What Do Groups Learn from Their Worldliest Members? Direct and Indirect Influence in Dynamic Teams

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This study investigated the consequences of temporary membership changes for itinerant members (who leave their group of origin temporarily to visit a foreign work group) and indigenous members of those origin and foreign groups. We tested the hypothesis that itinerant members' unique knowledge and experience can be transferred from the group where it originated to another group engaged in the same activities. Results showed that all members produced more unique ideas after itinerant members returned to their group of origin than before they left or while they were away; however, the ideas of itinerant members were significantly less likely to be utilized by the group in an essay on group work. After their return, itinerant members were perceived as highly involved in group activity, but also more argumentative, and although they produced more unique ideas than indigenous members, their essay contributions were perceived as less valuable. As a result, itinerant group members had less direct influence after changing groups than they did prior to the membership change. © 2000 Academic Press

An organization's ability to improve is based on the premise that groups can learn from experience. It depends, moreover, on the likelihood that one group can benefit from the achievements and mistakes of another rather than learn on its own through trial and error. Recent research has determined that the performance gains of individual work groups do not always improve organizational outcomes, however, because groups fail to learn from one another (Argote,

1995; Gruenfeld & Fan, 1999; Rousseau, 1991; Szulanski, 1994). To address this challenge, theorists and practitioners alike have advocated rotating organization members among work groups to facilitate the transfer of group-specific knowledge about best practices (Ancona & Caldwell, 1998; Mohrman, Cohen, & Mohrman, 1995; Nahavandi & Aranda, 1994; Nonaka & Takeuchi, 1995). The effectiveness of rotating members, however logical, has not been empirically assessed.

When individuals are chosen to span group boundaries for the purpose of importing or exporting group knowledge, they can be characterized as *itinerant* group members. Permanent group members who interact with itinerants but do not travel themselves can be characterized as *indigenous* group members. Itinerant and indigenous member roles arise in organizations in a number of ways. For example, an experienced manager may be brought in temporarily to observe and advise management trainees, a former member of a successful task force may help to initiate a new task force effort, or a consultant with client- or problem-specific experience may advise a team facing similar challenges (see Ancona & Caldwell, 1998, for other examples).

Our research investigated the circumstances by which indigenous group members learn from itinerants when such groups are, by design, dynamically composed. Specifically, we measured the influence of an itinerant group member's unique knowledge and experience on (a) the group that member temporarily visits and (b) the group to which that member returns. Twenty-nine work groups with a 10-week life span were observed for 6 consecutive weeks (week 5 through week 10). In week 7, after 6 weeks of stable membership, one member from each group was randomly selected for a 2-week assignment to a new group. These itinerant members were reunited with their groups of origin for weeks 9 and 10 of the project. Their responses to changing membership were compared with the responses of indigenous members in their new and original groups.

As part of their weekly task, all group members wrote essays about their group's activities during the week. These essays document individual and group-level recognition of the events, beliefs, and norms that comprise group culture and affect group performance (Gruenfeld & Fan, 1999; Gruenfeld, Hollingshead, & Fan, 1995; Gruenfeld & Hollingshead, 1993). They also illustrate the meaning and application of important course concepts. To measure the production and transfer of knowledge about group practices and course concepts, the ideas generated by both itinerant and indigenous individuals working independently were compared with one another and with those chosen by the group working collaboratively on a single written group product.

PREDICTIONS

Social Influence

Because many aspects of group knowledge are stored within individuals, changes in group membership affect the acquisition, persistence, diffusion, and

depreciation of group knowledge (for a review, see Argote, Gruenfeld, & Naquin, in press; Darr, Argote, & Epple, 1995). When new members join a group, they affect group knowledge to the extent that (a) they convey unique information and (b) others consider it. These conditions are quite likely in groups that experience permanent, rather than temporary, changes in group composition (Moreland & Levine, 1989). How transient group members affect group-level learning has not, however, been widely observed.

