TOWARD A PSYCHOLOGY OF DYADIC ORGANIZING

George Bearnard Graen and Terri A. Scandura

ABSTRACT

The dyadic approach to understanding how individual behavior is coordinated into teamwork for accomplishing unstructured tasks has generated much empirical research. At present, however, the dyadic perspective is in need of theoretical reformulation, grounded in empirical results. This paper will discuss a dyadic theory of role emergence. First, the lineage of the dyadic perspective on organizing is traced to classic propositions about the process of organizing teamwork for unstructured tasks. Next a descriptive model is presented that includes *role taking, role making,* and *role routinization* phases as dyadic process. Explication of this model is followed by a discussion of the career implications of dyadic structures for organizational participants. Next, the empirical research on dyadic organizing is reviewed, highlighting the critical findings on various issues. Finally, notes on the technical aspects of researching dyadic organizing are given, including the measurement of components and suitable research designs for testing propositions derived from the model.

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> They say you are not you except in terms of relation to other people. If there weren't any other people there wouldn't be any you because what you do, which is what you are, only has meaning in relation to other people.
>
> Robert Penn Warren
> *All the King's Men*

The topic of interest in this paper is how the behavior of individual participants becomes integrated with others into coordinated and interdependent teamwork for accomplishing unstructured tasks. In short, through what process does the behavior of two or more people become organized to deal with the most critical and challenging tasks facing a unit—the unstructured tasks?

Unstructured tasks are of interest because they are underdetermined in that they may allow (a) multiple task formulations, (b) several alternative means of performance, and (c) a number of different goals. Because unstructured tasks are underdetermined, they cannot be analyzed and reduced to written standard procedure as can structured tasks. Hence, the human organization needed to accomplish unstructured tasks must somehow emerge from the day-to-day interactions of people who are confronted with such tasks on a regular basis.

Our thesis is that the dyadic approach to organizing for unstructured tasks can help us to understand a good deal about this process. The individual approach to organizing cannot go beyond the one-person team, and the average work group approach cannot reveal the variation in a unit's internal teamwork components. The dyadic approach, by employing the smallest unit of interpersonal organization—two participants and their interrelationships—can go beyond the one-person team and can reveal the variation in the internal teamwork components of a work group.

Within organizational units, unstructured tasks typically come quickly to the attention of the superior. When the superior seeks to enlist the collaboration of his or her members on such tasks the organizing process is activated. Unfortunately for the superior, collaboration with the superior on unstructured tasks is not part of all members' written job descriptions. Collaboration from a member or members of choice requires social exchanges as inducements from the superior. These exchanges of collaboration on unstructured tasks, with social exchanges as inducements, promote the emergence of superior–member dyadic structures between the superior and some members but seldom all members. In this manner, units become further differentiated into those who team with the superior on unstructured tasks and those who do not.

Next, we turn to the theoretical lineage of the dyadic organizing ap-

proach and trace the concepts from Chester Barnard to the present. This leads into our descriptive model of dyadic organizing which has three phases: *role taking, role making,* and *role routinization.* This is followed by a consideration of the career implications of building or not building dyadic structures between superiors and members. Finally, the research on dyadic organizing is reviewed in terms of selected issues.

LINEAGE OF DYADIC ORGANIZING

The roots of the dyadic perspective on organizing can be found in Chester Barnard's *The Functions of the Executive* (1938). Barnard, the father of dyadic theory of organizational behavior, was an operating manager most of his career. He abstracted from these experiences and wrote about people working cooperatively toward mutually rewarding objectives. As a practicing manager, he dealt in the phenomenological world of the dyad—vertical, horizontal, and diagonal. He was intimately concerned with day-to-day problems and opportunities involving the development and maintenance of what we call *dyadic organizing.* Barnard was one of the first to insist, at length, that organizations *by their very nature* are negotiated systems. For Barnard, cooperation was the essence of organizing. Cooperative efforts were described as negotiations between two parties. This constitutes one of the earliest references to the dyad. He stressed the need to work within dyads to achieve a balance between "inducements and contributions."

Barnard's distinction between inducements and contributions was used extensively by Simon (1957) in his work 20 years later, resulting in the theory of "organizational equilibrium." Although Simon's theory points to an essential characteristic about the survival of organization, the process through which the balance between inducements and contributions is reached is not dealt with in detail. This process is fundamentally a process of negotiation in which personally valued inducements are made available to participants in exchange for organizationally valued contributions to the organization that ensure its survival. Generally, the emergence of the terms of these transactions takes place at the level of the dyad. Acceptable forms of inducement and contribution evolve based on the participants' unique knowledge, abilities, and skill and the particular needs of the work unit, as determined by the participant and his or her immediate superior.

March and Simon (1958) elaborate the inducements and contributions model of organizing in terms of the complexity of the decision space (the various alternatives) surrounding decisions and the limited decision-making capabilities of participants. Moreover, a new way of viewing the processes

by which participants accomplish unstructured tasks in organizations was offered: Armed with limited rationality and faced with equivocal information, participants are allowed to accept satisficing solutions.

Weick (1979), some 20 years later, offered a description of the process of dyadic organizing. Weick views organizing as being built upon "individual behaviors that are interlocked among two or more people" (p.89). Any given behavior of one person is contingent upon the behavior of another person, and these contingencies are called *interacts*. Thus, the unit of analysis is the reciprocal response pattern in which an action by one person evokes a response by another person, which is then responded to by the first person (this sequence is referred to as a *double interact*).

It is generally accepted that such double interacts are the basic units for describing interpersonal influence (Hollander, 1976). Because organizing through dyadic interaction will be viewed here as a process of incremental influence, conceptualizing the process using the double interact as the unit of analysis appears to be sensible. By its very nature, the double interact is a *dyadic* phenomenon, and it cannot fail to be so. Hence, the process of organizing via double interacts must be studied at the level of the dyad.

Weick (1979) leaves to others the explication of the development of numerous interlocked behavior cycles, but builds on them to propose a theory of the organizing process. These processes are hypothesized to be procedures that managers use to mobilize several interlocked behavior cycles into larger systems of interdependent action.

> Either by design or by accident, numerous interlocked behavior cycles form within organizations (e.g., Graen, 1976). It is these cycles that are the stable forms within organizations, and it is these cycles that are assembled into larger subassemblies in the interest of stabilizing equivocal displays and transforming them into information, enacted environments, and cause maps. (p.112)

The uncertainty of the complex puzzles facing participants is gradually reduced as the process unfolds of dyadic organizing through the development of interlocked behavior cycles. Decisions to produce (March & Simon, 1958) evolve over time as a result of a bonding of double interacts with various others in the networks that reveal the organization. This process through which individual participants evolve their roles through dyadic transactions has been termed *role making* (Graen, 1976).

According to Graen and Cashman (1975), role making is a set of processes by which participants (a) by design or accident interlock behavior on unstructured tasks and (b) evolve the nature of their relationships against the background of the formal (written) organization. In other words,

role making is a set of processes by which a range of collaborative systems emerge based on dyadic transactions involving interdependent sets of inducements and contributions. Thus, Graen and his associates are concerned with the explication of (a) the development of numerous interlocked behavior cycles between participants collaborating on unstructured tasks and (b) the assembly of these cycles into larger subassemblies to produce information, enacted environments, cause maps, and value.

Recent theoretical work (Graen & Scandura, 1985) extended role making to encompass organizing in participant networks. Participant networks are interconnected sets of two-party (dyadic) subassemblies that enable organizations to not only manage the ambiguity of unstructured tasks but to grow beyond the limits of bureaucracy. They enable the organization to cope with levels of uncertainty that bureaucracy could never handle. Hence, participant networks make critical contributions to the overall effectiveness of the organization. The basic process involved in the emergence of these innovations is the transaction of valued inducements for contributions on unstructured tasks.

