LIMITS OF MULTIPLE GROUP MEMBERSHIP
IN R&D PROJECT GROUPS

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Abstract

The moderating effect of single versus multiple group membership on the relationship between group characteristics and individual role perceptions was investigated within an R&D organization. Differential effects include cohesiveness on role overload and ambiguity; goal clarity on role clarity, internal fragmentation on role load. No effects were found for homogeneity and communications.

Multiple group memberships are a fact of life in contemporary organizations. Groups are particularly suited to address complex and nonroutine tasks which require diverse expertise and/or high levels of innovation. Individuals often belong to permanent work groups while serving on committees, project teams, task forces and the like. In addition to their suitability for specific types of tasks, sociotechnical systems theorists have demonstrated the utility of designing groups to generate work group processes known to be associated with more positive role perceptions, employee satisfaction and productivity (Trist, 1982). Finally, groups have been used to manage workers through various participative schemes such as total quality management programs. These programs may be seen as attempts to emulate the effectiveness of the pervasive group orientation associated with Japanese management. Given the increasing environmental turbulence most corporations face, competitive demands for innovation and technological requirements for interdisciplinary collaboration, the impact of multiple group memberships are of practical significance.

From both a practical and theoretical standpoint, the group outcomes of interest are task performance and member satisfaction. Both of these outcomes are affected by the individual's role perceptions. In organizations, role perceptions have multiple determinants including the formal job description, reward systems, organizational structure, managerial processes and culture. However, the point of contact between the individual and the organization is the work group and for this reason we view the characteristics of the work group as the proximal cause of the individual's role perceptions. When the individual is member of multiple groups, questions arise as to how group influence aggregates and identifications form to impact role perceptions.

Group identification and role characteristics have "bottom-line" consequences for the organization (Ashford and Mael, 1989; Keller, 1986; Pelz and Andrews, 1976). For example, Jackson and Schuler's (1985) meta-analysis of predictors of individual performance found a significant .3 correlation between role ambiguity, conflict and performance. While most

project management studies have focused on unit rather than individual performance, we would expect to find some correlation between the two levels of analysis, especially in R&D organizations. Individuals who receive consistent messages from members in different project teams should have lower levels of conflict and clearer expectations should result in less role ambiguity and role overload. Thus, it would seem that R & D performance is not only based on project group characteristics, but also the individual's role set within the broader umbrella of project groups within the whole R & D organization.

Unfortunately, our understanding of how work group characteristics impact individual role perceptions assumes single group membership, (Hackman, 1990) and our empirical methods have been restricted to the study of single short term groups or a single project of an ongoing group, (Pelz & Andrews, 1976; McGrath, 1984). Despite the recent increase in work group research, (Gladstein, 1984; Hackman, 1990) no one has examined the relative impact of multiple group memberships on individual behavior in organizational roles. Thus, there is no clear basis on which to generalize to the multiple group membership case.

The objective of this paper is to examine the impact of single versus multiple group membership on the relationship between work group characteristics and role perceptions. To develop an appropriate theoretical framework for this study we draw on existing conceptual models of work group processes, organizational roles and social identity.

Work Group Processes

While there is no general consensus on the definition of a group, Alderfer (1977) has developed a definition specific to groups in an organizational context:

> A human group is a collection of individuals: (1) who have significantly interdependent relations with each other, (2) who perceive themselves as a group by reliably distinguishing members from non-members, (3) whose group identity is recognized by non-members, (4) who as group members acting alone or in concert, have significantly interdependent relations with other groups and (5) whose roles in the group are therefore a function of expectations from themselves, from other group members and from non-members. (p. 230)
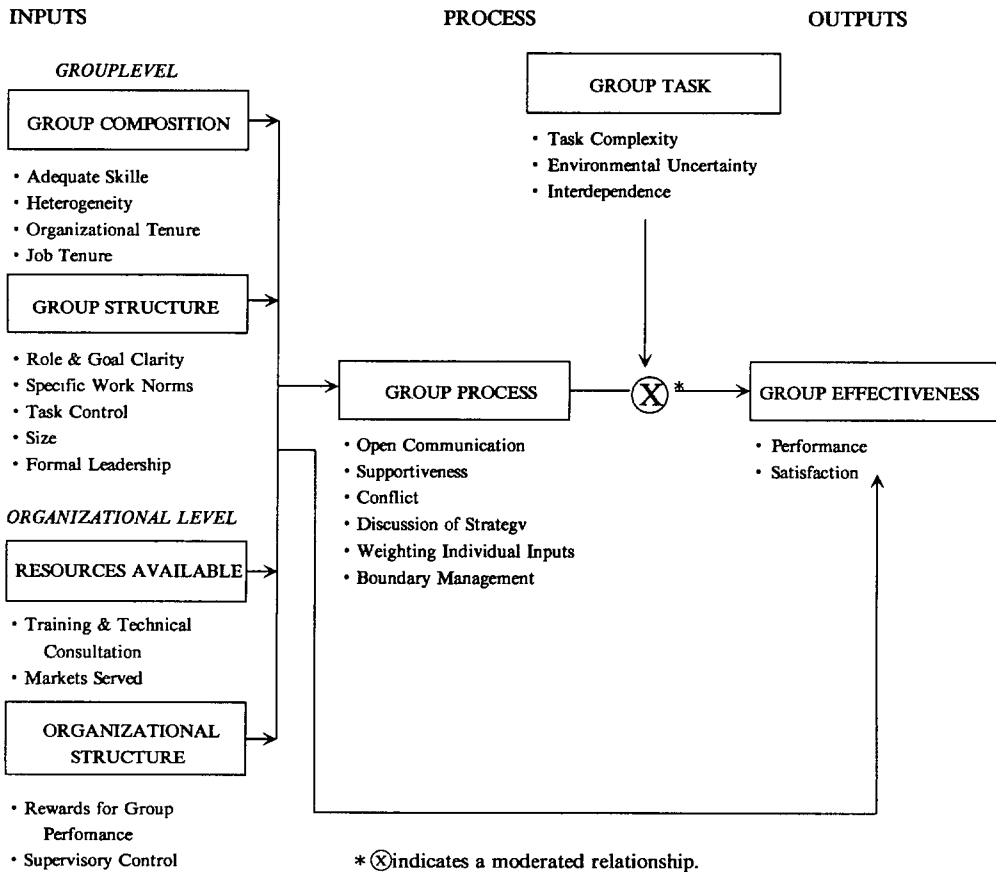>
> Work groups are further distinguished by three characteristics: they are real groups as defined above, they have tasks to perform and they operate in an organizational context (Hackman, 1990).

Gladstein (1984) has developed and tested a general model of group behavior illustrated in Figure 1.
In this systems model, an important distinction is made between group structure and group process. The former is largely exogenous to organizational groups as structural parameters such as size, goal clarity and formal leadership are often determined by management. However, consistent with the above definition of groups and with role theory (Katz & Kahn, 1978) we would argue that role clarity is a function of both formal role expectations and the expectations derived from the ongoing group process.

Gladstein's (1984), research did not support the hypothesized moderating effects of task on the group process-effectiveness relationship. Her most interesting finding was that the

FIGURE 1

INPUTS   PROCESS   OUTPUTS

GROUPLEVEL

| GROUP COMPOSITION |

• Adequate Skille
• Heterogeneity
• Organizational Tenure
• Job Tenure

| GROUP STRUCTURE |

• Role & Goal Clarity
• Specific Work Norms
• Task Control
• Size
• Formal Leadership

ORGANIZATIONAL LEVEL

| RESOURCES AVAILABLE |

• Training & Technical
   Consultation
• Markets Served

| ORGANIZATIONAL
  STRUCTURE |

• Rewards for Group
   Perfomance
• Supervisory Control

| GROUP TASK |

• Task Complexity
• Environmental Uncertainty
• Interdependence

| GROUP PROCESS |

• Open Communication
• Supportiveness
• Conflict
• Discussion of Strategv
• Weighting Individual Inputs
• Boundary Management

$\bigotimes$ *

| GROUP EFFECTIVENESS |

• Performance
• Satisfaction

* $\bigotimes$ indicates a moderated relationship.

implicit theories of group members which were consistent with traditional theories of group effectiveness, explained 90% of the variance in satisfaction and self-rated performance but none of the variance in objective performance measures (p. 499). In her discussion, Gladstein (1984) points out the problem of restricting research to an internal focus on groups and advocates further work with contextual factors. In the present study, we examine the impact of multiple group memberships, a very common contextual factor, on the relationship between traditional group variables and the role perceptions or organizational members, a factor highly related to both group outcome variables. This is a first step in shifting the focus beyond the group boundary.

