University-Time 1 respondents, the hypothesized configuration is reflected in the reported task interdependencies. The public accountants report significantly greater reciprocal interdependence and greater dependence on others than are reported in University-Time 2 and by aerospace engineers. In addition, the university administrators at both times report greater dependence of others on them than the less personally accountable public accountants and aerospace engineers. The only exception to the expected pattern is the report of significantly higher reported reciprocal interdependence and task dependence on others by the University-Time1 administrators, as compared to what the University-Time 2 administrators report. We believe this can be accounted for by the fact that the University-Time1 respondents are exclusively managers, causing the dependence patterns of their supervisory tasks to "overwhelm" the professional administrator tasks.

Hierarchical patterns. These self-report task interdependence measures should also reflect the different patterns of interdependence of supervisors and non-supervisors in these different organizations. Certainly, we would expect supervisors to report higher levels of overall task interdependence. Supervisors are formally responsible for coordinating work and information among workers within their own units as well as across units (Galbraith, 1977). However, we would also expect that the types of interdependence of supervisors would vary depending on the nature of the work they supervise and their functions in the organization.

The university administrators work in a professional bureaucracy, so we would expect higher levels of reported task dependence on others and reciprocal

interdependence among the supervisors there compared to non-supervisors. This is because supervisors must coordinate the work of their relatively autonomous professional-subordinates. Because the work in the public accounting firm is more reciprocally interdependent, we would expect that there would be less difference in reported task dependence on others and reciprocal interdependence between employees and their supervisors (who remain involved in direct project professional tasks). Supervisors' coordinating responsibilities (Sayles, 1989) should lead them to report greater dependence of others on them, regardless of the differences in the work they supervise. Therefore,

H7: The university supervisors will report greater dependence on others and reciprocal interdependence than will non-supervising administrators, while no such differences will be found between supervisory and non-supervisory public accountants. Supervisors in all organizations will report greater dependence of others on them than will non-supervisory employees.

From Table 7, it can be seen that the hypothesized pattern is supported. The university supervisors report significantly greater task dependence on others and reciprocal interdependence than the non-supervisors. In addition, the accounting and university supervisors reported significantly greater others' dependence on them than the non-supervisory accountants and administrators. Further support for the hypothesized pattern is reflected in the perceptions of the non-supervisory aerospace engineers and University-Time1 supervisors, which are consistent with the hypothesized pattern.

In summary, the three dimensions of task interdependence -- dependence on others, others dependence on self, and reciprocal interdependence -- have successfully reflected hypothesized patterns of task interdependence across different

organizations, occupations and hierarchical levels. This suggests that this emergent distinction is a valid one and can serve usefully in theory testing.

Conclusions

The self-report measures of task interdependence and workplace social relations composing the Interpersonal Relations Profile found substantial support for their reliability and discriminant and construct validity. It was found that the patterns of mean responses and relationships among these separate dimensions could provide a substantially richer description of task interdependence and perceptions of workplace social relations than that provided by other global measures.

Valuable insight into workplace social relations is provided by the discovery that a wide universe of items characterizing a respondents' relationships with three different targets each combined into three distinct dimensions reflecting trust in the other, the extent to which they are competing, and the degree to which others in close working relationships are helpful. Although these dimensions are intercorrelated across samples, we found that they reflected different social configurations in the organizations sampled. These scales accurately reproduced patterns of social relations consistent with the theoretical descriptions of supervisors' tasks. Further, in the accounting firm with its explicitly competitive personnel policies, the employees reported greater competition in their working relationships, but competition there was not associated with less trust in their colleagues or supervisors. Since trust appears to be a particularly important feature of social relations and there has been some controversy about whether or not competition at work damages working relationships (Tjosvold, 1986; Sommer,

1991), these measures could provide the means to research more throughly the complex effects of workplace competition.

It was found that when organization-level theories of task interdependence were generalized to the level of individuals, serial interdependence disaggregated into two components. Serial interdependence components -- the extent to which individuals are dependent on others and the extent of others' task dependence on them -- appear to be meaningfully different concepts at the individual level, thus deserve future theoretical work. For example, theorists such as Sayles (1989) have described the different strategies of managers who find that their subunits are relatively more dependent on others. These scales provide a means to test his ideas and similar notions about the effects of task interdependence on organizational behavior.