The purpose of this paper is to present the thinking and empirical research that describes the basic process by which various congruences of inducements and contributions emerge into dyadic teamwork for accomplishing unstructured tasks. In the following section, we present a descriptive model that highlights the process underlying such emergent assemblies.

A DESCRIPTIVE MODEL OF DYADIC ORGANIZING

The role making model can be diagrammed as shown in Figure 1. According to this model, two actors, a member and a superior, enter upon the scene (top of Figure 1), bringing to the dyad their respective genetic endowment, past histories, and current circumstances. At this point, the scene is laden with the trappings of the formal structural arrangements, past organization history, and current circumstances (labeled *environment* and *structure*). Beginning at this point, the model describes a general sequence of phases from (a) role taking to (b) role making to (c) role routinization.

Although the phases normally proceed in the preceding order, the failure of role making leads to a return to role taking and the failure in some aspect of role routinization leads to a return to role making. Though each phase is identifiable, aspects of all three phases may be present at the same time and each phase may vary in duration from brief to extended.

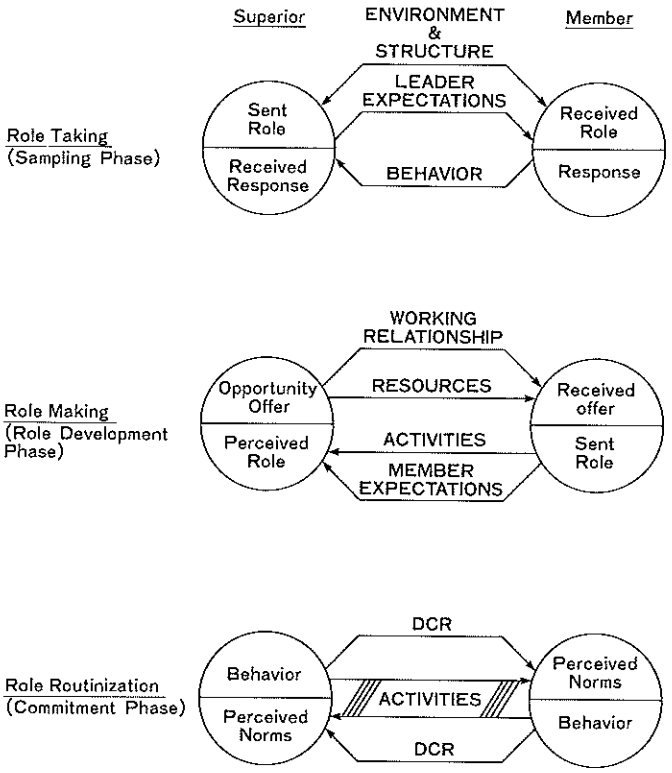

Figure 1. Descriptive Model of Role Making

Role Taking

Initial dyadic exchange is the sampling phase wherein the superior attempts to discover the relevant talents and motivations of the member through iterative testing sequences. Using different assignments, the leader can successively approximate the limits of the member on unstructured tasks and relevant relationship dimensions. Hence, this model is especially appropriate for managerial tasks. In a very short period of time, a superior employing this procedure can learn a great deal about a member. Kahn's role-episode model aptly describes the dyadic exchanges during this phase (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). According to this model, the superior initiates a *sent role* (request, demand, assignment) and communicates it to the member e.g., "Please help me formulate this unstructured task." The member receives the role *(received role)* and whatever noise was added in transmission (e.g., "The boss is lost and he wants

someone to listen"). Next, the member reacts to the received role by behaving in some relevant manner (e.g., "Okay boss, I'll listen.") This is received by the superior *(received response)* as feedback (e.g., "The member doesn't understand"). Finally, the superior evaluates the behavior and decides whether to initiate another sent role or not (e.g., "I'll try a different member"). This completes one episode in the so-called role taking model.

Clearly, in this phase, the superior acts and the member reacts; the superior is an active problem solver and the member is a passive responder. The role taking phase appears quite functional as an efficient way to socialize a member into written, organizational role and structured task procedures. At the same time, the superior learns a good deal about what a member can do and is likely to do in the future. This is the phase in which the superior gathers important information regarding the member's potential for unstructured tasks. Up to this point, the exchange is based on economic transactions—that is, the member is paid in coin for services contracted.

Role Making

When the initial phase is nearly complete, which may take a few hours or a few months, the role development phase begins. During this phase, the superior and member evolve how each will behave in various problematic situations and begin to define the nature of their dyadic relationship. This process itself is seldom explicitly discussed by the superior and member. Rather, through working together on unstructured tasks they test various dyadic interdependencies as alternative problem-solving approaches. Consequently, sets of interlocked behavior cycles that are mutually reinforcing emerge. The role making model describes the episodes that occur during this phase (Graen & Cashman, 1975).

In contrast to Kahn's model, this model allows both superior and member to initiate a sequence, although typically a superior will initiate. Hence, the following example will originate with the superior. An opportunity to attempt a certain unstructured task, implying a certain working relationship, is offered by the superior to the member. The member receives this proposal, which includes transmission noise (received offer), decides on an appropriate counter offer, and sends this offer to the superior (sent role). The superior receives the counter offer *(perceived role)* and the member's expectations concerning the transaction. Should the member agree to accept the opportunity and implied working relationship, the exchange typically involves the social acceptance by the superior and the collaboration on unstructured tasks by the member. This process continues throughout the day-to-day interactions of the superior and the member

and, over time, a set of understandings governing appropriate transactions is developed. When this process operates, members and managers negotiate because collaboration on unstructured tasks is exchanged for a dyadic social structure.

Without adequate social exchange, the process grinds to a halt or is never initiated because the acceptance of collaboration on unstructured tasks becomes too risky for members. On such tasks a member is typically in over his or her head and cannot proceed without the collaboration of the superior.

Role making is built on the mutual contribution of valued resources. Each party must offer something the other party sees as valuable and each party must see the exchange as reasonably equitable or fair. Moreover, the rules governing the exchange must be compatible to result in effective coupling of behaviors. As we shall see, role making activity has clear career-progress consequences.

Managers generally think about formal rewards when they are asked what they can exchange with their members in the case of the vertical dyad. They frequently mention salary increases, promotion recommendations, and pats on the back. However, resources to be exchanged must be both valued by their member and within a manager's personal discretion to immediately give or withhold. By *within their personal discretion* it is meant that they can give or withhold resources without the delays of first gaining approval from a higher authority. Timing is often crucial. Discovering and employing such valued resources during collaboration with members often separates highly effective from ineffective managers. Given the pressures in most organizations, identifying and providing people with what they need (resources) to collaborate on unstructured tasks often demands adaptability, open-mindedness, guts, hard work, and a lot of searching by the manager.

In addition to personal resources, many potentially available resources are byproducts of the design of the organization. Because managerial positions are designed to have higher status and greater authority than do the positions of members, managerial positions are given greater organizational resources than are those of members. These differences not only produce superior status and authority for managers but also yield "positional resources" for them to exchange with unit members and others in the organization. Of course, not all positional resources have equal value for each person. Clearly, many resources that have value for managers tend to involve instruments that can be used to affect future events.

In managerial units where all parties involved are managers, we find that superiors exchange the following positional and personal resources for collaboration on unstructured tasks (Graen & Cashman, 1975):

1. *Information:* Information is indeed valued by managers, especially

so-called inside information. Information about what is likely to happen in the future (planning about problems and opportunities, and about visibility upstairs) is instrumental information. Though the member "grapevine" is an alternative medium, it is generally a poor second to the superior's information sources. It should be noted that a superior controls this resource and can decide what information is to be shared or not shared with other members in the network. At one extreme, a superior may share none of this information with anyone else, but generally this information is shared on a need-to-know basis with his or her collaborators on unstructured tasks.

2. *Influence:* Influence in various decisions of the superior may be highly valued by various members. However, influence by members in some decisions of the superior may have no value or even a negative value. In addition, the degree of influence can vary from simple comments to an equal vote to a delegation of the decision. In sum, the degree of influence and in what types of decisions yields a decision matrix for the superior. The various cells of this matrix represent different resources for exchange with collaborators.

