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AN EXPLORATION OF NETWORK PREDICTORS OF PERCEIVED SOCIAL SUPPORT IN THE WORKPLACE

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ABSTRACT

AN EXPLORATION OF NETWORK PREDICTORS OF SOCIAL SUPPORT IN THE WORKPLACE

By

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For more than a decade *perceived* social support has been linked with reduced job stress and burnout, greater job satisfaction, positive adjustment to new situations, and general psychological well-being. Unfortunately, the origins of perceptions of support remain elusive.

This research explored the impact of the work network characteristics of 80 employees of a nonprofit blood center on their perceptions of social support in the workplace. Thirty-four network variables, ranging from size and frequency of contact to multiplexity and strength of the network links, were examined in relation to perceived informational, material, and emotional support. The strength of emotional support ties in general, and the strength of emotional support ties with supervisors and upper management in particular, were the only positive predictors of perceived support functions. The number of face-to-face links and the number of biplex relationships emerged as negative predictors of perceived support functions.

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CHAPTER I: THEORY AND LITERATURE REVIEW

There is general consensus among researchers that social support has desirable effects on the quality of life; social interaction contributes to a sense of general well-being and ensures that many basic human needs are met (Brownell & Shumaker, 1984).

For more than a decade, research results have linked social support with a variety of positive outcomes both within and outside the workplace. Social support has been associated with reduced job stress and burnout, greater job satisfaction (see Ray, 1987 for a review), positive adjustment to new situations (Sarason, Shearin, Pierce, & Sarason, 1987), less depression and anxiety, better physical health, and general psychological well-being (Thoits, 1982; Cohen & Wills, 1985; George & Gwyther, 1986; Baille, Norbeck, & Barnes, 1988).

Regardless of the context in which it is studied, the benefits from social support have been demonstrated in a variety of ways. For example, researchers have related positive outcomes to social network characteristics such as size, density, and composition, to reports of high social interaction and/or instrumental assistance

(Cohen & Wills, 1985), and most frequently, to perceptions of availablity and/or satisfaction with social support (Cutrona, 1986; Vaux & Harrison, 1985). Indeed, a recurring theme in the support literature is the notion that the recipient's *perception* about support availability/quality is the most crucial link to positive health outcomes.

Unfortunately, the properties in the environment that promote the perception that support is available have remained largely unidentified. The purpose of this thesis is to examine and briefly summarize previous research on social support perception and to identify and explore its objective antecedents among health agency workers. First, theoretical explanations of the importance of social support as well as its functions are briefly outlined. Second, arguments that perceived support is the most important component of the support construct are presented. Third, origins of perceived support are explored and relevant research on perception of support reviewed. Fourth, the concept of perceived of support in the work context is contrasted with that in the social context. Finally, the implications for studying perceived support in the workplace are discussed and a research agenda proposed.

Social Support

Although social support can be provided in a number of forms: information, reassurance/advice, actual

material and/or instrumental assistance, or any combination of these three (House & Cottington, 1986), it clearly cannot be provided without human interaction. One of the accepted explanations for social support's link with psychological well-being originates in symbolic interactionism and Durkhemian anomie theory (Thoits, 1982). The social interactionist tradition suggests that individuals come to know themselves through contact and communication with others. Specifically, Mead (1934) argued that both identity and self-evaluation derive from social feedback. Complementing Mead's position, Durkheim (1951) posited that the absence of social integration causes alienation and despair.

Central to both of these sociological traditions is the notion that social relationships provide individuals with definition for themselves and their environments (Thoits, 1982) and enhance "...well-being by facilitating the development of feelings of predictability and stability..." (Cohen & Wills, 1985, p.351). The social support literature is replete with assertions that the positive outcomes associated with social support are in fact due to reducing uncertainty and restoring or maintaining a perception of individual control (Albrecht & Adelman, 1987; Fisher, 1985; Ford, 1985; House & Cottington, 1986; Sutton & Kahn, 1987).

From contact with others, individuals gain opportunities for information that promote understanding of causes and effects (Albrecht & Adelman, 1987). Supportive communication

contributes to that understanding by helping people to be more adaptive in uncertain circumstances (Berger, 1986; Albrecht & Adelman, 1987). According to Albrecht and Adelman (1987) social support reduces uncertainty by assisting people to shift their perspectives regarding an event and/or to reduce the importance of unattainable goals; by supplying information that allows more accurate attributions to be inferred; by allowing people to ventilate emotions and thereby process events differently; by providing feedback that reassures and confirms acceptance and worth; or by enhancing control through tangible assistance. These very specific functions are not incompatible with broader functional categories used by other researchers (e.g., House & Cottington, 1986), and can, in fact, be collapsed into the frequently used functional categories of informational, material, and emotional support.

Perceived support. Researchers in attempting to capture the essence of beneficial social integration have measured types and frequency of social interactions, numbers and types of persons in an individual's social network, frequency of specific acts of instrumental support, and global perceptions that support is available. At various times, each of these approaches to support--social networks, social interactions, instrumental assistance, perception of support--has been labeled social support and each has been examined in

association with various measures of well-being. The most consistent and significant link with positive outcomes has been perceived support (Cutrona, 1986).

In part to explain the primacy of perceived support, several researchers have posited conceptual distinctions among the facets of social support. Barerra (1981) and Shinn, Lehmann, and Wong (1984) have emphasized the differences between social interaction and social support. They argue that social interactions are not necessarily positive; rather, they retain an inherent potential to be stressful instead of supportive. Hence equating social interaction to social support is a conceptual error.

Echoing and expanding on this position, Vaux and Harrison (1985) considered social support a metaconstruct incorporating three important components: social networks, social interactions, and perception of support. Specifically, they argue that the existence of network links provides opportunities for the types of interactions that may lead a person to perceive support. It is the latter, (feeling supported--i.e., loved, cared for, esteemed, capable) that is the ultimate factor in determining well-being. Network characteristics and and the quality of the interactions are antecedents to the perception of support.

The importance of perceived support is evident throughout the support literature. Numerous investigators assert implicitly or explicitly by their selected

definitions and/or measurement choices that if an act is not perceived as supportive, it does not constitute support (Albrecht & Adelman, 1987). Further evidence of this viewpoint is expressed by Lieberman (1982): "...the most cogent relationship between social support and stress mitigation can be found in the perception by individuals that they have a reliable and acccessible social network--regardless of whether this network is used" (p. 781).

Lieberman's sentiment is reflected in a variety of literatures. In the workplace, researchers studying occupational stresses have most frequently examined the ameliorating influences of social support as measured by the perceived availability of support in the work environment (Jayaratne, Himle, & Chess, 1988). Similarly, in several studies exploring the physical and psychological ramifications of providing in-home care for elderly impaired relatives, it has been perceived social support--in contrast to acts of instrumental support or frequency of social interaction--that has had the greatest impact on caregiver well-being (Israel & Antonucci, 1987; Given, Vredevoogd, Given, & Stommel, 1989). Clearly, of the many manifestations of social support, the perception that support exists emerges in the literature as the most important component of this complex construct (Cutrona, 1986; Vaux & Harrison, 1985; Ford, 1985; Wortman, 1984).

Ironically, in spite of the interest in and acknowlegment of perceived support as an important variable, little is known about the behaviors and characteristics in the environment that forge the perception that support is available (Ford, 1985; Cohen & Wills, 1985; Cutrona, 1986). Numerous researchers have proposed that identifying the antecedents to perceptions of support could have extremely valuable applications. For example, Jayaratne et al. (1988) suggested that organizations "may need to make concerted efforts toward getting workers to perceive the work environment as supportive" (p.201) as a step toward helping to reduce job stress and burnout.

Similarly, Cutrona (1986) argued that searching for the objective determinants that enhance a sense of support is important both theoretically and clinically--the former to advance understanding of the "mechanisms through which support serves its protective function" and the latter to enhance opportunities to "design effective interventions" (p.349). In addition, Wortman (1984) suggested that interest in social support has been enthusiastic in part because the possibility of modifying social relationships holds more potential than changing individuals' exposure to stress, their coping styles, or their personalities.

Clarifying perceived support. Before antecedents of perceived support can be explored, a brief clarification of what is meant by the term is essential. Virtually all of the social support literature is based on self-reported data in one form or another (Albrecht & Adelman, 1987). Even "objective" measures such as the number of network links have relied on participants to recall and generate a list of the most important people in their social worlds or to estimate frequency of contact for persons listed on an organizational roster. To a certain extent then, all social support measures are perceptual; it becomes a matter of degree.

A reasonable distinction is that there is a fundamental difference between measures that ask for global feelings of support (e.g, items such as "to what extent do you feel that you have someone to rely on in an emergency"), and measures that require estimates of frequency of contacts, interactions, or instances of certain types of assistance (e.g.,"how many hours a week do you have contact with person X?"). The latter examples have specific behavioral anchors in an individual's memory from which to make an estimate; the former is based on the individual's holistic sense that help is generally available. Essentially, global perceptions of support are based not only on instances of current/recent supportive acts, but also on support received in the past, and the support one expects to be

available in the future.

Origins of Perceptions of Support

Wortman (1984) pointed out that there may be numerous causes of varying levels of perceived support ranging from personality traits (such as social skills or locus of control) to network characteristics. In spite of the inherent difficulties in studying support, she emphasized the importance of examining the relationships among the various support factors since they "may be critical in developing effective interventions" (p.2355).