Research and development organizations have a relatively long history of using a specific type of work group known as a project group or team. Projects groups consists of a combination of diverse technical specialists who are brought together in a temporary organization to achieve a specified purpose (Stuckenbruck,. 1981). These specialists can be organized in a variety of ways to fit specific managerial and task requirements depending on how power and

resources are distributed among projects. Traditional project structures range from the "pure" project design, in which all staff are members of the project team and report directly to the project manager, to the matrix design in which specialists have dual membership on the project team and in their own specialty department (ibid). More recently, project teams have been organized into semi-autonomous work groups who are assigned authority to allocate tasks, schedules and resources to reach collectively defined work objectives. This development reflects the aforementioned sociotechnical systems view that such group structures instill greater cohesiveness, encourage the flow of information, raise the level of skill and knowledge in the group, facilitate greater understanding of group goals through participation, and encourage collaborative problem-solving (Trist, 1982). When R & D teams are organized along STS principles the potential for problems increases not only because members are expected to participate in multiple groups, but these semi autonomous groups have few formally defined roles to help members categorize their work expectations in such a way that they can effectively manage ambiguity, overload, and role conflict.

    In the present study, work group characteristics include both the structural variables, goal clarity and homogeneity, as well as the process variables, cohesiveness, open communications and internal fragmentation which have an empirically demonstrated impact on work group performance in the research and development context (Pelz & Andrews, 1976: Hull, 1989; Keller, 1986; Allen, 1977; Katz & Allen, 1985; Keller & Holland, 1983). For example, Keller (1986) found that group cohesiveness was a strong predictor of project group performance, and was unaffected by type of R & D activities (e. g. basic versus applied). Hull (1989) demonstrated that high performance R & D units are characterized by open communication processes.

    From an organizational standpoint, semi autonomous project teams represent a decentralized method of integration across specialist departments. However, if the specialist is a member of multiple project groups, the integration task is shifted to the individual. It is the individual's management of his or her multiple roles which ultimately determines the distribution of efforts across projects. Galbraith and McCann (1981) note that when roles and responsibilities are ambiguous, increased conflict is likely to occur within integrating groups. In the next section will elaborate more fully the consequences of multiple project team membership from the perspective of individual roles.

Role Theory

    For each of the project groups a specialist belongs to, s/he is performing in a role, defined as "a set of expected activities associated with the occupancy of a given position" (Katz and Kahn, 1966, 1978). The enacted role emerges from four sequential steps which determine the degree to which the expected role and the enacted role conform. These steps, as identified in Kahn's model (1964), include: (a) communication from the role-sender to the role incumbent of the role expectations, which consist of identifying the "what and how" of the role, (b) the reception and interpretation of the "what and how" of the role by the incumbent, (c) the actual behavior by the incumbent after interpretation of the role expectation and (d) knowledge of results from the role sender as to what extent the role expectations have been met by the incumbent.

Kahn's model has been used to refer to roles primarily derived from organizational position or job but in any ongoing group, there also are roles derived from both the interpersonal and unconscious levels of the group itself that emerge over time and may facilitate or frustrate individual and group outcomes. It is important to note that Kahn's paradigm is at the interpersonal level of analysis within the group. Thus, references to group roles are more likely to be the functional task and maintenance specialization that develop as part of the group's stable role structure (Benne & Sheats, 1948). Far less stable, are the unconscious roles individuals enact on behalf of the group as a whole (Wells, 1985), the most familiar of these being the scapegoat role. Although we do not examine either the interpersonal or unconscious roles of project group members in the present paper, it is important to acknowledge our assumption that the member's role in the project group is an interactive effect of positional role and two kinds of group roles, interpersonal and unconscious.

Kahn (1964) distinguishes three types of role disturbance: role conflict, role ambiguity and, role overload. For each of these role disturbances, McGrath (1984) identifies three causes which are derived from the four sequential steps described above. **Role conflict** is defined as "the simultaneous occurrence of two or more role expectations such that compliance with one would make compliance with the other more difficult" (Katz & Kahn 1978, p. 1). The sources of role conflict include:

1) disparity in the communication of the role expectation of different senders;
2) disparity between the role expectations and the values of the position incumbent
3) disparity between the level of actual performance versus the level of ability of the role incumbent.