3. *Tasks:* Tasks can represent opportunities for professional growth and accomplishment as well as for frustration and failure. Certain tasks are valued by members of units as learning opportunities; others are valued as promoting visibility upstairs; others are valued because of side benefits. In other words, tasks tend to be complex packages. The recent job enrichment movement is built on the power of various aspects of tasks. Superiors can delegate attractive tasks to all members, to some members and not others, or to no members. Moreover, tasks may be packaged in many different ways. Task design represents a rich area for mining a manager's positional resources.

4. *Latitude:* Authority granted to a member implies control of the latitude for its use. Superiors must decide on the amount of latitude to grant to various members on specified tasks. Some members may be required to gain approval at short intervals whereas others may be allowed to proceed for long periods without reporting. Furthermore, even complex tasks can be rendered trivial by overly specific instructions and short reporting periods with low latitude. Latitude represents a potentially rich area for the discovery of position resources.

5. *Support:* Support is the degree to which a superior stands behind the activities of others. Especially in high-pressure situations, it is the extent to which the superior will share some of the pressure with members. Support from one's superior becomes more highly valued by members as they accept progressively more challenging assignments. The risks of performance can be lessened by support from the superior. As with the preceding

positional resources, the personal resource of support is under the control of the superior to offer or withhold from members.

6. *Attention:* Concern for a unit member's professional development requires attention on the part of a manager. In a mentor–protege relationship, for example, the manager must carefully monitor a protege's development to be able to promote professional growth. This attention requires special effort by the manager and hence is under the control of the manager. This personal resource is valued most by those members who seek rapid professional growth and advancement.

Role Routinization

After the development phase, the behaviors of superior and member become interlocked during role routinization. Though the coupling is basically completed and the quality is set upon a path, the routinization of dyadic understandings is necessary for efficient functioning. This dyadic understanding becomes routinized over time through the process of collaborating closely on different unstructured tasks. Success experienced by both parties as a result of adherence by both parties to the emergent behaviors, while dealing with various unstructured tasks, tend to temper or change dyadic understandings as mutual expectations become crystallized. Those coordinated behaviors that are judged effective tend to be strengthened, whereas, those that are seen as ineffective tend to be weakened.

The model describing this phase of dyadic role development is one of functional interdependence. If one were to do a cross-sectional study of the dyad at this phase, one might attempt to explain the orderly sequences of reciprocal behavior between superior and member as being caused by a structural arrangement that dictates that they must depend on one another in their present dyadic interactions. This may be true, but it overlooks the possibility that there may have been alternative arrangements during role making. To fully understand the nature of the routinization of roles that produce stable forms of dyadic structures, we must examine and attempt to describe the developmental process that results in orderly patterns of interdependent action.

The model that describes the interactions during role routinization allows either party to initiate a sequence. A member may initiate a sequence by taking some action. The other receives a signal of that behavior and, interpreting it in terms of an appropriate dyadic understanding (DU), acts to comply with that understanding. The dyadic relationship that develops around the interlocked behaviors involves the relational dimensions of trust, respect, loyalty, liking, intimacy, support, openness, and honesty (quality). The exchange of positional and personal resources of the manager

for collaboration on unstructured tasks by the member is governed by mutual expectations regarding the coupling of behaviors.

After the role routinization, these mutual expectations may become incorporated into formal documents such as job descriptions and specifications. The relationship then becomes institutionalized, and the understandings are widely visible and understood. For example, the member may receive a promotion in which greater collaboration on unstructured tasks is exchanged for a higher material compensation and greater authority. This may routinely occur in well-developed dyads; however, it should be pointed out that the formal documents specifying such agreements usually follow the negotiation process that has already occurred within the dyads.

Next, we will review variables that have been found to contribute to the process of dyadic organizing. These conditions serve as important boundary conditions to the descriptive model presented in this chapter. Research and theorizing on dyadic organizing should include careful consideration of these variables.

Variables That Contribute to Dyadic Organizing

Several conditions contribute to the success of the role-emergence process. These conditions are that the superior have (a) adequate latitude in task assignment and a need to exercise it, (b) reasonably attractive positional and personal (power) resources and the imagination to employ them, and (c) some members possessing job growth potential (ability) and the motivation to accept challenges beyond their job description. When these variables take high values, the role-emergence process is most likely to be fully elaborated.

To illustrate the importance of these boundary conditions, consider a new incumbent in a managerial position. The role emergence possibilities faced by a person who accepts a position as a manager are affected by the variables just listed. At one extreme, the administor may not be able to collaborate with a member on unstructured tasks. This may come about in a variety of different ways: (a) the organization may enforce rigid role definitions and forbid collaboration on unstructured tasks, (b) the members of the unit may maintain fixed definitions of their jobs and reject opportunities for collaboration for a number of different reasons including a lack of mutual trust, (c) peers and superiors may hold beliefs in a "fixed job" model that equates such collaboration with ineffective management and the loss of control, and (d) unstructured tasks may not be factorable in ways that are compatible with available talents and motivations within the unit.

A second important contributing variable is that the superior may not have attractive positional or personal resources with which to fund special

assignments and to reward collaboration on unstructured tasks. These resources must be both (a) attractive to the members and (b) capable of being mediated directly and immediately by the superior alone. If the superior does not possess reasonably attractive positional resources to motivate member role making, this may mean that the members (a) do not sufficiently value the resources or (b) do not believe that the resources can be mediated by the superior in valued manners.

Clearly, two factors are involved in the resource questions. First is the motivational factor. Unless resources are or can be made employable by members accepting these assignments, their usefulness as instruments for exchange may be nonexistent. Second, without reasonably attractive resources as described herein, a superior is denied (a) the inputs to transform impossibly difficult unstructured assignments for members into challenging yet doable professional growth experiences and (b) the outcomes to transform an extra-work, "gratis" assignment into a personally and professionally rewarding experience. The identification and portability of resources in various forms requires creative problem-solving skills (Basadur, Graen, & Green, 1982).

A third contributing variable for this role emergence is that some members must possess (a) growth potential (ability) and (b) motivation to accept job challenge beyond their present position. If none of the members have the minimum talents to collaborate on an unstructured task or none of the members with required talents can be motivated to accept the challenge of such a collaboration, little role emergence can take place. At the other pole of the continuum, where all members possess relevant talents and motivations, a much more favorable situation is present for the superior with a sufficient amount of latitude and resources.

Our research shows that within the same organizational unit, some members become engaged in role making activities and some members do not (Dansereau, Graen, & Haga, 1975; Graen, 1976; Graen & Cashman, 1975). Those who do appear to construct more personally and professionally compatible roles for themselves than those who do not. In addition, these role making activities have clear career development consequences. It is to these consequences that we now turn.

THE CAREER DEVELOPMENT IMPLICATIONS OF DYADIC ORGANIZING

There are many approaches to career development in organizations (Hall, 1976). The major perspectives that are relevant to the dyadic organizing approach will be reviewed briefly, followed by discussion of their contributions to the dyadic organizing model.

Schein (Van Maanen & Schein, 1979) proposes one approach to understanding the relationship between the individual and the organization perspectives on career development. Schein views the organization as a three-dimensional cone. The three dimensions represent three types of moves a person may make in the organization: (1) vertical—moving up or down represents changing one's rank or level in the organization, (2) radial—moving more (or less) "inside" the system, becoming more (or less) a central part of the inner circle acquiring increased (or decreased) influence in the system, and (3) circumferential—transferring laterally to a different function, program, or product in the organization. Three types of boundaries correspond to each type of movement: (1) hierarchical boundaries—these separate the hierarchical levels in the organization, (2) inclusion boundaries—these separate individuals or groups who differ in their degree of centrality, and (3) functional, product, or departmental boundaries—these separate departments, or different functional groupings from each other. Organizations can vary in terms of the number of each type of boundary, the permeability (ease of movement) of boundaries, and the type of filtering process (criteria for deciding who is moved). All of these factors have a bearing on both the functioning of the organization and the course of an individual's career.