These measures have their limitations. The measures are individuals' perceptions of relationships, so they are subject to numerous perceptual and self-enhancement biases. Although they showed good discriminant validity, we cannot know to what extent the remaining positive correlations between trustworthiness and helpfulness, in particular, are the result of biased measure or of actual overlap among the concepts. However, individuals act on their own perceptions of objective reality, and it is difficult to design an observational study of organizational social relations that accurately sample the meaningful contacts for participants. These scales provide easy to obtain measures that can be used to test theories from organization theory, social psychology, and organizational behavior which heretofore either have been untested or have relied on generalized surrogate measures of these concepts.

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Table 1A

Factor Loadings for Supervisor Relations Scales

Scale Items	LOADINGS			h^2
Supportiveness ("Trustworthiness")				
I can rely on my supervisor.	0.85[b]	-0.22	-0.03	0.77
I don't really feel that my supervisor and I are working toward shared or team objectives (N).[a]	-0.78	0.27	0.05	0.69
Overall, my supervisor is very trustworthy.	0.77	-0.33	-0.12	0.71
My supervisor cannot be replied upon (N).	-0.76	0.26	0.11	0.66
My supervisor has a great deal of integrity.	0.76	-0.32	-0.05	0.68
My supervisor is friendly.	0.74	-0.25	-0.12	0.62
Supervisors and subordinates have confidence in one another.	0.74	-0.30	-0.08	0.64
My supervisor seems willing to listen to my problems.	0.70	-0.22	-0.10	0.56
My supervisor has no "team spirit" (N).	-0.70	0.26	0.02	0.56
Supervisor and subordinates seem to distrust one another (N).	-0.65	0.36	0.14	0.57
My supervisor is considerate of subordinates' feelings.	0.64	-0.32	-0.15	0.54
My supervisor seems to be rather distant and unapproachable (N).	-0.56	0.42	0.17	0.52
Favoritism ("Helpfulness")				
My supervisor tends to "play favorites."	-0.32	0.87	0.13	0.88
My supervisor engages in favoritism.	-0.31	0.85	0.18	0.85
I feel that my supervisor's treatment of employees has been biased.	-0.44	0.76	0.12	0.79
Sometimes my supervisor seems to lack confidence in subordinates.	-0.41	0.58	0.07	0.51
Encourages Competition ("Competitiveness")				
My supervisor discourages competition among employees (N).	0.06	-0.06	-0.90	0.82
My supervisor encourages employees to compete with one another.	-0.16	0.23	0.83	0.78
Eigenvalues	9.57	1.54	1.06	

[a] (N) indicates negatively worded item. [b] Item factor loading for its scale underlined.

Table 1B

Factor Loadings for Departmental Relations Scales

Scale Items	LOADINGS			h^2
Trustworthy ("Trustworthness")				
Members of my work group show a great deal of integrity.	0.79[b]	-0.30	-0.06	0.72
I can rely on those I work with in this group.	0.76	-0.24	-0.06	0.65
Overall, the people here are very trustworthy.	0.75	-0.32	-0.09	0.68
We are usually considerate of one another's feelings in this work group.	0.72	-0.20	-0.19	0.59
The people in my group are friendly.	0.68	-0.07	-0.02	0.47
There is no "team spirit" in my group (N).[a]	-0.67	0.33	0.09	0.56
There is a noticeable lack of confidence among those I work with (N).	-0.66	0.35	0.02	0.56
We have confidence in one another in this group.	0.66	-0.37	-0.17	0.60
Exploitive ("Helpfulness")				
Others in my work group seem to be rather distant and unapproachable.	-0.27	0.61	0.04	0.45
Certain individuals in my work group have a tendency to "play favorites".	-0.21	0.83	0.11	0.74
There is a lot of favoritism among some of the people in my work group.	-0.28	0.78	0.07	0.70
I feel that some others in my work group are biased.	-0.24	0.77	0.16	0.67
Members of this work group tend to "use" other people.	-0.36	0.69	0.20	0.65
Some members of this work group cannot be relied upon to do what they say they will do.	-0.26	0.67	0.09	0.52
Competitive ("Competiveness")				
We discourage competition among ourselves (N).	0.13	-0.02	0.88	0.79
We tend to be competitive with one another in this group.	-0.01	0.35	-0.76	0.71
Eigenvalues	7.26	1.64	1.18	

[a] (N) indicates negatively worded item. [b] Item factor loading for its scale underlined.