There are two distinct ways that the unique knowledge and experience of itinerant members can influence indigenous members:

1. Itinerants can have *direct influence* by convincing indigenous members to accept their advice or ideas and to change their beliefs accordingly (Ancona & Caldwell, 1998; Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994). The likelihood of direct influence generally corresponds to the status and expertise of the source (Levine, 1989; Nemeth, 1986). It should also depend on the value of the knowledge conveyed. Since unique knowledge is more informative than common knowledge (e.g., Stasser & Titus, 1985), the knowledge about group processes possessed by an itinerant member should be more informative than the knowledge possessed by any single indigenous member, whose first-hand experiences are redundant with those of other indigenous members in the same group (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). When groups learn from one another via the direct influence of an itinerant member the following should therefore be true:

H1a: Itinerants' ideas should be more likely to appear in the essays written by their temporary group than in the essays written by their original group beforehand.

H1b: Itinerants' ideas should be more likely to appear in the essays written by their original group after their return than before their departure.

2. Itinerants can also have *indirect influence* by changing *how*, rather than *what*, indigenous members think. This may occur if an itinerant member provides the diversity and dissent to enhance group problem solving, but does not provide the solution itself (Nahavandi & Aranda, 1994). Indirect influence occurs when the beliefs of influence targets change in ways that are only secondary to the content of the message they receive (Moscovici, 1985; Nemeth, 1986; Wood et al., 1994). In studies of minority influence, for example, targets rarely accept the minority position, but often respond by embracing new approaches to problem solving (Nemeth, 1992; Nemeth & Rogers, 1996; Van Dyne & Saavedra, 1996). Minority-influence targets also respond by examining the trade-offs among alternative perspectives (Gruenfeld, Thomas-Hunt, & Kim, 1998; Peterson & Nemeth, 1996).

Role transitions in general (Langer, 1986) and membership changes in particular (Louis, 1980) can also stimulate these kinds of cognitive changes, inducing shifts from "habits of mind" to "active thinking" about group practices (Louis & Sutton, 1991; Sutton & Louis, 1987). Group socialization processes involve revisiting assumptions and generating novel insights about the "right" way to do things (Feldman, 1981; Schutz, 1964; Van Maanen, 1977). If groups learn from one another via the indirect influence of an itinerant member the following should therefore be true:

H2a: Indigenous members should generate more unique ideas in the presence of an itinerant member than they did beforehand.

H2b: Indigenous members should generate more unique ideas after the return of an itinerant member than they did before that member left.

Social Perceptions

Itinerant members may be perceived and evaluated differently in the groups they visit, where they are unfamiliar to their coworkers, than in the groups to which they return, where they have had 6 weeks of shared history (Gruenfeld, Mannix, Williams, & Neale, 1996; Moreland & Beach, 1992). The small group literature suggests that there are three primary ways in which the social perceptions of group members may be affected by movement of members between original and temporary groups:

1. Group members at the social core of small groups tend to be more actively involved in group activity than those at the social periphery (Moreland & Levine, 1989; Thomas-Hunt & Gruenfeld, 1998; Van Sell, Brief, & Schuler, 1981). Thus:

H3a: Itinerant members' involvement in and contribution to group activities should be greater in the group of origin than in the temporary group.

2. Individuals who span group boundaries can be targets of social discrimination in the groups they temporarily visit (Ashforth & Mael, 1993; Thomas-Hunt & Gruenfeld, 1998). This phenomenon might affect the extent to which itinerants are accepted as full-fledged members of the groups they visit and the extent to which their ideas and task contributions are perceived as valuable by those groups. In contrast, discrimination against itinerants should be lower in their groups of origin where they are more likely to be perceived as legitimate members. Thus:

H3b: Itinerant members should be more socially accepted and their contributions more valued in their group of origin than in their temporary group.