The individual is seen as having (1) basic personality characteristics, which are relatively unchangeable, and (2) constructed social roles, which represent the differences in the way people present themselves in different social situations. In Schein's model, these social roles are seen as largely a result of the socialization process. Schein views the career as a two-way influence relationship (psychological contract) between the person and the organization; the person influences the organization (innovates) and is influenced by the organization.

The dyadic organizing approach takes this two-way influence process to the heart of unit functioning—to collaboration on unstructured tasks. Moreover, the emergence of supporting dyadic exchange structures for such collaboration is postulated. A member's knack for collaborating on unstructured tasks with a series of superiors is hypothesized to predict career progress.

A second approach to managerial career progress, called the *management progress model,* states that the newcomer's potential, identified at the start of a career, explains variations in outcomes of career progress at later stages (Dunnette, 1971). This approach has been applied to the selection of managerial talent by Bray and his associates (Bray & Grant, 1966; Bray, Campbell, & Grant, 1974) in a series of studies at American Telephone and Telegraph (AT&T). In the Bray and Grant (1966) study, a group of college graduates recruited by the Bell Telephone Company were given a battery of tests at the start of their employment. The new-

comer's performance on each test was rated by the assessment staff along 25 psychological dimensions assumed to be predictive of a newcomer's progress in the organization. In addition, staff members rated the overall potential of each recruit, based on the test results.

The level of managerial responsibility and the pay level each recruit attained after 8 years in the Bell System were used as criteria of management progress. It was found that of the 61 college recruits who were predicted to have the potential to reach the district manager level, 39 (64%) actually achieved that level, whereas of 62 judged not to have the potential for district manager, 20 (32%) attained that level. These results show that it is possible to predict management progress on the basis of the newcomer's potential. Subsequent research on the management progress model has supported this contention (Thomson, 1970; Greenwood & McNamara, 1967; Hinrichs, 1978; Wollowick & McNamara, 1969). After reviewing the major studies in this area, Dunnette (1971) concludes that, in general, such procedures produce satisfactory levels of reliability and predictive validity.

An additional aspect that has been identified as a correlate of management progress is the degree of initial job challenge. Results from a number of different studies (Berlew & Hall, 1966; Schein, 1967; Hall & Lawler, 1969) show clearly that job challenge is very important to the way a person's career develops. A study of young male managers (Berlew & Hall, 1966) followed managers at AT&T for 5 years and for 7 years. Performance was evaluated by salary scale and ratings from supervisors and other persons who were in a position to evaluate them. Results of this study show that the more challenging a person's job was in his first year with the organization, the more effective and successful he was even 5 or 7 years later. Moreover, these predictive relationships between job challenge and career progress were significant after ability differences were controlled.

Unfortunately, the amount of challenge in initial jobs in most organizations is invariably low, despite its importance (Hall, 1976). In a study of R & D organizations, there were only 2 companies out of 22 interviewed in which people described their first jobs as being high or moderately high on challenge (Hall & Lawler, 1969). Only one company had a conscious policy of making the first assignments difficult. Most companies had policies designed to bring the person along slowly, starting him or her off on an easy project and cautiously adding more challenge only as the recruit proved his or her ability at each stage of development.

The management progress model is, however, an input–output approach to management development. It assumes that if the characteristics of the input (in this case, newcomers to the organization) can be specified, then the relevant outcomes can be known. The model pays little attention to the developmental process that takes place *after* the newcomer has joined

the organization. In the initial excitement regarding the promise of the assessment center approach to management progress, many forgot that, in the pioneering work of Bray and his associates, 32% of the newcomers judged as *not* having the potential for district manager *actually made it* to that level. Apparently, something significant happened in the careers of those managers following the test sessions. Such developmental processes cannot be investigated using only an input–output approach to career progress. The present paper is dedicated to the task of describing some of the developmental processes that are relevant to the career progress of newcomers in organizations.

A study by Wakabayashi and Graen (1984) investigated the effects of early role making experiences and assessed ability on later career progress of college graduates in one multinational corporation. This 13-year panel study followed all 85 college graduates who joined the corporation in 1972. These newcomers were given a battery of tests before the start of employment and were surveyed repeatedly (7 times) over their first 3 years of employment concerning their role making activities. In addition, the immediate superior of each newcomer was surveyed at each of the 7 occasions regarding the role making activities of the newcomer.

This study found that the quality of the dyadic structure (measured by leader–member exchange [LMX]) during the first 3 years of employment was positively related to career progress (measured by speed of promotion) at 7 and 13 years of employment. Those newcomers who experienced higher quality dyadic structures demonstrated higher career progress. Moreover, this study found that ability assessed before entry moderated the predictive relationship between quality of dyadic structure and career progress at both 7 and 13 years. In what appears to be a compensatory fashion, those young managers who were higher on either or both quality or ability showed more rapid promotions than those who were lower on both. Hence, there appear to be two separate paths to career success—high ability and high role making expertise. Having both qualities demonstrated no special advantage, but having neither showed a clear disadvantage. If one is not blessed with higher ability and does not develop higher role making experience, one is apt to suffer the career consequences of poor management progress.

Based on the differences in predictive relationships between 7 and 13 years of employment, we may speculate that the contribution of early role making experiences grows while that of ability fades as the newcomers move up the corporate ladder. As these managers move even higher in their corporation, the key to career success is likely to rest even more on dyadic role making.

Comparing the preceding results to those of Berlew and Hall (1966) suggests that the degree of job challenge in the first year may have tapped

the role making activities of newcomers. If this were the case, it would mean that superiors were engaged in more than the delegation of challenging assignments to newcomers, as the preceding descriptive model illustrates.

Given that some newcomers experience early role making activities with their immediate superior and others do not, the question of selection criteria is raised. What do superiors look for when seeking a member to collaborate on an unstructured task?

When we asked a sample of managers to describe two of their present members who were comparable in promotion potential, education, sex, and race, but who differed in terms of the managers' professional investment, we found clear differences. Those members who were selected by their superiors for such investment were described as (a) being more likely to make the same decisions as their superior on unstructured tasks, (b) being more likely, when needed, to complete an assignment started by their superior, and (c) having a more effective working relationship with the superior. Although these factors appear to describe outcomes of the role making process, they suggest the kind of characteristics that are likely to be attractive to the superior. Superiors appear to select those members who are similar to them in decision making on unstructured tasks, who are dependable in the sense that they can be counted on to complete the superior's task when necessary, and who are effectively teamed with the superior. Though research is needed on the career implications of dyadic organizing, research suggests that the contribution of dyadic organizing does not stop at the boundary of a particular dyad, but can extend over careers. Now that we have discussed the career implications of dyadic organizing, including the clear advantage of early role making activities, we shall discuss the research base that underpins our descriptive model.

RESEARCH ON DYADIC ORGANIZING

The program of research on dyadic organizing has generated a number of empirical indicators that can be used to measure aspects of dyadic structure. The most widely used measure is the leader–member exchange measure. The LMX taps into the quality of the exchange developed and has evolved from the 2-item Negotiating Latitude measure used in the discovery study by Dansereau et al., (1975). To get a better handhold on the "slippery face of the outcropping," 2 additional items were added in a later study by Graen and Cashman (1975), resulting in a 4-item measure of the dyadic exchange. The current form of the measure has 7 items and was developed by Graen, Novak, and Sommerkamp (1982) and used in

Graen, Liden, and Hoel (1982); Scandura and Graen (1984); Seers and Graen (1984); Graen, Scandura, and Graen (1986); and Novak and Graen, (1985). In addition there is a 12-item Japanese translation of this measure that was used by Wakabayashi, Minami, Hashimoto, Sano, Graen, and Novak (1981) and Wakabayashi and Graen (1984). The number of items was increased over time to improve measurement of the exchange aspect. Only items that resulted in a net gain in construct validity were added to the LMX measure. The construct validation of this measure has shown that the quality of exchange validity is *decreased* by items tapping into the affective aspect (i.e., "liking" or "satisfaction with supervisor"). The predictive validity of the LMX measure on performance criteria outside of self-report measures is also reduced when affect items are included in the measure (for example, see Graen, Liden, & Hoel, 1982). Hence, it appears that satisfaction with the supervisor is a separate construct and not isomorphic, in relationship to outside variables, with the quality of leader–member exchange.