Social networks are a logical starting point in the search for objective determinants of perception because network properties (size, density, frequency of contact, etc.) are quantifiable manifestations of social relationships (Unger and Wandersman, 1985; Albrecht and Adelman, 1987). They describe the context in which social interactions and supportive communication take place. Vaux and Harrison (1985) argued that certain types or characteristics of relationships "...constitute social resources. Like a savings account, an individual can draw upon them (for affection, advice, assistance, etc.) in times of need or simply gain comfort from their existence" (p.246). Network properties may well be important indicators of the savings account's balance.

The number of persons in a network, the multiplexity of the relationships, the frequency of contacts all

impact the flow and adequacy of communication, which in turn, should impact perceptions of support (Cutrona, 1986). These variables (as well as others) are an attractive staring point in the search for precursors. If certain combinations of these network characteristics contribute to feelings of support, there is great promise for structural interventions to improve well-being--particularly in the workplace. Unfortunately the research attempting to link these quantitative properties to perceived support has produced somewhat disappointing results.

Research on perceived support. Early work in the 1970s examining the relationship between network variables and perceptions of support produced some contradictory results. Large, dense (interconnected) networks where members had frequent contact increased expectations of support in one study (e.g., Wellman, 1979), but dense networks lowered satisfaction with support in another (e.g., Hirsch, 1980). One of the problems cited with this body of research was that no attempt had been made to differentiate the links between network variables and specific types of perceived support (emotional, material, and informational) (Cutrona, 1986).

Cutrona (1986) rectified the above shortcoming when conducting separate studies exploring the relationship between network variables and perceived support among young mothers and the elderly. Network size, frequency

of contact, and proportion of kin to nonkin were related to six different provisions of social support. The the data were moderately consistent with her hypotheses, accounting for approximately 30% of the variance. Similarly, Vaux and Harrison (1985) were able to explain about a third of the variance in their study examining numerous network variables (multiplexity, complexity, density, etc.) and satisfaction with support among 300 mature women. More recently, Sarason et al. (1987) found little connection between network variables (size, density, frequency of contact, and proportion of kin, nonkin, and confidants) and perceptions of support among college students.

There are several potential explanations for these results. The most obvious is that the relationship between network variables and perceptions of support is not very strong. However, it is also possible that the context, the network variables selected, and measures employed made the relationship harder to discern in these studies.

All of the previously mentioned research is concerned with individuals' social networks. This type of network data is typically collected by asking people to name persons in their social network. Attempts are generally made to trigger recall by asking people whom they might go to for certain types of support. Participants are then asked to estimate how often they are in contact

with those people and, if density is a variable, how often (or whether) the people they named see each other. The researcher is ususally unable to corroborate the information since the network boundary is known only to the participant. Under these conditions, it is possible for participants to omit persons in their networks that are essential to their perceptions of support.

Directly related to this method of identifying network members are the resulting network variables (size, frequency, proprtion of kin to nonkin) which may prove to be inadequate to capture perceptions of available support. For example, inaccurate recall may compromise both measures of size and proportion of friends to family.

Nevertheless, this body of research has produced some noteworthy results that provide guidance for future research efforts. Cutrona found, for example, that precursors are not necessarily the same for all people. The quantitative network variables (i.e., frequency of contact with kin and number of network members) were better predictors of perceived support for the elderly than they were for young mothers all of whom had a stable heterosexual relationship. These mothers also had much less variance among the network variables than did the elderly sample. Consequently, Cutrona attributed the variance among the mothers' perceived support scores to differences in their primary supportive relationships.

These findings underscore the importance of considering both context and relational quality indicators in selecting precursors of perception of support.

Measures such as size and frequency of interaction are baseline measures that only begin to tap the potential quality of the network. To the extent that perceptions are formed through the quality and not the quantity of relationships, network variables should be sought that are implicit indicators of the quality of the support network as well.

Perceptions of Support in the Workplace

The work environment differs from the social environment as a context in which to study antecedents of perceived support in several important ways. From a measurement perspective, exploring perceptions of support in an organizational context provides a specific focus for participants that is lacking in the study of social networks. First, by selecting a relatively small organization (150-200), the same finite group of people comprises the resource from which individual networks can be formed. Second, network characteristics and perceptions of support are contained within the same closed environment; i.e., when a partcipant is asked about perceived support within the workplace, the boundaries are more distinct than in the social context, and it is unlikely that sources of support from outside the workplace will be incorporated into the perception

measures. Third, a roster of organizational members can be supplied to each participant to ensure that no support sources are omitted on the network measures.

Perhaps of even more significance is the impact of the work environment on the potential meaning of the network indicators such as network size and frequency of contact. As mentioned earlier, social interactions have the potential to be both positive and negative. In the social context, Rook (1984) noted that negative interactions are not limited to people one dislikes, but occur among friends and family as well. Her research suggests that the negative side of interaction is often more salient than the positive side and only the "comforting" aspect of social interactions is related to well-being.

Social exchange theorists have noted that most people select ties that are predominantly rewarding (Rook, 1984). Such may be the case in many social situations. In many instances, negative interactions can be limited and/or avoided so that overall frequency measures may be a reasonable indicator of positive interactions and hence a predictor of perceived support. Indeed, in a study of 203 caregivers of the elderly impaired, Lyles, King, Given, and Given (1989) found frequency of telephone calls from family and friends to be the most significant predictor of perceived support. This may be in part because it is easier to extricate oneself from unpleasant/intrusive social telephone

conversations than almost any other type of social interaction; reports of high frequency of telephone contact may therefore implicitly indicate predominantly positive interaction.

The ability to limit negative social interaction implies the luxury of choice--a luxury that is somewhat elusive in the workplace. When coworkers become irritating, one generally still has to spend the day with them. Miller, Zook, Lyles, and Ellis (1988) found in their study of health care workers that interpersonal relationships with coworkers were a significant cause of workplace stress in spite of the fact that coworkers were also cited an important source of emotional support.

Implications for the Workplace

Clearly, if antecedents to perceived support are to be successfully identified, the variables studied must be selected with both the context of the workplace and quality of relationship in mind. Four potentially important network variables were not considered in the previously discussed research that may prove to be critical to perception of support in the workplace: 1) the frequency of face-to-face contact; 2) the proportion of people named in the support network/s compared to the complete network; 3) the number and sources of multiplex (the number of different types of support provided by the same person) support links; and 4) the strength of the support links.

Face-to-face contact. An effective network must be of sufficient size so the that the absence of a few members does not leave an individual without resources. Likewise, a minimum amount of contact is necessary to ensure that needs are met--yet, as previously discussed, frequency of contact and number of network links may be inadequate to capture perception of support in the workplace.

There is some evidence that in a work environment face-to-face contact may be a better indicator of accessibility to support than mere frequency of contact. When people *see* people, they can ask for assistance and/or offer assistance spontaneously. In addition, organizational research has shown that when communication messages are complex, and uncertainty high, face-to-face contact enables more successful information sharing (Daft & Lengel, 1983).

To some degree, face-to-face contact in the workplace may be more discretionary than mere general contact. Although some face-to-face contact is prescribed through job descriptions and the work environment, face-to-face encounters may be sought when complex information needs to be exchanged or when help is needed. This is consistent with Kirmeyer & Lin (1987) who argued that face-to-face contact is indicative of a more personal relationship and found that perceived support among police officers was positively associated with face-to-face interaction with both peers and superiors.

Support links. Size and frequency measures still fail to take into account negative interactions that may be dictated by job description alone. In reference to the social context, Cutrona (1986) suggested that the size of the support network in comparison to the total network may be a better indicator of perception than network size alone. It is quite possible that people who come into contact with thirty people each day, of whom only one or two provides any kind of support, will have very different perceptions of support than people who see only seven people every day but associate some kind of support with each of them. This may be especially true in the workplace, but it may be equally important to consider the types of support resources provided as well.

Support is provided in the forms of information, material aid, and/or emotional reassurance (House & Cottington, 1986). The availabilty of each of these support types may signal varying levels of relationships in the workplace. Informational support requires the least connection between people. Researchers have often noted that access to information, goods, and services is obtained through weak ties; i.e., individuals who are known through the specific roles they fill such as family physicians, clergy, friends of friends (Granovetter, 1983). In the workplace as in the social context, informational support can be obtained with minimal interaction, interdependence, and reciprocal

obligation.

In contrast, emotional support lies on the opposite end of the spectrum. Implicit in emotional support is the notion that there has been some level of disclosure of personal information; it is difficult to offer reassurance to people, for example, unless their vulnerablities have been made known. Providing emotional support indicates a stronger tie since a certain degree of relational history is necessary to predict what is specifically rewarding and helpful to an individual (Miller & Steinberg, 1975).

Material aid may span the continuum between emotional and informational support. Material support can result from either a visually apparent need for help or from understanding/knowing someone's situation. The former instance requires no relationship; the latter requires some personal disclosure.

Obviously, it is possible to have differing networks of support types in the workplace. Workers may have several sources for informational support, but none for material aid or emotional support. Consequently, considering the numbers of persons in each support subnetwork may be a better determinant of perceived support than looking at the support network as a whole.

Mulitplexity and strength. Multiplexity and link strength are network constructs that go beyond merely "determining the presence or absence of a relation between a pair of people" (Monge & Eisenberg, 1987,

p.16) and attempt to tap the extent to which relationship exists. An added advantage in distinguishing among support resources is the opportunity to consider the overlapping quality of the support networks. If various types of support are provided in combination by the same person--the link is said to be multiplex.