Role ambiguity, defined as "uncertainty about what the incumbent of the position is supposed to do", (Kahn, 1964), has three identified causes:

1) disparity in the communications of expectations among the role senders
2) a new or changing role;
3) lack of clarity as to how to transform the role expectation into actual behavior;

For **role overload,** defined as the perception that one is being asked to more than time permits, the possible causes of deviation from the ideal role are:

1) no importance or priority among the different roles to be performed;
2) too many role demands;
3) competition between different roles.

McGrath (1984) describes a typology of nine role problems resulting in role conflict, role ambiguity, and/or role overload, as a role system which constitutes a structural pattern of relations among the interacting members of the project group. As these structure stabilize, they in turn shape future interaction of members of the project group.

The analytic strategies typical of much of this literature assumes that individuals employed in R & D organizations are members of only one project group and have not considered the impact of members being involved in multiple projects, on the group characteristics studies. As described earlier, sample usually consist of members who are assigned to work in one group and/or focus on a single project of a specific team (Hackman, 1990). The problem is that the individual may have multiple group memberships and/or the group may have

multiple projects simultaneously (Pelz and Andrews, 1976). This raises the question of the influence of multiple group membership on the individual's identification with these project groups, and the perception of their individual role within the R & D organization.

Membership in multiple project groups places relatively higher demands on individuals attempting to define their role in the organization than on individuals who are members of single groups, due to the increased number of interactions and expectations that can potentially occur. Thus, by virtue of the sheer possible number of interactions, and unique combinations of interactions, role definition problems are more likely to arise.
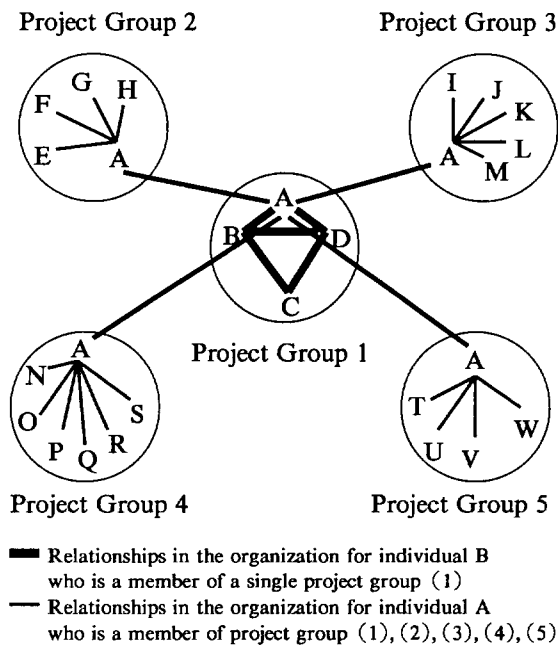
FIGURE 2

Relationships in the organization for individual B
who is a member of a single project group (1)
Relationships in the organization for individual A
who is a member of project group (1), (2), (3), (4), (5)

Figure 2 illustrates this point. Individual B is a fuel systems specialist in group 1. His role as "technical specialist" is consistently defined by members within that group, and is well understood by him. Individual A is also a ful systems specialist in group 1. However, he belong to four additional project groups (2 to 5 e). In some of these groups he plays the position derived role of technical specialist, while in other groups he plays the group derived role of critic or innovator. Compared to individual B, individual A is performing more roles as a simple function of belong to more groups This process is further affected by the fact that each of these groups have a unique social structure which individual A must adapt to or attempt to influence. Thus, by virtue of his greater memberships, individual a may be more likely to experienced role overload, ambiguity, and conflict.

While the probability of role disturbances is higher for individuals belonging to more than one project group, there are two factors which may after this expected finding. First,

the emergent social structure that guides the group's communication of role information to the role occupant also guides the individual's selection of this information. These interaction are themselves patterned and part of the structure of the group. Therefore, the structure of each group in an individual's group set may determine how much the individual actually experiences role conflict, overload or ambiguity even given the multiple memberships. Second, members may selectively attend to the sent role in particular groups as a function of the level of group identification.