Leader–member exchange is also assessed from the manager's point of view (superior leader–member exchange [SLMX]). This measure contains a set of 7 questions that parallel those asked of the member about the relationship. As in the LMX, the centroid question asks about the *relative effectiveness of the dyadic working relationship*. The main difficulty with this and other measures of the dyad taken from the superior's point of view is the tendency for superiors to respond somewhat defensively and give "socially desirable" answers. For example, there appears to be a tendency for supervisors to say that they treat all subordinates alike. They are reluctant to discriminate between lower and higher quality dyads. Apparently, they are apprehensive about a perceived evaluation of the adequacy of their role performance. It is not unusual on the first wave of data to get a severe restriction of range of superiors' reports compared to their members' reports about the same dyads. Fortunately, over repeated waves the superiors' reports become less restricted and show progressively higher agreement with their members' reports.

A graphic depiction of the value of the construct and some of its various outcroppings are shown in Figure 2. This figure shows a double helix model of the dyadic structure. These helices are (1) the *quality* of the dyadic interaction and (2) the *coupling* of behaviors of the manager and the member. The quality helix has been measured by the various empirical indicators including leader–member exchange, superior leader–member exchange, dyadic loyalty, dyadic support, and dyadic trust, among others. As shown in Figure 2, these measures tap into various aspects of the quality of the relationship through the viewpoints of both manager and member. Although many aspects of the quality dimension have been iden-

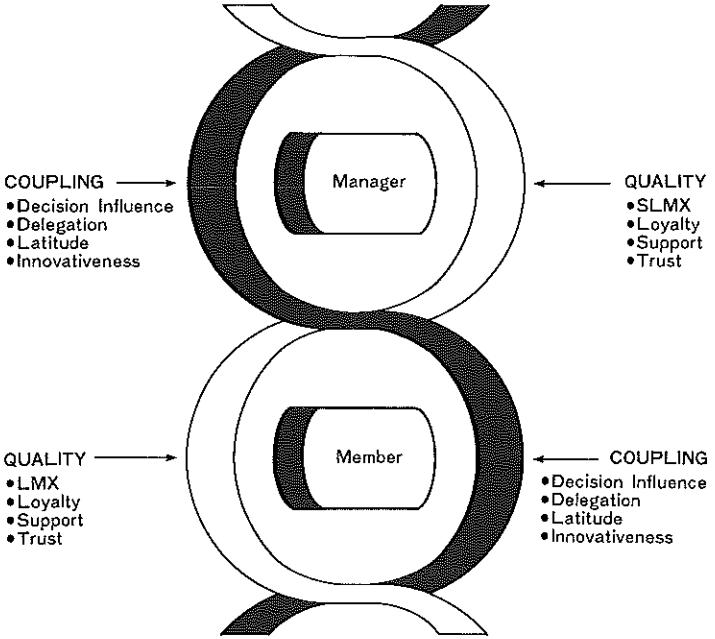

Figure 2. Two Dimensions of Leader-Member Exchange

tified, future descriptive research should attempt to uncover more of the outcroppings of this mutual bond.

The second helix, coupling, refers to the interlocking of manager and member behaviors. This dimension is a reciprocal influence system through which the behaviors of the members of the dyad become interdependent. These couplings appear to become elaborated as the relationship matures, and form the basis of the relational-quality dimension. The behaviors of manager and member become more loosely coupled when this relational aspect takes over and the coupling becomes routinized (see discussion of role routinization in the "Descriptive Model" section of this paper). At this point in the maturity of the coupling, the manager may begin to delegate important responsibilities to the member and allow a great deal of latitude in their accomplishment. The member needs less direction ("initiation of structure") to complete the assignment than at earlier phases in the development.

The coupling helix shown in Figure 2 has been tapped empirically by various measures including decision influence, delegation, latitude, and innovativeness, among others. Again, these measures are taken from both

points of view. We suggest longitudinal research designs with multiple measurement points that document specific behaviors, as well as contextual parameters of both members of the dyad. Explication of reciprocal patterns and their relationship to the quality dimensions should provide new insight into the emergence and maintenance of the dyadic structures that comprise complex organizational life.

Next, we will turn to some important methodological issues in the study of dyadic organizing. The "within versus between unit" controversy will be discussed in terms of the level of conceptualization, measurement, and analysis of dyadic constructs.

Level of Analysis

Let us address the issue of the level of conceptualization, measurement, and analysis involving the quality of the dyadic structure compared with traditional leadership theory. Much of the confusion in the literature on "within versus between unit" measures of the dyadic structure appears to stem from a few basic misunderstandings of this issue.

Contemporary leadership theory (Jacobs, 1970; Stogdill, 1974) examines the dimensions of leadership, identified by various researchers as "initiation of structure and consideration," "concern for production and concern for people," "production and maintenance," or "task oriented and relationship oriented at the organizational-unit level" (including all members reporting directly to a single manager). Therefore, these concepts are defined at the unit level and should be measured and analyzed at the unit level. A common measurement practice of The Ohio State University approach was to collect information from three or more members of a unit regarding the leader (Leader Behavior Description Questionnaire [LBDQ]) and to average these data into a single composite on each leadership dimension for that unit. Then, analysis of these measures would be conducted at the *unit* level (individual measures of member performance, satisfaction, grievances, turnover, and the like were also averaged at the unit level). Thus, the traditional approach appropriately analyzed unit-level data by using measures consistently developed for the unit level of conceptualization.

The dyadic approach, in contrast, posits the dimensions of quality and coupling of behavior at the dyad level. Concepts are defined at this level and should be appropriately measured and analyzed at this level. Our standard measurement practice is to collect information from all members of a unit, including the manager, regarding the various aspects of dyadic structure (trust, respect, loyalty, liking, intimacy, support, openness, honesty) and effectiveness of the coupling of behavior, and to score these

data at the dyad level on each dimension. Next, analysis of these measures remains at the dyad level. The construct validity question of whether peer observors can accurately assess dyadic structure will be addressed later.

The measurement question addressed by the "within unit versus between unit" research was whether or not the dyad level contained any incremental validity for predicting organizational outcomes over and above that at the unit level. That is, do measures of aspects of dyadic organizing (such as LMX) taken at the dyad level contain valid variance not tapped into by unit-level measures? Because the unit-level measurement of leadership dimensions are experimentally *confounded* with numerous other factors at the unit-level (such as the supply of organizational resources, the value of human potential, the opportunities and threats in its environments, the history of success and failure in the unit, and the like), the question becomes whether the dyadic approach can show validity, controlling for all these unit-level factors. As far as we can determine, this has never been empirically shown for the unit-level leadership theories.

Although a number of studies have investigated this question (Dansereau et al., 1975; Graen & Cashman, 1975; Schiemann, 1977; Katerberg & Hom, 1981), none of them employed an experimentally independent criterion. The first to use such a criterion were Graen, Liden, and Hoel (1982). In this investigation of information systems professionals, they found that the relative value of dyadic quality (measured by leader–member exchange score minus the unit-average leader–member exchange score) predicted employee turnover 18 months later. The lower the relative value of quality of exchange (measured 18 months earlier), the higher the proportion of members who left the organization. Surprisingly, the average (mean) value of dyadic quality (unit level) did not predict turnover. Thus, turnover was not related to the unit's average (mean). All predictable turnover was within units and not between units. Moreover, measures of satisfaction (Job Descriptive Index measures of work, superior, co-worker, pay, and promotion) taken 18 months earlier failed to predict turnover after the contribution of relative dyadic quality was removed. Without question, the relative value of exchange quality contains incremental validity to predict organizationally relevant outcomes.