Specifically, multiplex ties indicate that pairs of participants are linked in more than one way (Tichy, 1981). Not only do mulitplex support ties imply communication on several levels, but they also indicate more enduring, intimate, and influential relationships (Bach & Bullis, 1986). Individuals who receive informational, material, and emotional support from another party can be assumed to have a more developed relationship than with someone from whom only information is obtained. Hence the number of multiplex ties may also provide additional insight into perceived support.

The strength of a link reflects "the amount of information, affect, influence, or goods and services" (Monge & Eisenberg, 1987, p.16) that flows between people. It is essentially "a numerical description of the amount of relationship" (Monge & Contractor, 1988, p. 108) and has been measured in a variety of ways including the amount of interaction, the frequency and or duration of contact, or by weighting the value/ importance of the link (Monge & Eisenberg, 1987). Assessing the value of the links in the various support

networks may be particularly useful. There can be a great difference between having ten people who occasionally give emotional support and having ten people who can *always* be counted on for reassurance. The strength of informational, material, and emotional links may be a key antecedent to perceived support.

Sources of multiplexity and link strength. In the social context, reseachers often distinguish between family and friends as sources of social support because the relational quality between the two groups is often different. Similarly, in the workplace, the relational qualities between superiors and coworkers are often distinct and their differential impact on perceptions of support worthy of examination as well. Ford (1985) suggested that these sources of support as well as the types of support provided by them influence perceptions of supportive behaviors. House and Cottington (1986) noted that the relative importance of supervisors over coworkers as support providers may vary according to to occupational conditions. Other researchers have found that support sources have impact on different facets of job satisfaction (Seers, McGee, Serey, & Graen, 1983). This cumulative evidence suggests that perceptions of support in the workplace may vary based on the position of the provider and the work situation. It is possible that in some instances perceived support may be determined more by the link strength and multiplexity

with supervisors than with coworkers because a stronger relationship with a supervisor may produce greater feelings of security/reassurance in the work environment.

A Research Agenda

The previous discussion suggests a research program in the workplace designed to explore the relationship between the more quantifiable indicators of relational quality and perceptions of emotional, material, and informational support. Several specific research questions follow:

Research question #1: How does the size of the support network compared to the complete network impact perceived support in the workplace? Is size of specific support networks a better predictor than the general support network?

Research question #2: Is the frequency of face-to-face contact a better indicator of perception of support than mere frequency of contact?

Research question #3: How does multiplexity influence perception of support? Are multiplex ties with supervisors more important than with peers in predicting perceived support?

Research question #4: How does the strength of the various support networks influence perceived support? Is support strength with supervisors more important than with peers in predicting perceived support?

CHAPTER II: METHODS

This chapter explains the methods used to investigate the impact of network characteristics on perceptions of support in a work environment. First, the data collection procedures and the sample from which the data were gathered are described. Next, the operationalization of the variables is explicated. Finally, the methods used to analyze the data are outlined.

Sample and Procedures

Data for this study were collected from a nonprofit blood center and its two substations that supply blood and blood products to over sixty hospitals in a designated region of the midwest. The organization employs 176 paid personnel who represent a wide range of employee groups including clerical, administrative, professional-technical, and maintenance. Cooperation and approval for this study were obtained from the executive director, human resources, department heads, general staff, and union representatives. A roster of employees and their positions was provided by the human resources department.

Because network analysis dictates that the researcher ask who talks to whom, identification numbers corresponding to each employee were assigned to the questionnaires and then placed in envelopes with a removable name label on the outside. The envelopes were distributed by the researchers either directly to each employee or to each department in the regional headquarters building. The director of human resources sent appropriate questionnaires to the subcenter locations for distribution.

Employees were permitted and encouraged to complete their questionnaires during work time. It was emphasized both verbally and in a cover letter accompanying each survey that participation was voluntary and responses confidential. The cover letter also explained procedures for turning in completed questionnaires including removing the name label from the envelope. Surveys could be either turned in directly to researchers who remained on the premises for two days, mailed in the self-addressed envelope provided, or returned to one of several slotted boxes placed throughout the building.

The majority of the questionnaires was returned within two days of distribution; the researchers sent follow-up reminders to employees and department heads periodically and continued to check the slotted boxes weekly for the following month.

A total of eighty-six employee questionnaires were

returned for a response rate of forty-nine percent; six contained incomplete data. Each of the blood region's locations and all of its departments were represented in the sample of eighty used in this study.

Instrumentation

Network data. The network quesitionnaire consisted of a roster of all employees, grouped according to department and location, who worked for the regional blood center. Each name was followed by six columns. Participants were first asked to estimate the number of total work contact per week they had with each person listed (zero to forty hours); these hours included general meetings, telephone contact, working together. The next column asked for an estimate of the number of face-to-face contact hours spent each week with the individual; these hours were to reflect the amount of time spent talking with someone in person when the conversation primarily involved only the two of them.

The remaining four columns were concerned with the support provided by the individual. Participants were asked in column three whether they considered each employee listed to be part of their work support network (yes or no), and if so, how often on a scale of one to seven (1=never; 7=always) the person provided informational, material, or emotional support (columns four through six). Informational support was defined as providing valuable personal or work information. Material/instrumental

support was defined in terms of assisting with work-related tasks, exchanging work assignments or days off, and/or lending small amounts of money if needed. Finally, emotional support included listening to problems, offering reassurance, and generally bolstering feelings of self-esteem in the respondent.

Network variables. Each respondent's network data were entered as a separate data set from which network variables were calculated using SPSS-PC. The total numbers of links in the general work, face-to-face, support, informational support, material support, and emotional support networks were calculated as were the number of contact and face-to-face hours. These aggregate numbers were entered as network variables for each participant.

The proportion of the total support network to the general work network as well as the proportions of each functional support network (material, informational, emotional) to the general work network were also computed.

Multiplexity was operationalized as having more than one support function provided by an individual (a maximum of three is possible if an individual provided informational, material, and emotional support). A biplex relationship is one in which two support functions are provided; a triplex relationship is one in which three support relationships are present. The total numbers of each participant's biplex and

triplex relationships were computed to obtain values for those variables.

The strength of a support tie was operationalized by the multiplying the total number of hours of contact by the frequency rating given to a support function. For example, if a respondent had 15 contact hours per week with an individual and rated informational support provided by that person as often (5), material support as seldom (3), and emotional support as very seldom (2), the corresponding strength calculations would be 75, 45, 30.

The sources of support were also calculated. Respondents' identification numbers were used to code all employees into supervisory categories: upper management, supervisory, professional, and other. These categories were then used to determine the number of multiplex links and the support strength emanating from each source.

Perceived Support

Perception of social support was assessed by using a modification of a scale developed by Edwards (1980) specifically for the workplace. The original instrument contained 27 items that covered informational, structural, and emotional support. For this study, the structural items were replaced with items that assessed the availability of general material support. The final instrument contained 22 items (see Table 1) to which participants responded using a five-point Likert-type scale (1=never; 5=always).

Table 1: Perceived Social Support Scale

Please answer as honestly as possible using the following five-point scale:

1	2	3	4	5
Never	Seldom	Occasionally	Usually	Always

How often is there **SOMEONE** at work who:

1. Explains how to get things done efficiently?
2. Is willing to listen to you?
3. Explains the politics of your position?
4. Will inform you of policies and decisions that may affect you?
5. Is fair in his/her assessment of you?
6. Will help you with your job if you get overloaded?
7. Informs you about important, but unstated aspects of your position?
8. Has faith in your abilities?
9. Is concerned that you reach your goals?
10. Will loan you five dollars if you need it?
11. Trusts you and whom you trust?
12. Informs you of potentially negative situations which may adversely affect you?
13. Encourages you to seek opportunites for growth?
14. Gives you advice if you need it?
15. Gives you helpful information about co-workers and/or supervisors?
16. Will switch work schedules (vacation times) with you if you need special time off?
17. Talks to you if you are confused about things?
18. Will "pitch in" to get the job done?
19. Informs you of potential resources?
20. Informs you of the unwritten laws of the work environment.
21. Would watch your work station if you had to leave it for a few minutes?
22. Who would come over and ask if you could use some help if you looked overwhelmed?

Analysis

This research required two types of analyses. First, the structural qualities of the perceived support measure needed to be evaluated. Confirmatory factor analysis (Hunter & Gerbing, 1982) was used to confirm the factor structure of the scale. The confirmatory factor analysis subroutine of the PACKAGE computer program (Hunter & Lim, 1987) allows a priori specification of the factor structures. Three criteria are then used to assess the dimensionality of the scales: (1) homogeneity of item content, (2) internal consistency, (3) parallelism with outside variables (Hunter, 1980). PACKAGE analyzes measurement models in terms of the latter two criteria; items that are inconsistent or nonparallel can be removed from scales and reanalyzed. This iterative process eventually produces measures that are unidimensional and have low measurement error.

The second analytical step in this study was the exploration of the relationships between the network variables and perceived support. Scatterplots, correlation matrices, and a series of regression equations were used to explore the research questions presented.