Table 1C

Factor Loadings for Other-Departmental Relations Scales

Scale Items	LOADINGS			h^2
Reliable ("Trustworthiness")				
Overall, the people I work with in this other group are trustworthy.	0.74[b]	-0.20	-0.12	0.61
We have confidence in one another whether we work in the same group or not.	0.70	-0.28	-0.11	0.59
I can rely on those I work with in this other group.	0.69	-0.19	-0.20	0.55
Most members of this other group have a great deal of integrity.	0.68	-0.22	-0.04	0.52
Overall, the people I work with in this other group are friendly.	0.67	0.01	0.11	0.46
There is a noticeable lack of confidence among those I work with in this other group (N).[a]	-0.65	0.28	0.16	0.53
There is little "team spirit" among groups here (N).	-0.65	0.26	0.19	0.53
We are usually considerate of one another's feelings.	0.60	-0.22	0.10	0.42
We don't really feel that we are working toward shared or team objectives (N).	-0.55	0.30	0.11	0.41
Some members of this other group cannot be relied upon to do what they say they will do (N).	-0.48	0.34	0.22	0.40
There are members of this other group who seem willing to listen to my problems.	0.48	-0.10	0.22	0.29
Parochial ("Helpfulness")				
Certain individuals I come into contact with there have a tendency to "play favorites".	-0.23	0.83	0.06	0.75
There is favoritism among some of the people I work with there.	-0.29	0.82	0.04	0.76
Some employees in this other group help their "friends".	-0.05	0.79	-0.01	0.63
Members of this other group tend to "use" people.	-0.33	0.68	0.25	0.64
Selfish actions are considered acceptable among some I work with here.	-0.38	0.57	0.15	0.49
Some of those I work with in this other group seem to be rather distant and unapproachable.	-0.38	0.55	0.09	0.45
[Dropped for Insufficient Reliability]				
We discourage competition among departments (N).	-0.11	-0.03	0.82	0.69
We occasionally are competitive with members of this other group.	0.02	0.35	0.65	0.54
Eigenvalues	7.28	1.79	1.18	

[a] (N) indicates negatively worded item. [b] Item factor loading for its scale underlined.

Table 1D

Factor Loadings for Task-Related Interdependence Scales

Scale Items	LOADINGS			h^2
Depend on Others				
I work fairly independently of others in my work (N).[a]	0.72[b]	-0.15	0.01	0.54
I can plan my own work with little need to coordinate with others (N).	0.69	-0.09	0.12	0.50
I rarely have to obtain information from others to complete my work (N).	0.67	-0.07	-0.08	0.46
My own work is relatively unaffected by the performance of other individuals or departments (N).	0.66	0.03	-0.29	0.52
I frequently must coordinate my efforts with others.	-0.58	0.37	0.13	0.49
My own performance is dependent on receiving accurate information from others.	-0.53	0.20	0.13	0.34
Others' Dependence				
I am frequently interrupted by others' requests for information.	-0.13	-0.11	0.79	0.65
In my job I am frequently called on to provide information and advice.	-0.04	0.31	0.74	0.65
The way I perform my job has a significant impact on others.	-0.12	0.47	0.57	0.56
Reciprocal Interdependence				
My job involves working closely with others in producing a team effort.	-0.34	0.72	0.18	0.67
I get together with other "team members" so we can set our job objectives together.	-0.21	0.69	-0.12	0.52
I work closely with others in doing my work.	-0.39	0.63	0.12	0.57
My job consists of providing timely and accurate information to others.	0.11	0.50	0.18	0.28
Eigenvalues	4.04	1.58	1.14	

[a] (N) indicates negatively worded item. [b] Item factor loading for its scale underlined.