The study by Graen, Liden, and Hoel (1982) shows rather clearly that the dyadic approach can demonstrate predictive validity with an experimentally independent criterion (turnover), while controlling for all unit-level confounding factors, including the unit-level leadership dimensions. This was an extremely severe test for the dyadic-structure model, because a good deal of its valid variance was partialled out for the purposes of this test. Subtracting the quality score of a particular dyadic structure from the average of the unit scores produces a measure of the "relative value" of that quality within the unit. *Relative value* is defined as the

difference between the quality of the focal dyad and the average (mean) quality of all other vertical dyads in a particular unit.

Ferris (1985) replicated the Graen, Liden, and Hoel results. He found that the relative value of dyadic quality scores (measured by leader–member exchange subtracted from the LMX unit mean) predicted turnover and the average unit quality did not. Those persons in dyads with lower quality relative to the average of their respective units tended to leave the organization whereas those in dyads with higher relative quality tended to remain. This significant predictive validity coefficient for relative value of leader–member exchange supported the assumption that the dyadic level contains incremental validity for predicting organizational outcomes. Clearly, processes are at work inside of units that produce dyadic differences that have predictable organizational consequences.

Our current understanding of the "within versus between" controversy is that both unit-level (between) and dyadic-level (within) variation can predict organizationally relevant outcomes. One challenge for research is to discover how the various dyadic processes combine to produce unit processes. One approach to this task is to attempt to understand how dyadic differences are produced within ongoing units. One way to begin is to find organizations that are faced with the task of producing new dyadic structures, and intensively research the development of these structures over time from a number of different points of view. We next turn to the results of these studies on dyadic role emergence.

Dyadic Role Emergence

Graen, Orris, and Johnson (1973), in a longitudinal field investigation, studied new hires from the first day on the job until 4 months later. They found that supervisors established effective dyadic structures with some newcomers and established ineffective structures with others. Specifically, the supervisors imposed a self-fulfilling prophecy on the newcomers. They believed that they could predict which newcomers would stay and which would leave within a few months, and they acted on this belief. For those whom they predicted would leave, they invested a minimum of time and energy. At times, they practiced "benign neglect." In contrast, for those whom they predicted would stay, they invested a good deal of time and energy in their development and care. The result was two very different kinds of dyadic structures. Those predicted to leave early suffered increased ambiguity about what their supervisor wanted them to do; this began in the second week, increased in the fourth week, and increased again the seventh and twelfth weeks. In sharp contrast, those predicted to stay suffered little ambiguity about their supervisor's demands after the first week. As might be expected, by the twelfth week most of those

treated as "short timers" left the organization and most of those accepted as "long timers" remained. Hence, the differentiation of dyads within units occurred very early in the dyadic interaction process and had significant implications for career outcomes of members 3 months later.

If supervisors can enact different dyadic structures for different members and these differences can contribute to career-progress outcomes (in the preceding study, the decision to quit or to stay on the job), can managers do this differently for different members within the same unit? A study by Dansereau, et al. (1975) addressed this question. In this study, an entire management hierarchy was investigated longitudinally over 9 months. Fortunately for this study, as a result of a company reorganization, 90% of the direct superior–member dyads contained at least one new manager. Hence, the study began with the emergence of 90% of the dyadic structures and followed this development for 9 months. By systematically administering questionnaires and interviewing both members of each managerial dyad four times over the 9 months (in the first, fourth, seventh, and ninth months), the role making process was documented.

The results of this anthropological investigation of managers developing dyadic structures—from the state of strangers thrown into a shared destiny by the fates to the state of well-known colleagues locked into shared dyadic structures—were rather revealing. In sharp contradiction to the conventional theory that managers treated all members reporting directly to them in the same manner and hence developed very similar dyadic structures with all members of their unit, the results of this longitudinal study demonstrated the development of extremely dissimilar structures within the same unit. This differentiation process was the norm; different dyadic structures were enacted for different members in all of the work units studied. The variance in these dyadic structures ranged from those which approached the highest level ("mentor–protege") down to those which approached the lowest value ("overseer–peon") and contained many gradations between these two extreme poles. The mentor–protege dyad was characterized by extremely high *quality* (trust, respect, loyalty, liking, intimacy, support, openness, and honesty) and effective *coupling* of behaviors. At the opposite pole, the overseer–peon dyad was characterized by extremely low *quality* and ineffective *coupling* of behaviors.

One of the most revealing aspects of this study is that the quality of the structure was found to be predictable, using information collected during the *very first month* of the dyadic interaction process. Based on the answers to two questions about the quality of the structure, (called *negotiating latitude* in this study), the development over 9 months of the various dyadic structures could be predicted quite well. Therefore, the dyadic structure was placed on a high-, medium-, or low-quality path very early in the dyadic interaction process (during the first month) and con-

tinued to be elaborated over time along whichever path initially was selected.

A second question of interest in this investigation is whether the *relative value* of the quality of each dyadic exchange *within a unit* can contribute to career outcomes. Recall that *relative value* is defined as the difference between the quality of the focal dyad and the average (mean) quality of all other dyads in a particular unit. The relative value of each dyadic exchange within a unit was predicted as a positive relationship over time (fourth, seventh, and ninth months later) by members' responses to the two questions (negotiating latitude). The results demonstrate the construct validity of the relative value measure of dyadic quality. Therefore, even after the average of dyadic quality for each unit (between-unit variance) was partialled out by using the relative value (within-unit variance) measure, the quality of the dyad predicted career outcomes over 9 months. Thus, within-unit variance predicted over time.

If managers can enact different dyadic structures over time within the same unit, can members negotiate with managers around the issues of unit functioning? And, can the relative value contribute to this negotiation of issues of unit functioning? These questions were the focus of a study by Graen and Cashman (1975). In this longitudinal panel investigation, three entire managerial hierarchies were studied over a 9-month period (again, questionnaires and interviews with both members of each dyad were conducted during the first, fourth, seventh, and ninth months). The results demonstrated that within most units those members in higher quality dyadic structures spent more time on administrative (less structured) duties and less time on routine functioning than did those members in lower relative value dyads. In addition, the relative value within the unit also showed that members in the higher relative value structures did more administrative (less structured) and less routine activities than did the lower relative value members of the unit. Moreover, the managers and the members negotiated these differences in behavior around issues of unit functioning. Members in the higher relative value structures showed greater involvement in the more responsible and less structured administrative activities and lower involvement in the less responsible routine activities. Finally, this more responsible involvement in less structured tasks was exchanged for greater resources from their managers, compared with the members in lower relative value dyadic structures. Clearly, dyadic organizing is a within-unit phenomenon.

Construct Validity

This raises the question of whether or not the quality of the dyadic structure is visible to members outside of the dyad (e.g., can peers within

the same unit accurately report on the quality of various dyadic structures?). This issue was also investigated by Graen and Cashman (1975). They asked peers in the same unit as well as the manager of the unit and the focal member to estimate the quality of the focal and manager structure. All members of a unit were asked to indicate for each possible dyad involving the manager how effective the working relationship was: (a) ineffective, (b) effective, or (c) neither ineffective nor effective. The results were compared to four questions tapping leader–member exchange and included the two negotiating latitude questions and two new questions tapping aspects of the exchange. Results demonstrate that the peers' assessments of quality agreed with managers' and focal members' assessments. This agreement was as strong as agreement between managers' and focal members' assessments (agreement correlations of about .50). Moreover, questionnaire (leader–member exchange) results from both manager and focal member agreed to roughly the same degree. Clearly, the effectiveness of the dyadic working relationship is visible to peers within the same work unit and may be the heart of the quality dimension (see Figure 2). Results of this study are supported by the work of Duchon, Green, and Taber (1985).