CHAPTER III: RESULTS

This chapter presents the results of research exploring the relationship between network characteristics and perceptions of support in the workplace. First, the results of confirmatory factor analysis on the perceived support scale are reported. Second, the formulation and outcomes of the preliminary regression equations are discussed for each dependent variable. Third, summary results for each dependent variable are presented, revised equations are discussed, and the major contributors to each functional type of support reported. Finally, summary results for each research question are presented.

Confirmatory Factor Analysis

Confirmatory factor analysis was executed on the perceived support scale using the previously discussed criteria of Hunter and Gerbing (1982). The support scale (Edwards, 1980) was originally designed to capture three dimensions of perceived support: informational, structural, and emotional. For the purpose of this study, structural support items were replaced by material support items. A three-factor

solution was found for the scale. Due to lack of internal consistency, three items were deleted from the informational support factor resulting in a five-item solution (alpha = .89). For similar reasons, two items were lost from the material support factor (alpha = .81) and three from the emotional support factor (alpha = .82) producing four and five-item solutions respectively.

Not surprisingly, these dimensions of support are correlated with one another (average correlation among the factors = .61). However, each of the final factors met the criteria for unidimensionality (i.e., homogeneity of item content, internal consistency, and parallelism) which suggests that although they are strongly related, they are distinct constructs. Furthermore, the combination of items comprising each final support factor failed to produce an internally consistent single factor. Item content and factor loadings are presented in Table 2.

Regression Analysis

As a consequence of the confirmatory factor analyses, perceived informational, material, and emotional support were the dependent variables in a series of exploratory regression equations. Thirty-four network variables comprised the pool of independent variables and are presented in Figure 1. The correlation matrix of the dependent and independent variables appears in Table 3.

Table 2: Scale Items and Factor Loadings

SCALE: Perceived Informational Support (Alpha = .89)	
How often is there someone at work who...	
1. Explains the politics of your position?	.70
2. Informs you about important, but unstated aspects of your position?	.85
3. Informs you of potentially negative situations which may adversely affect you?	.76
4. Informs you of potential resources?	.77
5. Informs you of the unwritten laws of the work environment.	.82
Scale: Perceived Material Support (Alpha = .81)	
How often is there someone at work who...	
1. Will help you with your job if you get overloaded?	.71
2. Will switch work schedules (vacation times) with you if you need special time off?	.60
3. Would watch your work station if you had to leave it for a few minutes?	.60
4. Would come over and ask if you could use some help if you looked overwhelmed?	.96
Scale: Perceived Emotional Support (Alpha = .82)	
How often is there someone at work who...	
1. Is willing to listen to you?	.76
2. Is fair in his/her assessment of you?	.55
3. Trusts you and whom you trust?	.75
4. Encourages you to seek opportunites for growth?	.65
5. Gives you advice if you need it?	.78

Figure 1: Key to Variables

Variables are clustered by equation with the most quantitative measures listed first.

Tenure = length of time with organization
Contacthrs = total number of contact hours/week
Worknet = total number of people in work network
Supportnet = number of people in support network

Facehrs = number of face-to-face contact hours/week
Facelk = number of people seen face-to-face/week
Bimplx = biplex links--number of people from whom two support types are received
Trimplx = triplex links--number of people from whom three support types are received

Infolk = number of people in the information support network
Matlk = number of people in the material support network
Emolk = number of people in the emotional support network

Inforpro = proportion of information links to worknet links
Matpro = proportion of material links to worknet links
Emopro = proportion of emotional links to worknet links

Infostr = strength of informational support
Matstr = strength of material support
Emostr = strength of emotional support

Source variables:

Umlk = number of links to upper management
Superlk = number of links to supervisors
Prolk = number of links to professionals
Otherlk = number of links to all others

Figure 1 (continued).

Ummplx = number of multiplex ties (either bmplx or trmplx) to upper management
Pmplx = number of multiplex ties to professionals
Smplx = number of multiplex ties to supervisors
Othmplx = number of multiplex ties to all others

Uminfostr = strength of informational support from upper management
Sinfostr = strength of informational support from supervisors
Pinfostr = strength of informational support from professionals

Ummatstr = strength of material support from upper management
Smatstr = strength of material support from supervisors
Pmatstr = strength of material support from professionals
Umemostr = strength of emotional support from upper management
Semostr = strength of emotional support from supervisors
Pemostr = strength of emotional support from professionals

Table 3: Correlation Matrix: Independent Variables with Dependent Variables

	Informational Support	Material Support	Emotional Support
tenure	.09	.02	.06
worknet	-.14	-.24*	-.11
contacthrs	.02	.14	-.07
facelk	-.21*	-.33*	-.16
facehrs	-.06	-.07	-.12
supportnet	-.17	-.21*	-.19*
bimplx	-.32*	-.33*	-.28*
trimplx	.15	.09	.05
infolk	-.18	-.18	-.16
matlk	.01	-.11	-.04
emolk	.00	.01	-.09
infopro	-.16	-.12	-.19*
matpro	.00	-.03	-.09
emopro	.09	.17	-.01
infostr	.03	.16	-.04
matstr	.18	.21*	.06
emostr	.18*	.30*	.07
umlk	.02	-.18	.15
suplk	-.17	-.06	-.20*
prolk	.05	-.04	.17
otherlk	-.18	-.12	-.16
ummplx	-.01	-.20*	.05
smplx	-.15	.00	-.22*
pmplx	.08	-.08	.16
othmplx	-.10	-.08	-.18
uminfostr	.06	-.01	.17
ummatstr	.17	.03	.24*
umemostr	.16	.14	.30*
sinfostr	.10	-.05	.13
smatstr	.15	-.04	.19*
semostr	.22	.08	.26*
pinfostr	.06	.30*	.05
pmatstr	.12	.32*	.12
pemostr	.13	.28*	.05

* p <.05

The independent variables were sorted into nine general categories beginning with the most quantitative type of network measures (e.g., number of contact links), and gradually building toward those that indicate more qualitative properties of the support network (e.g., face-to-face contact, multiplexity, and strength) and finally to the sources of the quantitative and qualitative network links (e.g., number of links to upper management; amount of upper management emotional link strength). These groupings are indicated in Figure 1. Each cluster of independent variables was entered simultaneously into the computed regression equation for each dependent variable. The equations and the resulting beta weights for each dependent variable are presented in Tables 4, 5, and 6.

Perceived informational support. Four variables emerged from the initial regression equations as significant contributors to perceived informational support. The total number of people in the information network negatively impacted perceived informational support (Beta = -.51) as did the strength of informational support ties (Beta = -.63) and the number of biplex support relationships (Beta = -.28). The strength of emotional support ties (Beta = .46) was the only positive significant predictor among the thirty-four independent variables. Although not statistically significant, the strength of emotional support ties with

Table 4: Preliminary Regression Equations for Perceived Informational Support

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Infosup = 17.44 constant +.10 contacthrs +.14 tenure -.08 worknet -.16 supportnet.

Infosup = 17.89 constant +.13 trimplex +.15 facehrs -.28* bimplex -.19 facelk.

Infosup = 18.13 constant +.28 emolk +.20 matlk -.51* infolk.

Infosup = 18.5 constant -.25 infopro + .02 matpro -.20 emopro.

Infosup = 16.96 constant -.63* infostr +.32 matstr +.46* emostr.

Infosup = 17.84 constant -.12 otherlk +.07 prolk -.08 superlk -.0009 umlk.

Infosup = 17.43 constant +.0002 othermplx +.10 pmplx -.08 ummplx -.16 smplx.

Infosup = 16.08 constant +.08 pinfostr + .07 uminfostr + .11 sinfostr.

Infosup = 15.44 constant +.06 pmatstr +.03 umemostr -.14 smatstr +.13 ummatstr +.13 pemostr +.34 semostr.

* Beta significant at .05; key to variables in Figure 1.

Table 5: Preliminary Regression Equations for Perceived Material Support

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Matsup = 16.20 constant +.26* contacthrs +.07 tenure -.29 worknet -.11 supportnet.

Matsup = 16.35 constant +.09 trimplex +.32* facehrs -.30* bimplex -.34* facelk.

Matsup = 16.38 constant +.39* emolk -.02 matlk -.48* infolk.

Matsup = 16.09 constant -.26 infopro - .07 matpro +.33* emopro.

Matsup = 14.70 constant -.42 infostr +.08 matstr +.59* emostr.

Matsup = 16.51 constant -.16 otherlk +.38 prolk +.08 superlk -.50* umlk.

Matsup = 15.98 constant -.17 othermplx +.16 pmplx -.30 ummplx +.10 smplx.

Matsup = 14.40 constant +.30* pinfostr + .01 uminfostr + .0009 sinfostr.

Matsup = 14.10 constant +.33 pmatstr +.26 umemostr -.23 smatstr -.15 ummatstr + .0003 pemostr +.32 semostr.

* Beta significant at .05; key to variables in Figure 1.

Table 6: Preliminary Regression Equations for Perceived Emotional Support

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Emosup = 20.42 constant -.01 contacthrs +.10 tenure -.02 worknet -.16 supportnet.

Emosup = 20.45 constant +.07 trimplex +.12 facehrs -.38* bimplex +.004 facelk.

Emosup = 20.70 constant +.05 emolk +.10 matlk -.29 infolk.

Emosup = 21.73 constant -.24 infopro -.06 matpro -.12 emopro.

Emosup = 20.03 constant -.50* infostr +.19 matstr +.34 emostr.