Table 2

Goodness-of Fit Results for Theoretical Models

	χ^2	df	GFI[a]	AGFI[b]	RMSR[c]	BBI[d]	TLI[e]
Supervisor	561.52	132	.874	.836	.058	.91	.91
Department	306.90	101	.938	.916	.042	.94	.95
Other Department	445.63	149	.882	.850	.063	.85	.89
Interdependence	239.10	62	.944	.917	.051	.87	.88

[a] Goodness-of-fit index.

[b] Adjusted goodness-of-fit.

[c] Root mean square residual.

[d] Bentler-Bonett normed fit index.

[e] Tucker-Lewis nonnormed fit index.

Table 3

Means, Standard Deviations, Scale Intercorrelations and Internal Consistency Reliabilities

Scales[a]	$\bar{X}$	s.d.	Intercorrelations		
Supervisor Relations			**1**	**2**	**3**
1. Supportiveness[a]	3.75	.79	(94)[b]		
2. Favoritism	2.69	.99	-77	(90)	
3. Encourage Competition	2.78	.76	-29	35	(73)
Departmental Relations			**1**	**2**	**3**
1. Trustworthy	3.80	.60	(89)		
2. Exploitive	2.77	.78	-65	(87)	
3. Competitive	2.97	.78	-11	22	(64)
Other-Department Relations			**1**	**2**	
1. Reliable	3.52	.52	(87)		
2. Parochial	3.11	.67	-65	(86)	
Task Interdependence			**1**	**2**	**3**
1. Depend on Others	3.70	.68	(75)		
2. Other's Dependence	4.01	.62	27	(63)	
3. Reciprocal Dependence	3.77	.64	46	37	(62)

[a] Five-point Likert-type disagree-agree scale.

[b] Numbers in parentheses indicate scale internal consistency reliabilities.

n = 618.

Table 4

Scale Intercorrelations for Each Organization

	TASK INTERDEPENDENCE												SUPERVISOR											
	Depend on Others				Others' Dependence				Reciprocal Interdependence				Supportiveness				Favoritism				Encourages Competition			
TASK INTERDEPENDENCE	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E
Depend on Others	–	–	–	–																				
Others' Dependence	15	34†	33†	22†	–	–	–	–																
Reciprocal Interdependence	45*	46†	51†	34†	34†	43†	32†	39†	–	–	–	–												
SUPERVISOR																								
Supportiveness	03	-04	21*	18†	04	07	-10	05	22†	12*	24*	27†	–	–	–	–								
Favoritism	-03	02	-12	-15†	-02	03	10	-01	-13	-12*	-22*	-18†	-83†	-76†	-64†	-82†	–	–	–	–				
Encourages Competition	11	-01	-04	01	30†	-02	25*	03	11	04	03	01	-41†	-35†	-55†	-14*	46†	34†	50†	22†	–	–	–	–
DEPARTMENT																								
Trustworthy	14	01	26*	27†	21*	06	-12	12*	25†	26†	28*	25†	27†	51†	71†	61†	-42†	-45	-59	-51†	-18	-24	-57	07
Exploitive	-10	02	-08	-13*	01	07	13	00	-14	-12*	-13	-01	-19*	-47†	-63†	-51†	39	57	71	56†	15	33	56	02
Competitive	18*	-02	-09	-11*	-01	04	27*	04	18*	07	-05	04	00	-09	-40†	-04	16	13*	45†	12*	36†	44†	40†	43†
OTHER DEPARTMENT																								
Reliable	-17*	-81†	28*	–	-02	06	-02	–	12	08	32†	–	26†	21†	51†	–	-34†	-23†	-49†	–	-18*	-03	-44†	–
Parochial	13	15†	04	–	02	08	03	–	01	02	-01	–	-11	-28†	-48†	–	15	42†	50†	–	-11	15†	51†	–

	DEPARTMENT												OTHER DEPARTMENT							
	Trustworthy				Exploitive				Competitive				Reliable				Parochial			
DEPARTMENT	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E
Trustworthy	–	–	–	–																
Exploitive	-68†	-72†	-67†	-71†	–	–	–	–												
Competitive	-40†	-34†	-34†	-14*	44†	38†	55†	17†	–	–	–	–								
OTHER DEPARTMENT																				
Reliable	40†	28†	61†	–	-48†	-26†	-51†	–	-18†	-03	-32†	–	–	–	–	–				
Parochial	-22†	-22†	-49†	–	45†	43†	74†	–	16	08	43	–	-67	-67	-50	–	–	–	–	–

*$p \leq .05$ †$p \leq .01$

NOTE: Decimals in coefficients removed.