In addition to the preceding results, all three points of view agree rather well that, *within units,* about 25% of the exchanges were effective, 25% were ineffective, and 50% were neither effective nor ineffective. Although the quality of the exchange was continuous, the effectiveness assessments were trichotomized by the method of asking the question. Thus, it appears that different methods (different ways of asking questions and asking different informants) can produce assessments of the construct that agree quite well. This method of assessment gives us confidence that we are tapping into the construct and was a necessary demonstration of the construct validity.

Communications

Although agreement between the manager and the member about the quality of the dyadic structure is related to the perceptions of the manager and the member regarding the effectiveness of the dyadic working relationship, the question remains as to whether or not dyadic quality is related to agreement between manager and member concerning aspects of the job situation (e.g., severity of job problems facing the member). Schiemann and Graen (1978) investigated this question and found that agreement between managers and members was related to dyadic quality. Members of lower quality dyadic structures showed much less agreement than did those in higher quality dyadic structures. Moreover, the threshold for this agreement was rather low. Apparently, above a certain minimal level, the

manager and the member shared enough common reality to develop adequate agreement about the job situation.

The next question is whether the relative quality of dyadic structure within units can predict variability in the communications patterns in leader–member dyads. These questions were investigated by Schiemann (1977). He found that those members in relatively higher quality dyads (measured by leader–member exchange) communicated more frequently with their managers about administrative and technical matters than did members in relatively lower quality dyads. These results were cross-validated on a holdout sample of managers. Overall, there was much more communication in the higher quality than in the lower quality dyads. The answer to the question posed here is clearly affirmative and suggests that effective communication is an important aspect of the emergence of high-quality dyads within units.

Linking Pin

Moving the focus of our discussion to the dyad immediately above the one we have been discussing (between the manager as lower member and his or her boss), the question arises as to whether or not the dyadic relationship between the manager and his or her boss produces resources that are useful to members (two levels below the boss). Also, do linkages generate different flows of resources? These questions were studied by Graen, Cashman, Ginsburgh, and Schiemann (1978). They found that the quality of the upper dyad in this "linking pin" was related to the resources available to members a level below. Those managers who developed higher quality linkages with their bosses produced greater resources for their members than did those managers who developed lower quality linkages. Moreover, these linkages make a difference in terms of producing resource flows. From highest to lowest resource flow to members, the dyads were ordered as (a) higher quality dyadic linkages in both upper units and lower units, (b) higher quality dyadic linkages in upper unit but not in lower unit and vice versa, and (c) lower quality dyadic linkages in both units. Results show that the richest flow is the first listed (both higher quality) and the poorest is the last listed (both lower quality). In terms of resource dependency, the quality at the linking pin between upper and lower dyads in the management hierarchy appears to be critical. Although a member can have very little impact on the value of the upper dyad, he or she may benefit or suffer in terms of resource flows that are dependent on its quality. Clearly, linking pins were found to vary in amount of resources flowing to members a level below, and these resources are the petrol that fuels accomplishments in the organization.

Turning back to the lower dyad, the question of the generalizability of

this process down the organizational hierarchy is relevant. Given that resources are exchanged between manager and member and that first-level supervisors have relatively fewer resources to exchange, the question becomes whether the process of role emergence is truncated for the lowest level of supervision. A study by Liden and Graen (1980) addressed this question in a longitudinal investigation comparing these processes for managerial units and foreman units. The results show evidence of predictability for the foreman dyads. Some foremen appeared to collaborate with their bosses on unstructured tasks and to receive appropriate resources in return and others within the same units did not. Hence, variation in dyadic quality appears to occur within foremen units and the dyadic organizing process does not appear to be truncated for lower levels of supervision.

Experimental Evidence in the Field

The next question is whether or not we know enough about how to produce the development of new roles to make it happen in an ongoing work organization. If we do know enough and can train managers to do it properly, we can have confidence in the validity of a number of hypothesized relationships in the model. Clearly, this would be a severe challenge for any descriptive model, because it is a quantum leap from a descriptive to a prescriptive model.

This task was undertaken by the Graen, Novak and Sommerkamp study (1982). In this field experiment, managers of information processing technicians were trained (experimental condition) or not trained (placebo control condition) in the theory and procedures of the role making model. During the 26 weeks of the experiment, the managers were trained to use the model specifically with their members, and were required to meet with each of their members individually and complete a script that they had role played many times in training. By the end of the 14th week, all individual role making interviews were completed for the experimental group, and the treatment was in effect from week 15 to week 26.

The results of this field experiment were most gratifying and quite revealing. The experimental group (those under the role making condition) demonstrated large improvements in all areas tested, from 14 weeks before the treatment to 12 weeks after the treatment, compared with the placebo control condition group. The areas tested for change from before to after the treatment were (a) hard productivity (quantity and quality of work produced on the computer), (b) work-itself measures (motivating potential of the job, preferred work load, role conflict, role ambiguity, and career relevance of the job), (c) dyadic structure (leader–member exchange from both points of view, dyadic loyalty, and superior support), and job sat-

isfaction (overall and facets: leader, work, pay, social, and security). All of the preceding measures demonstrated significant *improvements* for the experimental over the control group with the exception of the satisfaction measures, which only showed significant gains for overall and security satisfaction. Satisfaction with the manager (liking) failed to show a significant result. Clearly, satisfaction with manager (liking) is different from the quality of the dyadic structure.

On a practical level, the results indicate that the managers and the technicians under the experimental condition had developed a new set of dyadic structures compared with those in the control condition. They improved their average productivity over 16%, resulting in a projected annual cost savings of over $5 million systemwide. Moreover, the gains in quantity were not made at the expense of quality. Equally important, members indicated that they preferred to be producing at this 16% higher level. Finally, it should be noted that these improvements were done holding all ability, resource, and other confounding factors constant.

Another question Graen, Novak, and Sommerkamp (1982) investigated in their study was whether individual motivation would moderate the effects of this treatment. Employing Hackman and Oldham's (1975) measure of growth need strength (GNS), they found that GNS moderated the effect of the treatment for productivity, and preferred work load as hypothesized. By trichotomizing GNS into lower third, medium third, and higher third, they found that the treatment produced no gains for the lower and medium, but exceedingly strong improvement for the higher third. The higher GNS group showed a 52% improvement in hard productivity.

This moderating effect of GNS on the treatment was replicated in a field experiment on a comparable sample of employees conducted by Graen et al. (1985). In this field experiment, the higher GNS group showed an outstanding 54% improvement in hard productivity and the lower and medium GNS groups demonstrated no significant improvements. In addition, quality of production actually improved following the training, as documented by decreases in the number of errors per weekly caseload.

Given that this model, when followed properly, can produce such desirable results by tapping into the vast reserve of human potential, the question becomes whether this training benefits members having initially lower quality, by offering them the opportunity for higher quality. This question was researched by Scandura and Graen (1984). Controlling for regression effects, their study found that those initially lower in dyadic quality improved their productivity more than did those initially higher in quality. Thus, the training resulted in a restructuring of dyadic quality within units that was related to significant improvements in hard productivity, but not at the expense of quality or job attitudes. It should be noted that in this study the initial value of dyadic quality was a relative value

measure taken within units. The results of the Scandura and Graen (1984) study suggest that the function of implementing the role making procedures within units is to change the "rules of the game." Under the new rules, members have the opportunity to rise or sink, and generally find that their dyadic structure has a new quality. Perhaps, the role-making procedures bring with them a new management philosophy—a philosophy based more on merit, participation, the development of human potential, and dyadic symbiosis.