3. Perceptions about itinerants in their respective groups may be affected by the extent to which itinerants introduce conflict in those settings. Itinerant members are particularly likely to induce conflict if they communicate their unique knowledge with intent to change the groups' norms, beliefs, or practices (Thomas-Hunt & Gruenfeld, 1998). Prior research shows that the presence of visitors in temporary groups tends to decrease the expression and experience of conflict because members are inhibited and are on their best behavior (Arrow & McGrath, 1995; O'Connor, Gruenfeld, & McGrath, 1993). In contrast, individuals who are familiar with their coworkers are more comfortable with disagreement and are more likely to share their unique knowledge than those who are not familiar with one another (Gruenfeld et al., 1996). Thus:

H3c: Itinerant members should be perceived as more argumentative in their group of origin than in their temporary group.

METHOD

Design

These hypotheses were tested in a longitudinal study of 29 work groups in an advanced undergraduate class in organizational communication at a Midwestern university. The 91 student participants were randomly assigned to permanent work groups of three or four members that met once a week outside of lecture (the "lab" section of the course) to work on a variety of simulated organizational tasks. After 6 weeks of stable membership, one member from each group was randomly selected for a 2-week assignment to a new group. These itinerant members returned to their original groups for the remaining 2 weeks of the class. Selection was randomized, and participants were moved in a round-robin so that no two groups simply exchanged members. Participants were informed of this procedure 1 week before the move took place but received no information about who would be selected to move.

Tasks

The weekly lab sessions were designed for students to get experience and practice in teamwork and group communication skills. In each lab session, groups were required to generate one or more group products that provided solutions to the problem of the week. Tasks included analyzing leadership styles and their effectiveness in a particular situation, designing interventions for changing employee behavior, and choosing among business investments.

Each week, after completing the task, group members wrote essays reflecting on their process and performance. First, individuals worked independently on their own personal essays. Then, group members pooled their individual essays and worked together to compose a single group essay. The ideas contained in individual and group essays provided data for the study. Group members also completed questionnaires assessing their perceptions of one another on a weekly basis.

Data Collection and Analysis

Essay production. Essays consisted of participants' one- or two-page responses to the prompt: "Please use this space to analyze what happened in your group during the workshop this week and relate it to the topic of the lecture on Tuesday." Participants were allowed to answer this question by referring to the task, the group's interaction, individual members' contributions, or any combination of these factors. They were allotted 15 min to complete the individual essay and were not allowed to communicate with one another until afterward. Then the team collaborated for 15 min to answer the same question in a single group essay. While they were not required to interact or to share one another's individual products, team members were allowed to converse freely during the writing of the group essay. Teams were given freedom to choose scribes. Individual and group essays contributed equally to students'

TABLE 1

Social Perception Ratings during Prechange, Change, and Postchange Periods

	Prechange	Change	Postchange
(1) Fit in well			
Itinerant	8.28b (*SD* = 1.17)	8.40ab (*SD* = .83)	8.46ab (*SD* = .94)
Indigenous	8.30b (*SD* = 1.07)	8.61a (*SD* = .68)	8.48ab (*SD* = .92)
(2) Involved in group activity			
Itinerant	8.08ac (*SD* = 1.29)	8.44bc (*SD* = .79)	8.59bc (*SD* = .74)
Indigenous	8.21ac (*SD* = 1.08)	8.33ab (*SD* = .97)	8.49b (*SD* = .92)
(3) Accepted by the team			
Itinerant	8.57ab (*SD* = 1.01)	8.48a (*SD* = .78)	8.62ab (*SD* = .90)
Indigenous	8.47ab (*SD* = 1.15)	8.72b (*SD* = .51)	8.52ab (*SD* = 1.15)
(4) Argumentative			
Itinerant	3.15ab (*SD* = 2.41)	2.72a (*SD* = 2.23)	3.59b (*SD* = 2.39)
Indigenous	2.89ab (*SD* = 2.03)	2.78a (*SD* = 2.29)	3.20ab (*SD* = 2.30)
(5) Valuable task contributions			
Itinerant	8.01a (*SD* = 1.22)	8.31b (*SD* = .91)	8.24ab (*SD* = 1.27)
Indigenous	8.00a (*SD* = 1.27)	8.26ab (*SD* = .99)	8.16ab (*SD* = 1.27)
(6) Valuable essay contributions			
Itinerant	7.45ac (*SD* = 1.76)	8.20bc (*SD* = 1.04)	7.93abc (*SD* = 1.45)
Indigenous	7.52ac (*SD* = 1.62)	8.03bc (*SD* = 1.23)	8.18b (*SD* = 1.33)