Social Identity Theory

In order to understand the impact of multiple group membership on individual role perceptions, we must address the problem of how individuals manage their relationships with different groups at the same time. Recent work in social identity theory has addressed this issue. Social identification is process through which the individual derives part of his self concept from his membership in a social group together with the value and emotional significance attached to that membership. It arises from the basic process of social categorization, thus there is no requirement for interaction as has been empirically demonstrated (Doise, 1978). Social identification is enhanced by the distinctiveness and prestige of the group and the relevance of out-groups through the social comparison process as well as by group formation variables such as interpersonal interaction and shared goals (Ashforth & Mael, 1989).

In organizations using project groups, then, simply assigning employees to groups creates the necessary categorization to generate social identification. Social identity theory also implies that the relatives status of various projects, the degree of competition among projects and the aforementioned development of stable structures within project teams will strengthen social identifications.

Given the realities of multiple group membership in organizational life, Ashforth and Mael (1989) do not describe social identity in unitary terms, as an integration of identifies but suggest an amalgam of identities capable of imposing inconsistent demands on the individual. These authors maintain that conflicts between such demands are managed cognitively by ordering, separating or buffering. The feasibility of such strategies in any particular role example, project groups with clear goals make it easier for the individual to order his efforts by setting priorities, while groups with high levels of cohesiveness have norms such that outside group demands are not seen as legitimate buffers from internal responsibilities. Tightly bounded project groups, may facilitate cognitively separating identities to avoid conflict. Thus, group characteristics may be predicted to differentially impact the role behavior for members of multiple versus single project groups.

Given the cognitive nature of social identity and the inherently iterative process of social comparison, it is unlikely that additive models of aggregation are appropriate. More importantly, social identity theory suggests that when asking subjects about organizational role characteristics, a multiplicative aggregate is reported. Further, ratings of group characteristics, unless meticulously anchored, are likely to reflect a weighted composite of characteristics among the set of groups to which the respondent belongs.

Hypotheses

We test these ideas with two major sets of hypotheses. First, we example the possible differences between single versus multiple subgroups for role behavior, and work group characteristics (hypotheses 1 a to 2 e). Second, we use multiple regression analysis to test for the various relationships between work group characteristics and role behavior, for single and multiple subgroups, and then the total sample (hypotheses 3 a to 5 e). Since this is an exploratory study, all of the hypotheses are stated in null form.

Hypothesis 1: there are no differences between individuals in single and multiple groups for:

- a) role overload
- b) role ambiguity
- c) role conflict

Hypothesis 2: there are no differences between individuals in single and multiple groups for their perceptions of:

- a) group cohesiveness
- b) group goal clarity
- c) group internal fragmentation
- d) group open communication
- e) group homogeneity

Hypothesis 3: there are no differences between individuals in single and multiple groups in the effect of:

- a) group cohesiveness on role load
- b) group goal clarity on role load
- c) group internal fragmentation on role load
- d) group homogeneity on role load
- e) group open communications on role load

Hypothesis 4: there are no differences between individuals in single and multiple groups in the effect of:

- a) group cohesiveness on role conflict
- b) group goal clarity on the role conflict
- c) group internal fragmentation on role conflict
- d) group homogeneity on role conflict
- e) group open communications on role conflict

Hypothesis 5: there are no differences between individuals in single and multiple groups in the effects of:

- a) group cohesiveness on role ambiguity
- b) group goal clarity on role ambiguity
- c) group internal fragmentation on role ambiguity
- d) group homogeneity on role ambiguity
- e) group open communications on role ambiguity

Methods

Our date are based on a random sample of scientists, engineers and managers of a large, centralized research and development unit dedicated primarily to product improvement in the heavy equipment and transportation industry. Parent company sales exceed several billion dollars and it enjoys a large share of the markets in which it competes. Recent internal survey indicate that employees consider the company to be very "people" oriented.

One year prior to the data collections, the R & D unit underwent a major structural change with the introduction of self-managing project groups oriented to their basic product technologies. Each project was given an objective as well as the requisite resources. Individuals were not given pre-determined "job assignments", buy were assigned, and sometimes recruited, to project group based on the project's needs for particular skills, experience, or knowledge.

The questionnaire was administered to respondents in a controlled setting: a total of 274 employees participated in this study. Eight-seven (87) were members of a single project group, 161 had multiple project group membership, and the remaining 26 were in supervisory positions, for a mean of 2.79 project group memberships, and a range of 1 to 25.