Emosup = 20.05 constant -.10 otherlk +.05 prolk -.15 superlk +.12 umlk.

Emosup = 20.33 constant -.18 othermplx +.20 pmplx -.09 ummplx -.11 smplx.

Emosup = 18.63 constant +.07 pinfostr + .17 uminfostr + .10 sinfostr.

Emosup = 18.21 constant +.32 pmatstr +.35 umemostr -.04 smatstr - .07 ummatstr -.19 pemostr +.26 semostr.

* Beta significant at .05; key to variables in Figure 1.

supervisors surfaced among the source variables with a regression coefficent warranting further examination (Beta = .34). To minimize multicollinearity, these these five variables were divided into two groups and entered into second regression equations (see Table 7). From the first equation, both the strength of emotional support ties (Beta = .27) and the number of people in the information network (Beta = -.27) were significant predictors of informational support. In the second equation, the strength of emotional support ties with supervisors (Beta = .21) and the number of biplex relationships (Beta = -.32) significantly contributed to the variance in perceived informational support; the Contribution of the strength of informational support ties was minimal (Beta = .08) and was eliminated from subsequent analysis.

A final regression equation (see Table 7) combining the four significant variables was computed resulting in a multiple R of .44 and an R-squared of .20. The strength of emotional support ties (Beta = .25), the strength of emotional support ties with supervisors (Beta = .22), and the number of biplex relationships (Beta = -.25) emerged as the most significant predictors of perceived informational support. The number of people in the information support network (Beta = -.13) was not statistically significant.

These results indicate that higher levels of perceived

Table 7: Perceived Informational Support Regression Results

Equation 1:

Predictors	Beta	T-test	Significance
emotional support strength	.27	2.33	.02
information network links	-.27	-2.30	.02

Multiple R = .31 R-squared = .09 Adjusted R-squared = .07

F = 4.08 p = .02 S.E. = 3.99

Equation 2:

Predictors	Beta	T-test	Significance
informational support strength	.08	.70	.49
emotional support strength w/supervisors	.21	1.97	.05
biplex relationships	-.32	-2.93	.01

Multiple R = .38 R-squared = .15 Adjusted R-squared = .11

F = 4.32 p < .01 S.E. = 3.91

Final equation:

Predictors	Beta	T-test	Significance
biplex relationships	-.25	-1.95	.05
emotional support strength	.25	2.20	.03
emotional support strength w/supervisors	.22	2.10	.04
information network links	-.13	-.95	.35

Multiple R = .44 R-squared = .19 Adjusted R-squared = .15

F = 4.48 p < .01 S.E. = 3.82

informational support are dependent, in part, on fewer biplex relationships, and stronger emotional support ties both in general and specifically with supervisors.

Perceived material support. More variables contributed to variance in perceived material support than did to informational support. Ten significant predictors surfaced from the preliminary regression equations: total contact hours per week (Beta = .26); total face-to-face contact hours per week (Beta = .32); the number of biplex support relationships (Beta = -.30); the number of people seen face-to-face each week (Beta = -.34); the number of people in the emotional support network (Beta = .39); the number of people in the information network (Beta = -.48); the proportion of emotional links to work network links (Beta = .33); the strength of emotional support ties (Beta = .59); the strength of informational support ties with professionals in the workplace (Beta = .30); and the number of links to upper management (Beta = -.50).

In an effort to minimize multicollinearity, the significant predictors were divided into two groups and separate regression equations computed for each cluster. Table 8 lists the variables and summarizes the results from the two equations. The largest predictors from the separate equations were then combined for a third regression run. These included: the strength of informational support ties with professionals (Beta = .25); the number

Table 8: Perceived Material Support Regression Results

Equation 1:

Predictors	Beta	T-test	Significance
contact hours	.06	.39	.70
emotional links	.26	1.38	.17
information links	-.40	-2.2	.03
face-to-face contact hours	-.09	-.64	.52
informational support strength with professionals	.25	1.67	.10

Multiple R = .40 R-squared = .16 Adjusted R-squared = .10

F = 2.73 $p < .05$ S.E. = 2.92

Equation 2:

Predictors	Beta	T-test	Significance
emotional support strength	.39	2.99	.003
biplex relationships	-.23	-1.88	.06
upper management links	.07	.50	.62
face-to face links	-.30	-2.0	.05
proportion of emotional support network to work network	-.025	-.21	.83

Multiple R = .51 R-squared = .26 Adjusted R-squared = .21

F = 4.87 $p = .001$ S.E. = 2.71

Table 9 : Perceived Material Support Regression Results

Equation 3:

Predictors	Beta	T-test	Significance
emotional links	-.0005	-.03	.98
information links	-.0006	-.03	.98
emotional support strength	.30	1.6	.06
biplex relationships	-.21	-1.6	.11
face-to face links	-.28	-2.15	.03
informational support strength with professionals	.12	.88	.38

Multiple R = .53 R-squared = .28 Adjusted R-squared = .21

F = 4.56 p < .001 S.E. = 2.73

Table 10 : Perceived Material Support Regression Results

Final Equation:

Predictors	Beta	T-test	Significance
emotional support strength	.37	3.69	.000
biplex relationships	-.21	-1.85	.06
face-to face links	-.30	-2.6	.01

Multiple R = .53 R-squared = .28 Adjusted R-squared = .25

F = 4.38 p < .01 S.E. = 2.67

of people in the emotional support network (Beta = .26); the number of people in the information network (Beta = -.40); the strength of the emotional ties (Beta = .39); the number of biplex relationships (Beta = -.23); and the number of people seen face-to-face (Beta= -.30).

The results of the combined run are reported in Table 9. The number of biplex relationships (Beta = - .21), the number of people seen face-to-face each week (Beta = -.28), and the strength of emotional ties (Beta = .30) were the strongest predictors of perceived material support. These three variables were entered into a final equation which resulted in a multiple R of .53 and an R-squared of .28 (results are reported in Table 10).

Although in the final regression the number of biplex relationships was not statistically significant (Beta = -.21; p = .06), it did contribute to the variance in perceived material support. Hence, as with perceived informational support, fewer biplex relationships and stronger emotional ties contributed to higher levels of perceived material support. In addition, the fewer people seen face-to-face, the greater the perception that material support is available.

Perceived emotional support. Perceived emotional support had two significant predictors emerging from the initial regression runs: the number of biplex relationships (Beta = -.38); and the strength of the information ties (Beta = -.50). In addition, three

variables, although not statistically significant in the initial equation, had substantial regression coefficents and appeared to merit further investigation: the strength of emotional support ties (Beta = .34); the strength of emotional support ties with upper management (Beta = .35) and the strength of material support ties with professionals (Beta = .32) were included along with the two previously mentioned variables in subsequent analyses.

As was done previously with the predictors of perceived informational and material support, the five network variables were divided into clusters and separate regression equations were computed to minimize multicollinearity. Table 11 contains variable lists and regression results. The first equation produced no significant predictors. From the second equation, two significant variables emerged: the strength of emotional support ties with upper management (Beta = .32), and the number of biplex relationships (Beta = -.28). The strength of the information network (Beta = -.04) added little to this equation. A final regression equation was computed with only biplex relationships and strength of emotional support ties with upper management. The deletion of information network strength produced no change in explained variance; multiple R remained at .42 and R-squared at .18 (see Table 12).

These results indicate that higher levels of perceived emotional support are related to stronger

Table 11: Perceived Emotional Support Regression Results

Equation 1:

Predictors	Beta	T-test	Significance
material support strength with professionals	.11	.82	.42
emotional support strength	.0003	.04	.98

Multiple R = .12 R-squared = .014 Adjusted R-squared = - .012

F = .54 p = .58 S.E. = 3.47

Equation 2:

Predictors	Beta	T-test	Significance
emotional support strength with upper management	.32	2.97	.01
biplex relationships	-.28	-2.65	.01
informational support strength	-.04	-.39	.70

Multiple R = .42 R-squared = .18 Adjusted R-squared = .14

F = 5.39 p < .01 S.E. = 3.19

Table 12: Perceived Emotional Support Regression Results

Final Equation :

Predictors	Beta	T-test	Significance
emotional support strength with upper management	.31	2.97	.004
biplex relationships	-.29	-2.78	.007

Multiple R = .42 R-squared = .18 Adjusted R-squared = .15

F = 8.10 p < .01 S.E. = 3.17

emotional support ties with management, rather than from nonspecific sources. Furthermore, as with other support facets, the more biplex relationships, the lower the level of perceived emotional support.

Summary

Research question #1. The first research question asked whether the proportion of the individual support networks to the general work network might be a better predictor of perceived support than the size of the work network alone. Although the correlation matrix indicates significant correlations between the proportion of the information network (to the work network) and perceived emotional support ($r = -.19$) as well as between the work network and perceived material support ($r = -.24$), neither of these variables proved to be valuable predictors of perceived support in the preliminary regression analyses. Instead, the proportion of emotional support links to the work network surfaced initially as a significant predictor of perceived material support (Beta = .33), but was dropped from subsequent equations. In the final equations, neither the work network nor the proportions of the networks emerged as a significant predictor of any perceived support function.

Research question #2. The second research question called for an comparison of face-to-face contact variables with general contact variables as predictors

of perceived support.