Note. Means with different subscripts differ at $p < .05$ or lower.

participation grades. To assess the impact of the membership change manipulation, data were systematically sampled to include all individual and group essays written in 2-week time frames: prior to the change, during the change, and after the change when original group memberships were restored.

Social influence. To assess the number and nature of ideas produced by individuals working independently and the origin of ideas used by the group, all of the essays in the sample were deconstructed into a set of distinct ideas, which were counted. The ideas presented in individual essays were compared across group members to determine whether they were *unique* (i.e., produced by only one group member, working independently) or *redundant* (i.e., produced by more than a single group member, working independently).[1] The ideas presented in individual essays were then compared with those presented in group essays to determine whose ideas were included in the group product.

Social perceptions. Social perceptions were assessed using six items with 9-point Likert scales (see Table 1). These items assessed levels of social acceptance (items 1 and 3), involvement (item 2), conflict initiative (item 4), and task contribution (items 5 and 6).

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[1] The incidence of *emergent* ideas (ideas presented in the group essays that were not observed in any individual essay) was also assessed. The scarcity of emergent ideas precluded the use of statistical tests; hence, they were excluded from further analysis.

RESULTS

Analyses

The design of this study requires direct comparisons of group-level (indigenous members) and individual-level (itinerant member) data.[2] To evaluate responses by itinerant and indigenous members, the mean of indigenous members responses was compared with the itinerant members' single response. Data were analyzed using a 2×3 multivariate analysis of variance (MANOVA) model with one between-subjects variable (membership type: itinerant vs indigenous) and one repeated measure (time: prechange vs change vs postchange period).[3] Mean differences that were statistically reliable at $p < .05$ or lower were considered significant and are reported below.

To insure that itinerants (group members arbitrarily selected to change groups) did not differ in perceptions, productivity, or influence from indigenous members (those selected to remain in their original groups) prior to the membership-change manipulation, the scores of these individuals prior to the change were compared. As expected, there was no significant difference between (a) the idea-production levels of prospective itinerants ($M = 4.92$) and indigenous members ($M = 4.86$) or (b) the influence of prospective itinerants ($M = 1.38$) and indigenous members ($M = 1.68$). Pairwise comparisons of the social perceptions of prospective indigenous and itinerant members also revealed no significant differences in responses to any of the six items (all $ps < .10$).

Hypothesis Tests

Hypotheses 1a and 1b predicted that the ideas generated by itinerants working independently should be more likely to appear in the group essay after changing groups than they were beforehand. Means bearing on these hypotheses are displayed in Fig. 1. Contrary to predictions, itinerant members' ideas were used significantly less often after returning to their groups of origin ($M = 0.97$) than before leaving ($M = 1.64$), $F(1, 28) = 20.40$, $p < .001$, and they were no more likely to appear in the essays of their temporary groups

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[2] Although both individual and group variability could logically affect participants' responses in our design, we chose to perform analyses at the individual level, treating itinerant vs indigenous membership as a between-subjects variable. The decision to treat role as a between-subjects variable reflects our belief that role manipulation was a stronger determinant of participants' behavior during the membership-change periods than the composition of the specific group with which they were engaged. This is especially true because the groups themselves changed during these periods, making assessment of group-level effects impractical. To reduce the potentially confounding effects of unequal variances, we compared the mean of indigenous members' responses with the itinerant members' single response.