The average of age of the respondents was 39.2, with a standard deviation of 9.8, and a range of 21 to 66 years. Eight-three percent (83%) of the respondents were male. Ninety-three percent (93%) had a college education or higher. Tenure with the company averaged 4.4 years.

Measures

The work group characteristics measures and the individual role measures were adapted from the Michigan Organization Assessment Questionnaire (Cammann, Fichman, Jenkins, and Klesh, 1979). The five work group characteristics scales were group homogeneity (alpha=.75), group goals clarity (alpha=.79), group cohesiveness (alpha=.63), opm group communication (alpha=.77), and internal fragmentation (alpha=.78). The three role variables are role conflict (alpha=.73), role clarity (alpha=.59), and role overload (alpha=.71). Respondents were also asked to also identify all project groups in which they were actively involved, from a comprehensive list of such groups.

Results

Our findings are presented in two sections: (1) uni-variate and bi-variate differences between single and multiple group members for work group and role characteristic variables, and (2) multiple regressions of the effects of work group functioning on role behavior for single versus multiple group members.

Uni-variate and bi-variate analysis. Table 1 presents the descriptive and relational characteristics for the total sample, whereas Table 2 gives descriptive statistics for single and

TABLE 1A.   MEANS, STANDARD DEVIATIONS, AND CORRELATIONS
FOR THE TOTAL, SAMPLE

	Variable	TOTAL								
		Mean	SD	1	2	3	4	5	6	7
1.	Role load	4.28	1.35							
2.	Role conflict	4.72	1.42	.33						
3.	Role ambiguity	4.91	1.17	-.23	-.26					
4.	Group cohesiveness	4.72	1.25	.02	-.17	.28				
5.	Group goal clarity	4.16	1.44	-.20	-.28	.44	.55			
6.	Group Internal fragmentation	3.46	1.25	.13	.26	.-15	-.52	-.35		
7.	Group homogeneity	5.33	1.16	.08	.04	-.04	.10	.04	.07	
8.	Group open communication N=274	4.27	1.22	-.09	-.19	.18	.61	.49	-.62	.08

Correlations of .10 and higher are significant at $p < .05$ level.
Correlations of .14 and higher are significant at $p < .01$ level.

multiple group members. For the sake of brevity, our discussion in limited to total sample means.   As indicated in Table 1, the project groups in this study are characterized by relatively how homogeneity (mean = 5.33, reversed scored) and internal fragmentation (mean = 3.46), and moderate levels of goal clarity (3.46), open communication (4.27), and cohesiveness (mean = 4.72). The three role characteristics reflect moderate problems with role definitions, with role load having a mean of 4.28 (reverse scored), role conflict a mean of 4.72 (reverse scored) and role ambiguity a mean of 4.91. Test of skewness indicate that the date are normally distributed; substantively, this means that the project members report few major problems.

Table 2 tests our first major set of hypotheses which compare single versus multiple group membership of each group and role variable (Table 2A: 1a to 1c; Table 2B: 2a to 2e). The results of the oneway analysis of variance test indicate that there are no significant differences for any of the group and role characteristics variables. Thus, we fail to reject the null hypotheses in all cases. While these tests suggest that multiple group ,membership does not affect group or role perceptions, it may be that the effects are more likely to surface when we examine the relationship between group characteristics and role behavior.

Test of relationship between project group and role characteristics. Our second set of hypotheses (3a to 3e; 4a to 4e; 5a to 5e) were tested by means of a split-group technique which compared the extent to which the same set of work group variables predicted role behavior for single versus multiple groups, and the total sample.

TABLE 1B.   DESCRIPTIVE STATISTICS AND CORRELATIONS FOR SINGLE
AND MULTIPLE MEMBERSHIP SUBPOPULATIONS

	Variable	SINGLE		MULTIPLE								
		Mean	SD	Mean	SD	1	2	3	4	5	6	7
1.	Role load	4.19	1.43	4.36	1.31	.44	-.23	-.11	-.33	.22	.12	-.19
2.	Role conflict	4.48	1.45	4.85	1.38	.31	-.21	-.07	-.15	.22	-.04	-.07
3.	Role ambiguity	5.01	1.08	4.83	1.17	-.22	-.25	.35	.44	-.07	-.07	.14
4.	Group cohesiveness	4.75	1.29	4.80	1.16	.14	-.25	32	.50	-.42	-.05	.47
5.	Group goal clarity	4.25	1.50	4.23	1.35	-.20	-.35	.50	.51	-.26	.02	.51
6.	Group Internal fragmentation	3.31	1.27	3.47	1.23	.08	.31	-.19	-.61	-.41	-.04	-.58
7.	Group homogeneity	5.38	1.09	5.38	1.06	-.07	.07	.03	.04	-.03	.12	.08
8.	Group open communications	4.34	1.24	4.29	1.23	-.05	-.27	.25	.70	.48	-.70	-.05