The correlation matrix between the independent and dependent variables indicates that the number of face-to-face links has a slighty stronger association with perceived support functions than do general work network links (see Table 3). This marginal edge was sustained in the regression analyses as well. Neither the number of persons in the work network, the frequency of general contact hours, nor the *frequency* of face-to-face contact predicted any facet of perceived support.

In contrast, the number of persons seen face-to-face each week appeared in the final regression equation as a significant contributor to the variance of perceived material support (see Table 10). It should be noted that the relationship is negative (Beta = -.30); contrary to other research, in this study the greater the number of people in the face-to-face network, the lower the level of perceived material support. Face-to face measures had no significant impact on either perceived informational or perceived emotional support.

Research question #3. The influence of mutiplex relationships on perceived support was the focus of the third research question. Specifically, the nature of the influence was explored as well as whether the source of multiplex relationships was important to perception. Triplex relationships were not associated with any facet of perceived support in either the

correlation matrix or in the regression analyses. Such was not the case with biplex relationships.

The presence of two support ties with individuals emerged as a consistent predictor of all support functions both in the preliminary analyses (see Tables 4, 5, and 6) and in the final regression equations (see Tables 7, 10, and 12). However, as with the number of face-to-face links, the relationship with each was unexpectedly negative (Beta = -.25 for perceived informational support; Beta = -.21 for perceived material support; and Beta = -.29 for perceived emotional support).

The number of multiplex links with various source groups (upper management, professionals, and supervisors) had no influence on perceived support.

Research question #4. The final research question asked whether the strength of the support tie and/or the source of the strength influenced perceptions of support. Consistent with the patterns in the correlation matrix, both the strength of the relationship and the sources of the strong support relationships were predictors of perceived support functions. In addition, the source-strength variables had a differential influence on the perceived support measures: supervisors were important sources for informational support perception; upper management was important to perceived emotional support. It is noteworthy that the strength of emotional support ties was common to all significant

strength variables and that all of these strength variables related positively to support perception.

Specifically, the overall strength of emotional support ties was a significant predictor of both perceived informational (Beta = .25) and material (Beta = .37) support. Perceived informational support was also predicted by the strength of emotional support ties with supervisors whereas the only significant strength variable relating to perceived emotional support was the strength of emotional support ties with upper management (Beta = .31) (see Tables 7, 10, and 12).

CHAPTER IV : DISCUSSION

This chapter discusses the implications of the analyses presented in Chapter III. First, an overview of the results is presented. Second, specific issues and trends in the data are considered. Finally, implications of this study and directions for future research are discussed.

Overview of Results

This research posed four questions that explored the influence of selected network variables on perceived social support in the workplace. First, the analyses indicated that the proportion of support network links to the number of persons in the work network was no better a predictor of perceived social support than general network measures. Second, face-to-face variables had only a marginal edge over general network measures in predicting perceived support; general contact variables had no influence. Specifically, the number of people seen face-to-face each week was a negative predictor of perceived material support, but the frequency of face-to-face contact was not significant in any of the final regression equations. Third, triplex relationships had no significant impact

on perceived support functions while biplex relationships were a significant negative predictor of every support function. Finally, the strength of emotional support ties either in general (for perceived informational and material support) and/or with specific groups (supervisors for perceived informational support and upper management for perceived emotional support) was an important positive predictor of perceived support.

Issues and Trends

Although some network predictors emerged as more important than others, the overall variance accounted for by them was disappointing. The most variance explained occurred in the final material support regression in which the adjusted R-squared was .25. The explained variance for both informational support and emotional support was only fifteen percent. These results are not inconsistent with the perceived support studies discussed earlier in which the highest explained variance was thirty percent.

A partial explanation for this phenomenon can be inferred from an examination of the scatterplots between the perceived support functions and several of the network variables in this study (number of links, number of face-to-face links, frequency of face-to face and general contact). The apparent reason for low correlations between the network and perceived support variables is not merely a random distribution of data points. Instead,

the scatterplots show a heavy distribution of data points in the lower-right quandrant and very few data points in the upper-left. In other words, a substantial number of participants consistently report high levels of perceived support, but low levels of the network variables; e.g., contact frequency, number of network links. In constrast, only a few participants indicate high levels of a network variable and low levels of perceived support. The consistency of this pattern suggests that the perception of support is driven by factors other than those reported in the quantifiable work network. Indeed, the fact that strength and mutiplexity, the most qualtitative of the network measures, emerged in some form in each of the final regression equations is a testatment to the qualitative component of perception.

Sources and Strength of Ties

The strength measure is a combination of accessibility (the number of contact hours per week with an individual) and reliablity (how often do you get informational, material, or emotional support from this person; (1) never to (7) always). Eventhough there is a strong positive correlation among the strength measures (e.g., emotional strength and material strength, $r = .85$), it is emotional strength that surfaced as an important factor in perception. This suggests that the depth of relationships is crucial to perception of support, and

that in the workplace, the sources of relational depth are important as well. Furthermore, different variations of the emotional support strength measures predicted each perceived support function. Consequently, the interpretation of the strength of emotional support ties for each function merits individual consideration.

Perceived informational support. Perceived informational support, the feeling that there is access to reliable information about the organization, increased with higher reported levels of emotional support strength in general and from higher levels of emotional support strength with supervisors, in particular.

Emotional support was defined in this study in terms of offering reassurance, bolstering self-esteem, listening to problems. Implicit in this definition is the notion of trust; reassurance, for example, is seldom possible without it. Yet it was not the number of emotional support links that was significant in the analyses; the strength component (acessibility and reliability) was essential. Such relational depth may influence perceptions of informational support in two ways. First, and most obvious, when there is a strong relationship, more information may flow between parties. Second, relational depth may enhance the value of information; i.e., perhaps information is not helpful unless it comes from those one trusts.

The perceived informational support measure focused

on political types of organizational information. With such types of information perhaps reassurance is a necessary accompaniment if the information is to be considered helpful. Without emotional support strength, information may be only disturbing--representing overload, raising self-doubt and uncertainty. This would explain, in part, not only the consistent negative correlations between many of the general information network measures and perceived support functions, but also why emotional strength with supervisors is particularly important to perceived informational support. Supervisors by definition have some power and authority; strong emotional support ties with them may have especially beneficial effects for employess including feeling that some of the organizational power is shared, that information is accurate, and that they are less vulnerable to organizational change.

Perceived material support. It is interesting that the strength of material support ties had no impact on perceived material support. Once again, it was the strength of emotional support ties that predicted positive feelings concerning the availability of help in the workplace.

To some degree, both informational and material support are expected in the workplace, and in some cases may be actually built into job descriptions. The strength of those support ties then may only partially

reflect voluntary support. Perhaps the voluntary component is crucial to perception. The amount of help measured by material support strength may be due to primarily to circumstance; the fact that people help because "they have to" may have diminished the impact material strength. In contrast, the strength of emotional support ties implies a more developed relationship that is not dictated by work roles. Consequently, when strong emotional ties exist, one's feelings that people can be relied on to help *if needed* may be heightened.

Perceived emotional support. House (1981) and Ford (1985) both remarked that most of the documented benefits of perceived support can be attributed to emotionally supportive relationships rather than other support functions. The predictors of perceived emotional support then become especially noteworthy--in this case, the strength of emotional support ties with upper management was the only positive predictor of perceived emotional support in the workplace.

The idea that in certain contexts, specific sources of support may be more important than others is not new. Wortman (1984) noted that cancer patients found advice from physicians helpful, but not from friends or relatives. Following the advice of the physician, a presumed expert/authority, may be helpful because it gives the patient of sense of certainty;

i.e., a specific course of action should be taken. With friends and relatives, on the other hand, the patient may be unable to assess the knowledge that is the basis for the advice.

There is a parallel between the medical scenario and the workplace that elucidates the importance of strong emotional support ties with upper managers. Upper managers are the consummate authorities and experts in the workplace. As previously discussed, strong emotional support ties indicate frequent and consistent opportunities for reassurance, and implicitly, relational depth. When emotional support ties are strong with upper managers, feelings of certainty/security, worth in the workplace, may be generated in a way that coworkers and even supervisors cannot foster--in part because they do not have the organizational power to grant the same degree of reassurance as do their superiors.

Multiplexity

Just as with strength measures, one of the multiplexity variables, biplex relationships, appeared in each support function's final regression equation. In contrast to strength which related positively to all perceived support functions, biplex relationships had a consistently negative impact.

Biplex relationships are the total number of an individual's links in which two types of support are

provided. The data suggest that many biplex relationships are comprised of informational and material support ties; when emotional support is present, usually the other two are as well. To the extent that informational and material support are expected as part of the work relationship, a high number of biplex relationships may merely represent a higher number of routine, superficial work relationships. As that number increases, the perception of all support facets is eroded.

Interestingly, triplex relationships correlate positively (but not significantly) to all support functions. Apparently, even maximum relational breadth is not as important as the strength of the tie. This finding corroborates Ray and Miller (1989) who found that multiplexity had a slight negative effect on perceived coworker support while link strength was a positive and critical predictor. This implies a strong argument for the relative importance of relational quality (depth/ strength) over quantity (breadth/multiplexity).

General Trends

There are two general trends that emerge in this research that merit comment. First, the cost of social contact is evident in the recurrent pattern of negative relationships between general network contact variables and perceived support. Specifically, the number of people in the work network,

the number of people seen face-to-face each week, the number of face-to-face contact hours all relate negatively to all facets of support. In addition, the number of people in the information network and the proportion of the information network to the whole network also relate negatively to the perceived support functions. In the case of perceived material support, the number of face-to-face people seen each week was actually a significant negative predictor.