Dyadic Networks

It should be noted that any focal actor can share a large number of different dyads. Each engages only a part of the focal actor's personality and comprises only a part of his or her environment. The total set of all relevant dyads for a focal actor within an organization is conceptualized as a dyadic network. Such a network may include dyads to which the focal actor is not a member (e.g., the one immediately above in the hierarchy). The referent is clearly the individual's and not the organization's dyadic network.

An illustration of such a network is depicted in Figure 3. As shown in this figure, the network involves dyads of vertical, horizontal, diagonal, and connected types. Those including the focal actor (the position of focus) are part of what we call the dyadic assembly (for example, the link to Actor B in Figure 3). Those not including the focal actor but coupled to some component of the dyadic assembly are the connected dyads (for example Actor Z in Figure 3).

Drawing a boundary around the limits of the network is problematic. However, as the distance in connections from that including the focal actor increases and the number of reinforcing links decrease, the relevance to the focal dyad decreases and eventually disappears. In Figure 3, the more relevant dyad would involve Actor A and Actor B (sharing dyads with multiple connecting dyads), and the least relevant would involve Actor Z (distantly connected with only a single connection). For any focal actor, the network can be mapped conceptually and empirically. In fact, by mapping the networks of all members of a particular organizational unit, an understructure can be made visible and analyzable. This understructure represents a hidden face of social organization.

What is needed is research on other types of dyadic relationships such as between focal actor and Actor B. Research on peer dyads, such as between focal actor and Actor B, was done in a recent study by Weitzel and Graen (1985). In this study of information systems professionals and their clients, a large number of possible confounding factors were measured and analyzed in a multiple regression analysis. The contributions of the possible confounding factors were estimated separately from the measures

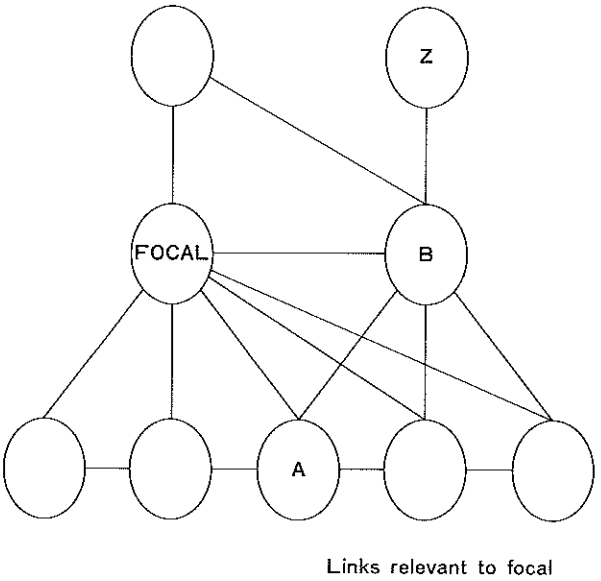

Figure 3. Dyadic Assembly

of the quality of the dyad. This study shows that dyadic quality is significantly related to project-process effectiveness, controlling for several possible confounding factors such as technical training and work background of both parties, the technical competence of the staff, and the computer anxiety of the user. It should be noted that this study focused on peer dyads—an information systems project director and a user in a separate department. Hence, this research is an example of the examination of important dyads other than direct reporting relationships.

Research Designs Employed in Researching the Model

As described earlier, many different kinds of research designs are useful in attempting to understand the dyadic process and to document that understanding. The early studies primarily used discovery and secondarily used testing designs, whereas the later studies tend to reverse this ordering of priorities. However, each research study is designed to be part testing and part exploration and discovery. Clearly, the rule we attempt to follow is this: Keep your mind alert to new insights and actively seek disconfirmation, but be careful not to fool yourself. We believe that the interaction between insights and empirical results over time in an iterative process is a useful way to understand a complex social system. Moreover, we approach this task as analogous to solving a complex puzzle in which each

part of the puzzle is the answer to a researchable question. The challenge is to discover the right question to research and to empirically document that finding.

One of the main threats to successful discovery of the right research question is that we tend to generalize prematurely, but people in organizations operate in specific cases and may not recognize questions about the general case. Our abstract categories are often too inclusive and may be meaningless to our respondents (e.g., "consideration" or "in-group and out-group"). We must constantly remind ourselves to employ the subjects' conceptualization and their language—after we have learned their language very well.

We attempt not to be too provincial in our choice of research designs. The designs we have used range from those of cultural anthropology (nonparticipant—free observation) to those of social psychology (longitudinal and cross-sectional questionnaire and interview surveys) to those of psychometrics (multimethod matrix) to industrial–organizational psychology (field experiments of program implementations) to management (assessment of management philosophy). Each of our designs attempts to be part qualitative and part quantitative (see description of Dansereau et al. 1975), because we believe that it makes no more sense to precisely measure an invalid construct than it does to shoddily measure a highly valid construct. To do one without the other is a waste of valuable research effort. Therefore, once we have discovered a potentially valid construct, we attempt to continually develop better and better measures of it. A good example of this is the development of various measures to tap into the quality of the dyad traced in the preceding section of this paper.

Although we attempt to be quite open to various kinds of designs, we have found that longitudinal designs have been the most useful. We find that unless we have at least two data points separated by some interval of time, we cannot discover predictive or postdictive relationships. It is also an advantage to collect information on the same variables on two separate occasions, in order to estimate the stability of values and relationships. In addition, we find that repeated collection of information from the same respondents over time allows us to establish better controls over several sources of error (see Graen, 1976, for a detailed discussion of these sources of error).

We believe that the research strategy of choice is to find the right research question (satisficing and not optimizing), to collect high-quality data, and to follow it with analysis wherever it leads. The trick is to collect the highest quality data, and we attempt this by working to identify and minimize the various sources of error in our data (including our own personal biases). We believe that not all responses are equally valid indicators of the construct of interest and we continually attempt to increase the

signal-to-noise ratio. It is our belief that this ratio may be increased by attention to the details of measurement and research design for investigating dyadic organizing that have been discussed in this section.

SUMMARY

We imagine that Chester Barnard would find the phenomenology of our discussion extremely familiar and descriptive, given his experiences as a manager. In fact, the common reaction of managers to this phenomenology is that it describes the world in which they live rather well and they are surprised that we can do research on such complicated processes.

The fact that managers recognize the phenomenological validity of our model should not come as a surprise to the reader, because we employed a research program sometimes referred to as *grounded theory building* (Glaser & Strauss, 1967). Following this kind of process, we began by carefully mapping the empirical world of practicing managers as they see it; we then conceptualized it and reported it using their language. We went beyond the limits of the individual manager (who is trapped within his or her position) by gathering independent information about the same variables from several different sources and over significant intervals of time. Moreover, collecting information from a particular manager about the same variables over a significant interval of time (2 or 3 months) and recording this information produces more accurate information than that available upon recall by the manager. As noted by Graen (1976), this superior accuracy can be employed to minimize certain biases in reports by managers.

We have attempted to bring together current theory and research on the dyadic approach to understanding how the behavior of individuals becomes teamwork for accomplishing unstructured tasks (dyadic organizing). Our major points can be summarized as follows.

1. Dyadic organizing processes are contingent on the nature of the tasks to be organized. Specifically, structured tasks that can be reduced to written behavioral operations may require only a role-taking process. In contrast, unstructured tasks that cannot be so reduced may require a role routinization process in addition to role making.
2. Even within organizational units, various dyadic structures composed of interlocked behaviors are organized to accomplish unstructured tasks, and supporting dyadic understandings emerge during the role making and role routinization processes.
3. These variations in quality of dyadic structures within units have implications for both organizational and career outcomes.

4. Research is needed to determine the effects of various organizational systems on dyadic organizing and vice versa.

It is our hope that this paper will serve as a stimulus to both practitioners and scholars to attempt to understand the phenomenology of dyadic organizing. We believe that it is a useful heuristic device in our endeavors to understand fundamental processes of behavior in organizations.

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