For single group membership N=86 (above the diagonal in bold):
    Correlations of .16 and higher are significant at p < .05 level.
    Correlations of .25 and higher are significant at p < .01 level.
For multiple group membership N=160 (below the diagonal):
    Correlations of .11 and higher are significant at p < .05 level.
    Correlations of .17 and higher are significant at p < .01 level.

TABLE 2A.   ANOVA FOR ROLE VARIABLES BY GROUP MEMBERSHIP

Variable	SINGLE		MULTIPLE			
	Mean	N	Mean	N	F-RATIO	df
Role load	4.19	86	4.37	160	1.06	1,244
Role conflict	4.46	87	4.83	161	3.70	1,246
Role ambiguity	5.01	87	4.85	161	1.07	1,246

The five work group characteristics variables explained 17% of the variance in role over-load of single project group members ($R2=.17$, F5, 80=23.24, p<.0.5). The effected of group goal clarity are relatively stable across the three tests, with the lack of goal clarity in the project group increasing the perceived role load of members in single (-38**) and multi-ple (-.27*) project groups. Group cohesiveness increases role overload for members of multiple groups, while there is no significant effects for members of single groups. On the other hand, internal fragmentation increases role overload for members of single (.22*), but not multiple (.12) groups. Thus, we reject null hypotheses 3a, 3b and 3c.

The second set of regressions tests hypotheses 4a to 4e. Group characteristics explain

TABLE 2B.   ANOVA FOR
WORK GROUP CHARACTERRISTICS BY GROUP MEMBERSHIP

Variable	SINGLE		MULTIPLE			
	Mean	N	Mean	N	F-RATIO	df
Group Cohesiveness	4.76	87	4.82	160	.13	1,245
Group goal clarity	4.23	87	4.25	160	.01	1,245
Group Internal fragmentation	3.31	87	3.46	160	.85	1,245
Group homogeneity	5.38	87	5.40	160	.01	1,245
Group open communications	4.34	87	4.30	160	0.7	1,245

TABLE 3.   MULTIPLE REGRESSION WORK GROUP CHARACTERISTICS
ON ROLE BEHAVIOR FOR SINGLE GROUP MEMBERSHIP,
MULTIPLE GROUP MEMBERSHIP AND TOTAL SAMPLE

	Role load			Role conflict			Role ambiguity		
	SINGLE	MULT	TOTAL	SINGLE	MULT	TOTAL	SINGLE	MULT	TOTAL
Group Cohesiveness	.15	.23**	.24**	.07	.03	.05	.22***	.12	.12
Group goal clarity	-.38*	-.27*	-.28*	-.19	-.27*	-.24*	.41*	.47*	.42*
Group Internal fagmentation	.22*	.12	.15**	.29**	.19***	.21*	.04	.05	.01
Group homogeneity	.14	-.10	.05	-.03	.03	.02	-.05	.04	-.06
Group open communication	.05	.01	-.01	.17	-.03	.03	-.15	-.03	-.09
Multiplec R	.41	.27	.29	.28	.40	.33	.49	.51	.45
R^2	.17	.07	.08	.08	.16	.11	.24	.24	.21
Adjusted R^2	.12	.04	.07	.02	.13	.09	.20	.23	.19
N	86	158	270	86	158	270	86	158	270
F	3.24*	2.47**	4.88**	1.34	5.73*	6.57*	5.14*	10.65*	13.68*

* $p < .01$. ** $P < .05$, *** $p < .10$
df: for SINGLE (5,80), for MULTIPLE (5,152), for TOTAL (5,624)

8% of the variance in role conflict experienced by members of single groups ($R2 = .8$, F5, $80 = 1.34$, $p > .0.5$), and 16% of the variance for members of multiple groups ($R2 = .16$, F5, $152 = 5.73$, $p > .0.1$). These data indicate that group goal clarity has a negative effects on role conflict for multiple groups (-.27*), but not effect on members of single groups (-.19, n.s.). Internal fragmentation is positively correlated with role conflict experience by members of

single (.29**) and multiple (.19***) groups. Group cohesiveness, homogeneity, and open communication processes did not have any effect on role conflict, controlling for the effects of other group characteristics.