Clearly overload has long been recognized as a significant job stressor. In this particular work environment, although many departments are sparsely staffed, they provide services to other departments. The more people seen face-to-face each week may coincide with requests for service from them--especially if helping co-workers is part of the job expectation. Similarly, increased numbers of people in the information network may signal requests for services, information overload, and/or increased uncertainty.

The negative impact of biplex relationships is also consistent with these patterns; superficial relationships in which information and material support are received probably require relatively prompt reciprocation (Albrecht & Adelman, 1987). Without some relational depth which allows reciprocity to be deferred, the result of high levels of biplex relationships can be enervating.

Although already discussed to some extent earlier in this text, a second noteworthy trend in the data is the varying pattern that sources of support have with the perceived support functions. The correlation matrix shows that the strength of material support and emotional support ties with both upper managers and supervisors have positive significant correlations with perceived emotional support. In comparison, all strength variables with professionals (informational, material, and emotional) have significant positive correlations with perceived material support.

Professionals in this organization generally do not supervise. Their work normally requires that they work independently often providing services to the public. This group has status and organizational knowledge, but is the least political within the organization. Interestingly, they are the only support provider group that has significant correlations with perceived material support. Sometimes needing assistance can be viewed as a weakness. The help professionals provide--whether informational, material, or emotional--does not have performance evaluation associated with it. Hence, the costs of support are lessened and requests for help may not require the degree of relational development that is necessary with supervisors and upper managers.

Implications and Directions for Future Research

This research suggests that if employees are to feel supported they need to work in an environment that fosters the development of relationships at all levels of the organization. Managers and supervisors need to invest time in getting to know their people.

However, it is not clear that reassurance is all that is needed. In both the upper management and supervisory groups, there are high correlations among informational, material, and emotional strength measures (mean r =.8). If perceived emotional support is most important and the strength of emotional support ties drives that perception, it is important to understand the complex interrelationships of the support functions. It is possible that strong emotional ties are only meaningful when there are manifest actions (material support strength) to back them up. In that case, managers must do more than reassure, they must demonstrate their support as well.

Unfortunately, what constitutes an adequate demonstration of support remains elusive and cannot be addressed by network studies. This research suggests that the key to understanding precursors of perceived support is embedded in relationship and interaction with individuals in particular organizational groups. Perhaps future research agendas should incorporate these features by identifying universal acts of support

as reported by individuals with high perceived support scores. Specific content of reassuring messages, specific acts of task assistance, specific types of information, the contexts in which they are given, and the persons from whom they are received should be sought. Such data might be invaluable for use in organizational training programs so that good supportive intentions can be converted into effective supportive actions.

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APPENDIX

Figure 2: Example of the Network Questionnaire

Example #1: If you have no contact with Clara Barton and do not consider her part of your support network, columns #1 and #2 would be 0; column #3 would be no, and the remaining columns would be blank.

Example #2: Suppose you have meetings and general contact with Dick Schubert five hours a week, but only talk with him one-on-one approximately one hour a week. However, you consider him to to be part of your support network; but you rely on him strongly *only* for information. Column #1 would be 5; column #2 would be 1; column #3 yes; column #4 would be 7, and columns #5 and #6 would be 1.

	Estimated number of contact hours per work week (0 - 40)	Estimated number of one-on-one contact hours per work week (0 - 40)	Do you consider this person part of your work support network? (yes/no)	If yes in column 3, indicate how often these kinds of support are provided: information (For columns 4, 5, and 6: 1=never; 2=very seldom; 3=seldom; 4=occasionally; 5=often; 6=almost always; 7=always)	material aid	reassurance emotional
	#1	#2	#3	#4	#5	#6
#1 CLARA BARTON	0	0	no			
#2 DICK SCHUBERT	5	1	yes	7	1	1

PART ONE

FOR EACH PERSON LISTED, PLEASE FILL IN THE COLUMNS CORRESPONDING WITH HIS/HER NAME AS INDICATED BELOW.

	Estimated number of contact hours per work week (0 - 40)	Estimated number of one-on-one contact hours per work week (0 - 40)	Do you consider this person part of your work support network? (yes/no)	If yes in column 3, indicate how often these kinds of support are provided: information (For columns 4, 5, and 6: 1=never; 2=very seldom; 3=seldom; 4=occasionally; 5=often; 6=almost always; 7=always)	material aid	reassurance emotional
	#1	#2	#3	#4	#5	#6
PERSONNEL						
name						

Table 13: Correlation Matrix of Independent Variables

	tenure	worknet	contacthr	facelk	facehrs
tenure	--	.07	.21*	.04	-.04
worknet	.07	--	.33*	.78*	.34*
contacthrs	.21*	.33*	--	.29*	.50*
facelk	.04	.78*	.29*	--	.52*
facehrs	-.04	.34*	.50*	.52*	--
supportnet	.09	.70*	.32*	.32*	.58*
bimplx	.04	.47*	.29*	.46*	.31*
trimplx	.12	.45*	.20*	.25*	.01
infolk	.08	.71*	.29*	.54*	.31*
matlk	.16	.53*	.21	.41*	.13
emolk	.05	.57*	.32*	.42*	.31*
infopro	-.00	-.19*	-.11	-.18	.01
matpro	.15	-.05	-.00	-.04	-.06
emopro	.04	-.03	.12	-.06	.07
infostr	.09	.26*	.83*	.71*	.23*
matstr	.13	.21	.71*	.17	.26*
emostr	.06	.22*	.74*	.17	.38*
umlk	-.10	.55*	-.09	.46*	.01
suplk	.21*	.63*	.38*	.43*	.20*
prolk	-.25*	.42*	-.09	.30*	.04
otherlk	.13	.84*	.48*	.60*	.21*
ummplx	.00	.48*	-.10	.34*	-.04
smplx	.22*	.36*	.43*	.24*	.19*
pmplx	-.17	.35*	-.08	.25*	.04
othmplx	.15	.57*	.44*	.44*	.25*
uminfostr	-.04	.20*	.30*	.25*	.25*
ummatstr	-.02	.30*	.30*	.36*	.27*
umemostr	-.06	.28*	.24*	.33*	.27*
sinfostr	-.18*	-.03	.01	.06	.10
smatstr	-.17	.04	.02	.13	.13
semostr	-.17	-.11	-.01	-.02	.09
pinfostr	.34*	.08	.61*	.00	.14
pmatstr	.36*	.02	.48*	-.05	.02
pemostr	.14	.10	.60*	.01	.12

* p <.05

Table 13 continued

	supnet	infolk	matlk	emolk	umlk
tenure	.09	.08	.16	.05	-.10
worknet	.70*	.71*	.52*	.57*	.55*
contacthrs	.32	.29*	.21*	.32	-.09
facelk	.58*	.54*	.41*	.41*	.48*
facehrs	.48*	.31*	.12	.31*	.01
supportnet	--	.93*	.63*	.74*	.26*
bimplx	.50*	.54*	.13	.28*	.17
trimplx	.50*	.61*	.85*	.77*	.09
infolk	.93*	--	.68*	.77*	.33*
matlk	.63*	.68*	--	.62*	.14
emolk	.74*	.77*	.62*	--	.09
infopro	.39*	.44*	.26*	.32*	-.13
matpro	.22*	.26*	.72*	.35*	-.20*
emopro	.30*	.32*	.33*	.71*	-.27*
infostr	.36*	.38*	.27*	.43*	-.12
matstr	.24*	.26*	.50*	.35*	-.12
emostr	.29*	.30*	.26*	.57*	-.21*
umlk	.26*	.33*	.14	.09	--
suplk	.42*	.51*	.41*	.50*	-.06
prolk	.26*	.32*	.04	.11	.85*
otherlk	.59*	.66*	.54*	.61*	.10
ummplx	.35*	.43*	.43*	.32*	.77*
smplx	.44*	.50*	.48*	.59*	-.32*
pmplx	.40*	.45*	.38*	.35*	.62*
othmplx	.68*	.78*	.72*	.79*	-.11
uminfostr	.14	.09	.00	-.04	.60*
ummatstr	.09	.07	.20*	.02	.54*
umemostr	.13	.08	.04	.15	.55*
sinfostr	.16	.16	.01	-.06	.28*
smatstr	.15	.15	.08	-.03	.29*
semostr	.04	.03	-.03	-.04	.17
pinfostr	.12	.11	.11	.28	-.36
pmatstr	.04	.06	.23*	.23*	-.35*
pemostr	.13	.12	.12	.35*	-.34*