Key: U1 = University-Time1 (n = 99); U2 = University-Time2 (n = 234); A = Public Accounting Firm (n = 62); E = Aerospace Engineering Company (n = 223).

Table 5

Intercorrelations Between Survey Scales and Attitude Scales

	Satisfaction with Supervisor				Satisfaction with Coworkers				General Job Satisfaction				Job Involvement				Organizational Commitment			
SUPERVISOR	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E	U1	U2	A	E
Supportiveness	80†	84†	62†	86†	33†	36†	50†	43†	57†	51†	40†	44†	01	12*	28*	08	33†	35†	50†	31†
Favoritism	-70	-68†	-39†	-73†	-36†	-28†	-36†	-40†	-50†	-47†	-17	-44†	00	-11*	-18	-06	-36†	-30†	-27*	-28†
Encourages Competition	37†	-27†	-37†	-12	-18*	-24†	-28*	-05	-16	-17†	-27*	-03	09	-01	-18	05	-02	-14*	-24*	-02
DEPARTMENT																				
Trustworthy	31†	35†	46†	50†	58†	52†	52†	61†	40†	44†	38†	30†	20*	-01	17	00	45†	33†	47†	26†
Exploitive	-19*	-33†	-31†	-43†	-52†	-37†	-31†	-44†	-24†	-44†	-17	-27†	-16	00	-07	02	-31†	-26†	-17	-21†
Competitive	-08	-06	-18	-02	-01	-11*	-10	-10	-01	-06	-22*	09	03	07	-09	12*	-02	-02	-15	01
OTHER DEPARTMENT																				
Reliable	26†	11*	23*	–	39†	28†	35†	–	23†	16†	22†	–	27†	07	10	–	44†	29†	31†	–
Parochial	-06	12*	-11	–	-19*	-20†	-06	–	-06	-12*	06	–	-17*	-02	-06	–	-20*	-18†	-01	–
INTERDEPENDENCE																				
Depend on Others	-04	00	26*	11*	16	01	20*	16†	04	-01	09	-03	03	15†	17	03	-05	13*	31†	05
Others' Dependence	-02	06	-03	-01	-07	03	07	12*	14	04	-12	07	03	15†	16	29†	05	22†	06	23†
Reciprocal Dependence	13	11*	41†	21†	21*	09	27*	21†	29†	16†	25*	22†	-02	18†	23*	29†	11	32†	29*	30†

*$p \leq .05$ †$p \leq .01$

Key: U1 = University-Time1 (n = 99); U2 = University-Time2 (n = 234); A = Public Accounting Firm (n = 62); E = Aerospace Engineering Company (n = 223).

Table 6

Scale Mean Differences Across Organization

	U1[a]	U2	A	E	SS	df	F	eta
Supervisor								
Supportiveness	4.10	3.74	3.74	3.60	17.02	3	9.47†	.22
Error					334.40	558		
Favoritism	2.11	2.74	3.48	2.69	72.61	3	28.12†	.36
Error					481.20	559		
Encourages Competition	2.66	2.70	3.01	2.84	6.67	3	3.94†	.14
Error					314.37	557		
Department								
Trustworthy	3.98	3.86	3.94	3.71	6.09	3	5.66†	.17
Error					216.98	605		
Exploitive	3.04	2.70	2.91	2.69	10.97	3	5.75†	.17
Error					382.44	601		
Competitive	3.16	2.75	3.30	2.88	21.43	3	13.21†	.25
Error					325.95	603		
Other Department								
Reliable	3.60	3.46	3.62		1.84	2	3.42*	.14
Error					97.86	368		
Parochial	3.10	3.12	3.08		.10	2	ns	--
Error					167.14	364		
Task Interdependence								
Depend on Others	4.12[b]	3.50	4.11	3.61	39.12	3	32.82†	.37
Error					243.11	612		
Others Dependence	4.29	4.10	3.91	3.83	17.50	3	16.55†	.27
Error					216.38	614		
Reciprocal Interdependence	3.96	3.66	4.08	3.72	13.15	3	11.07†	.23
Error					241.67	610		

*$p \leq .05$. †$p \leq .01$.