The third and final set or regression analyses examined the effect of project group characteristics on role clarity. The work group functioning variables explained 24% of the variance for single project members ($R2=.24$, F5, 80=5.14, p<.01) versus 21% for multiple project group members ($R2=.21$, F5, 152=10.65, p<.01). The strongest predictor for role clarity in both members of single and multiple project groups is group goal clarity (.41*, .47*, respectively). However, because there were no differences in the magnitude of the effects of single versus multiple members on goal clarity, we fail to reject hypothesis 5b. Group cohesiveness was significantly associated with role ambiguity for members for single groups, but not for members of multiple groups. Thus, we reject hypotheses 5a. No other variables were significant.

Discussion and Conclusions

As our findings suggest, membership in more than one organizational group has an impact on the relationship between project group characteristics and individual role behaviors. The effects of cohesiveness in the single and multiple group situation present this most dramatically. We will discuss these findings first and then other effects of group characteristics on individual role behaviors which are moderated by single versus multiple group membership. Finally, we will discuss the common effects of group characteristics on role behavior for both types of group memberships and will discuss the implications of the study of further research.

When organization members belong to only group, cohesiveness among group members significantly decreases role ambiguity. This is consistent with previously reported consequences of cohesiveness which include higher levels of participation and communication as well as less absence (Cartwrigth, 1968). These conditions tend to reduce disparities in communications, values, knowledge and/or expectations of both the role occupant and the role sender resulting in lower levels of ambiguity. This decrease in role ambiguity may be one of the factors that lead to the reported lowering of anxiety in highly cohesive groups (Cartwright, 1968).

When the individual is a member of multiple project group, the impact of cohesiveness is strikingly different. In this case, we are discussing the individual's perception of the degree of cohesiveness across the set of group to which s/he belongs. Participating more fully, attending regularly and feeling important to each group are documented consequences of cohesiveness within the group (Cartwright, 1968). It is not surprising then that with an increase in the number of groups, we find cohesiveness associated with role overload.

In addition to the sheer magnitude of demands on the individual in the multiple group situation, membership in more than one highly cohesive group increases the cognitive management task described by social identity theorist (Ashforth & Mael, 1989). The highly cohesive groups create salient conflict and make it more difficult for the individual to use ordering or buffering as cognitive coping mechanisms. Thus, the individual's load is increased not simply through the additive effects of the number of group memberships but through their

interactive impact on the social identity. An analogous situation arises for members of one project group when there is a high degree of internal fragmentation. In this case, there is a much greater likelihood of disparities in communications, values, and expectations of either role senders or roles receivers and so load increases.

To return to the multiple membership situation, the effect of group goal clarity is more complicated than in the simple membership case. Clear goals emanating from a number of different groups across the individual set of group memberships creates a situation of salient conflicting demands. This is exactly the situation in which Ashforth and Mael (1989) would predict the significant role conflict we find. Again the effect is not merely due to the addition of more demands but the interaction of the tasks themselves and the cognitive demands necessary to manage oneself in role.

Turning now to the effect of group characteristics on individual role behaviors that were consistent in both the single and multiple group membership case, we find that goal clarity increases individual role load in both situations. However the effect was weaker for members of multiple project groups. This may be accounted for by the degree to which goal clarity among the individual's group set permits him or her to more accurately utilize ordering as a cognitive coping strategy. Similarly, goal clarity while reducing role ambiguity for members of single and multiple project groups, had a stronger impact in the latter case.

Based on these findings, future studies of work groups may do well to consider the ways in which single versus multiple group memberships after focused on R & D project groups, we think that these findings may well extend to other types of groups in organizations. Future papers will attempt to determine whither this is the case, whether or not there are any optimal thresholds in terms of the number of group to which a member should belong, and how supervisors or team leaders may help groups members manage these diverse expectations.

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