* p <.05

Table 13 continued

	suplks	prolks	otherlk	bimplx	trimplx
tenure	.21*	-.25*	.13	.04	.11
worknet	.63*	.42*	.84*	.47*	.45*
contacthrs	.38*	-.09	.48*	.28*	.19*
facelk	.43*	.30*	.59*	.46*	.25*
facehrs	.20*	.04	.21*	.31*	.01
supportnet	.42*	.26*	.59*	.50*	.50*
bimplx	.38*	-.06*	.48*	--	-.13
trimplx	.40*	.05	.49*	-.13	--
infolk	.51*	.32*	.66*	.54*	.61*
matlk	.41*	.04	.54*	.13	.85*
emolk	.50*	.11	.61*	.28*	.77*
infopro	-.05	-.08	-.12	-.15	.28*
matpro	.18	-.23*	.06	-.06	.61*
emopro	.18*	-.26*	.14	-.00	.58*
infostr	.38*	-.06	.43*	.17	.34*
matstr	.26*	-.13	.38*	-.07	.52*
emostr	.34*	-.17	.42*	.07	.43*
umlk	-.06	.85*	.10	.17	.09
suplk	--	-.18	.76*	.38*	.40*
prolk	-.18	--	.02	.13	.05
otherlk	.76*	.02	--	.48*	.49*
ummplx	.01	.62*	.15	.19*	.38*
smplx	.76*	-.36*	.60*	.34*	.50*
pmplx	-.10	.74*	.08	.13	.37*
othmplx	.64*	-.14	.76*	.52*	.67*
uminfostr	-.25*	.58*	-.07	.05	-.05
ummatstr	-.09	.50*	.04	.07	.10
umemostr	-.10	.49*	.04	.01	.07
sinfostr	-.16	.41*	-.13	-.00	-.04
smatstr	-.11	.42*	-.08	-.04	.00
semostr	-.23*	.36*	-.17	-.04	-.05
pinfostr	.31*	-.35*	.34*	.01	.23*
pmatstr	.23*	-.36*	.26*	-.16	.34*
pemostr	.30*	-.33*	.32*	-.02	.28*

* p <.05

Table 13 continued

	infostr	matstr	emostr	uminfostr	ummatstr
tenure	.09	.13	.06	-.04	-.02
worknet	.26*	.21*	.22*	.20*	.30*
contacthrs	.83*	.71*	.74*	.30*	.30*
facelk	.21*	.17	.17	.25*	.36*
facehrs	.43*	.26*	.38*	.25*	.27*
supportnet	.36*	.24*	.29*	.14	.09
bimplx	.17	-.07	.07	.05	.10
trimplx	.34	.52*	.43*	-.07	.10
infolk	.38*	.26*	.30*	.09	.07
matlk	.27*	.50*	.26*	.00	.20*
emolk	.43*	.35*	.57*	-.04	.02
infopro	.11	.04	.06	-.16	-.27*
matpro	.11	.38*	.15	-.21*	.03
emopro	.29*	.28*	.51*	-.25*	-.16
infostr	--	.82*	.85*	.19	.18
matstr	.82*	--	.79*	.12	.27*
emostr	.85*	.79*	--	.00	.08
umlk	-.12	-.12	-.21*	.60*	.54*
suplk	.38*	.26*	.34*	-.25*	-.09
prolk	-.06	-.13	-.17	.58*	.50*
otherlk	.43*	.38*	.42*	-.07	.04
ummplx	-.12	-.05	-.13	.41*	.47*
smplx	.47*	.41*	.49*	-.28*	-.16*
pmplx	-.07	-.03	-.10	.35*	.43*
othmplx	.49*	.46*	.52*	-.19*	-.06
uminfostr	.19*	.12	-.00	--	.79*
ummatstr	.18	.27*	.08	.79*	--
umemostr	.14	.13	.17	.77*	.79*
sinfostr	.09	.02	-.10	.33*	.20*
smatstr	.08	.08	-.07	.27*	.30*
semostr	.04	.03	-.01	.25*	.21*
pinfostr	.60*	.54*	.63*	-.08	-.04
pmatstr	.54*	.62*	.63*	-.12	-.05
pemostr	.61*	.55*	.72*	-.10	-.09

* p <.05

Table 13 continued

	umemostr	sinfostr	smatstr	semostr	pinfostr
tenure	-.06	-.18	-.17	-.17	.34*
worknet	.28*	-.03	.04	-.11	.08
contacthrs	.24*	.01	.02	-.01	.61*
facelk	.33*	.06	.13	-.02	.00
facehrs	.26*	.10	.13	.09	.14
supportnet	.13	.16	.15	.04	.12
bimplx	.01	-.00	.02	-.04	.01
trimplx	.07	-.04	.00	-.05	.23*
infolk	.08	.16	.15	.04	.11
matlk	.04	.01	.08	-.03	.11
emolk	.14	-.06	-.03	-.04	.28*
infopro	-.27	.10	.00	.00	.00
matpro	-.16	.08	.01	-.04	.10
emopro	-.02	-.19*	-.13	-.08	.28*
infostr	.14	.09	.08	.04	.60*
matstr	.13	.02	.08	.03	.54*
emostr	.17	-.10	-.07	-.01	.63*
umlk	.55*	.28*	.29*	.17	-.36*
suplk	-.10	-.16	-.11	-.23*	-.36*
prolk	.49*	.41*	.42*	.36*	-.35*
otherlk	.04	-.13	-.08	-.17	.34*
ummplx	.49*	.13	.18*	.08	-.24*
smplx	-.19	-.25*	-.21*	-.22*	.52*
pmplx	.37*	.45*	.51*	.39*	-.26*
othmplx	-.12	-.13	-.09	-.14	.31*
uminfostr	.77?*	.33*	.27*	.25*	-.08
ummatstr	.79*	.20*	.30*	.21*	-.04
umemostr	--	.17	.17	.20	.00
sinfostr	.17	--	.93*	.76*	-.24*
smatstr	.17	.93*	--	.82*	-.23*
semostr	.20*	.76*	.82*	--	-.22*
pinfostr	.00	-.24*	-.23*	.22*	--
pmatstr	-.05	-.23*	-.21*	-.21*	.92*
pemostr	.00	-.24*	-.22*	-.22*	.87*

* p <.05

Table 13 continued

	pmatstr	pemostr	ummplx	smplx	pmplx
tenure	.36*	.14	.00	.22*	-.17
worknet	.02	.10	.48*	.35*	.35*
contacthrs	.48*	.59*	-.10	.43*	-.08
facelk	-.05	.01	.34*	.24*	.25*
facehrs	.02	.12	-.04	.19*	.04
supportnet	.04	.13	.35*	.44*	.40*
bimplx	-.16	-.02	.18	.34*	.13
trimplx	.34*	.28*	.38*	.50*	.37*
infolk	.06	.12	.43*	.50*	.45*
matlk	.23*	.12	.43*	.48*	.38*
emolk	.23*	.35*	.32*	.59*	.35*
infopro	.02	-.02	.11	.22*	.18
matpro	.25*	.09	.21*	.35*	.22*
emopro	.29*	.32*	.09	.46*	.10
infostr	.54*	.61*	-.12	.47*	-.07
matstr	.62*	.55*	-.05	.41*	-.03
emostr	.58*	.72*	-.13	.49*	-.10
umlk	-.33*	-.34*	.77*	-.32*	.62*
suplk	.23*	.30*	.01	.76*	-.10
prolk	-.36*	-.33*	.62*	-.36*	.74*
otherlk	.26*	.32*	.15	.60*	.08
ummplx	-.22*	-.24*	--	-.14	.72*
smplx	.47*	.50*	-.14	--	-.18
pmplx	-.25*	-.25*	.72*	-.18	--
othmplx	.28*	.34*	.08	.75*	.10
uminfostr	-.12	-.10	.41*	-.28*	.35
ummatstr	-.05	-.09	.47*	-.16	.43*
umemostr	-.05	.00	.49*	-.19*	.37*
sinfostr	-.23*	-.24*	.13	-.25*	.45*
smatstr	-.21*	-.22*	.18	-.21*	.51*
semostr	-.20*	-.21*	.08	-.22*	.39*
pinfostr	.92*	.87*	-.24*	.52*	-.26*
pmatstr	--	.81*	-.22*	.47*	-.25*
pemostr	.87*	--	-.24*	.50*	-.25*

* p <.05

Table 13 continued

	othmplx	infopro	emopro	matpro
tenure	.15	-.00	.04	.14
worknet	.57*	-.19*	-.03	-.05
contacthrs	.44*	-.11	.12	-.00
facelk	.43*	-.18	-.06	-.04
facehrs	.25*	.01	.07	-.06
supportnet	.68*	.39*	.30*	.22
bimplx	.52*	.15	-.00	-.06
trimplx	.67*	.28*	.58*	.61*
infolk	.78*	.44*	.32*	.22*
matlk	.72*	.26*	.33*	.72*
emolk	.79*	.31*	.72*	.32*
infopro	.32*	--	.52*	.47*
matpro	.43*	.47*	.49*	--
emopro	.49*	.52*	--	.49*
infostr	.49*	.11	.29*	.11
matstr	.46*	.04	.28*	.38*
emostr	.52*	.06	.51*	.15
umlk	-.11	-.13	-.27*	-.20*
suplk	.64*	-.05	.18	.08
prolk	-.14	-.08	-.23*	-.26*
otherlk	.76*	-.12	.14	.06
ummplx	.08	.11	.09	.21
smplx	.75*	.22*	.46*	.35*
pmplx	.10	.32*	.49*	.43*
othmplx	--	.32*	.49*	.43*
uminfostr	-.19*	-.16	-.25*	-.21*
ummatstr	-.06	-.27*	-.16	.03
umemostr	-.12	-.27*	-.02	-.16
sinfostr	-.13	.10	-.19*	-.08
smatstr	-.09	.00	-.13	.01
semostr	-.14	.00	.28*	.10
pinfostr	.31*	.00	.28*	.10
pmatstr	.28*	.02	.29*	.25*
pemostr	.34*	-.02	.32*	.09

* p <.05