[a] U1 = University-Time1, n = 99; U2 = University-Time2, n = 234; Public Accounting Firm, n = 62; Aerospace Engineering Company, n = 223.

[b] Five-point Likert-type Disagree-Agree scales.

Table 7

Differences in Task Interdependence and Social Relations Between Non-Supervisors and Supervisors

	Non-Supervisors	Supervisors	SS	df	F	eta
University-Time 1[a]						
Supportiveness	--	4.10	--	--	--	--
Favoritism	--	2.11	--	--	--	--
Encourages Competition	--	2.66	--	--	--	--
Trustworthy	--	3.98	--	--	--	--
Exploitive	--	3.04	--	--	--	--
Competitive	--	3.16	--	--	--	--
Reliable	--	3.60	--	--	--	--
Parochial	--	3.10	--	--	--	--
Depend on Others	--	4.12[f]	--	--	--	--
Others' Dependence	--	4.29	--	--	--	--
Reciprocal Interdependence	--	3.96	--	--	--	--
Supportiveness	3.74	--	--		--	--
Favoritism	2.74	--	--		--	--
Encourages Competition	2.70	--	--		--	--
Trustworthy	3.83	3.98	.80	1	ns	--
Error			82.90	230		
Exploitive	2.75	2.63	.26	1	ns	--
Error			145.05	230		
Competitive	2.70	2.93	2.02	1	3.87*	.13
Error			119.41	229		
Reliable	3.44	3.56	.56	1	ns	--
Error			63.64	217		
Parochial	3.10	3.21	.42	1	ns	--
Error			107.00	218		
University-Time 2[b]						
Depend on Others	3.37	4.97	14.00	1	32.47†	.35
Error			99.59	231		
Others' Dependence	4.05	4.31	2.57	1	8.53†	.19
Error			69.41	232		
Reciprocal Interdependence	3.59	3.82	3.82	1	8.80†	.19
Error			99.72	230		

Table continues . . .

Table 7 (continued)

	Non-Supervisors	Supervisors	SS	df	F	eta
Accounting Firm [c]						
Supportiveness	3.75	3.72	.02	1	ns	--
Error			14.90	59		
Favoritism	3.48	3.48	.00	1	ns	--
Error			32.04	60		
Encourages Competition	3.03	2.97	.03	1	ns	--
Error			32.21	60		
Trustworthy	3.93	3.96	.01	1	ns	--
Error			12.23	59		
Exploitive	2.88	3.01	.22	1	ns	--
Error			30.20	59		
Competitive	3.28	3.32	.02	1	ns	--
Error			30.67	59		
Reliable	3.58	3.72	.21	1	ns	--
Error			10.73	56		
Parochial	3.08	3.08	.00	1	ns	--
Error			19.96	56		
Depend on Others	4.08	4.17 [d]	.09	1	ns	--
Error			15.25	60		
Others' Dependence	3.84	4.09	.81	1	2.72	.21
Error			17.84	60		
Reciprocal Interdependence	4.09	4.06	.02	1	ns	--
Error			19.08	60		
Aerospace Engineering Company [c]						
Supportiveness	3.60	--	--	--	--	--
Favoritism	2.69	--	--	--	--	--
Encourages Competition	2.84	--	--	--	--	--
Trustworthy	3.71	--	--	--	--	--
Exploitive	2.69	--	--	--	--	--
Competitive	2.88	--	--	--	--	--
Depend on Others	3.61	--	--	--	--	--
Others' Dependence	3.83	--	--	--	--	--
Reciprocal Interdependence	3.72	--	--	--	--	--

*$p \leq .05$. †$p \leq .01$.

[a] $n = 99$. [b] $n = 234$. [c] $n = 62$. [d] Seniors and Managers combined. [e] $n = 223$.

[f] Five-point Likert-type Disagree-Agree scales.