[3] After choosing these procedures for dealing with our level of analysis problem, we compared the responses of one indigenous member, chosen at random from each group, to those of the itinerant member in that group. We also analyzed the data with role as a within-subjects factor. Although there were slight differences in the significance levels associated with some effects, the results of hypothesis tests were unaffected (see Gruenfeld et al., 1998; Gruenfeld & Fan, 1999, for other studies in which the chosen procedure was used.)
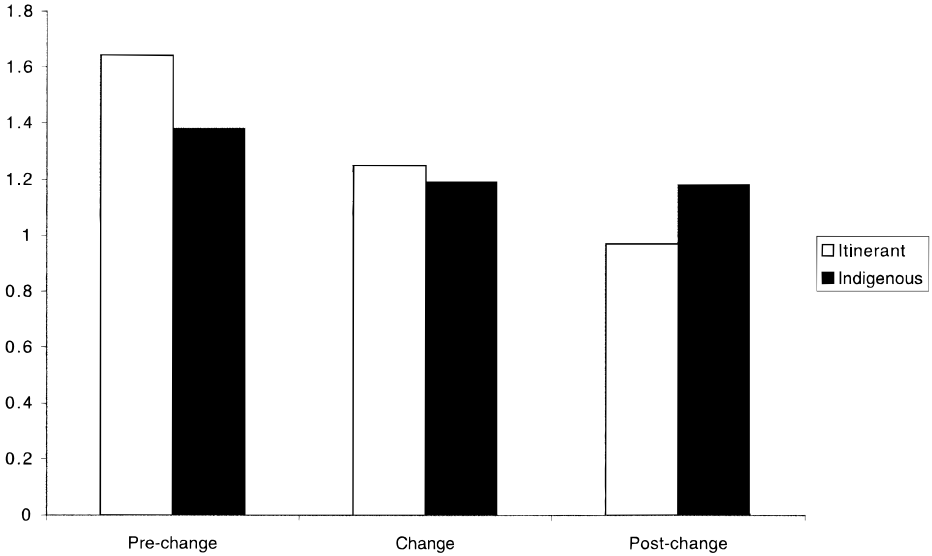
FIG. 1. Ideas included in group essays composed collaboratively during pre change, change and postchange periods.

($M = 1.25$) than they were before group membership changed. An unanticipated interaction between role and time was also observed: Whereas prospective itinerant members' ideas were slightly more likely to be used than those of prospective indigenous members *before* the change ($Ms = 1.64$ and 1.38 for itinerant and indigenous members respectively), itinerant members' ideas were less likely to be used than those of indigenous members *after* the change [$Ms = .97$ and 1.18 for itinerant and indigenous members, respectively, $F(1, 56) = 4.12$, $p < .05$].

Hypotheses 2a and 2b predicted that group members would generate a greater number of unique ideas after group membership changed than they did beforehand. Means bearing on these hypotheses are displayed in Fig. 2. Consistent with predictions, the average number of unique (nonredundant) ideas generated by group members working independently was greater after itinerant members returned to their original group ($M = 3.80$) than before they left [$M = 3.25$, $F(1, 56) = 8.27$, $p < .006$] or during the change period [$M = 3.11$, $F(1, 56) = 12.10$, $p < .001$]. However, indigenous members generated significantly more unique ideas after the itinerant member returned ($M = 3.77$) than during the visit by a temporary member [$M = 2.93$, $F(1, 28) = 7.73$, $p < .01$]. Itinerant members also generated more unique ideas after returning to their group of origin ($M = 3.82$) than during the change period ($M = 3.29$) or before the change period [$M = 3.28$, $F(1, 28) = 4.39$, $p < .05$ and $F(1, 28) = 4.45$, $p < .04$, respectively].

Analyses including redundant ideas showed that the total number of ideas generated by group members working independently was greater after itinerant members returned ($M = 5.11$) than during the change period [$M = 4.89$, $F(1, 56) = 8.42$, $p < .005$], but that overall productivity did not differ significantly after membership was restored, relative to before the change occurred
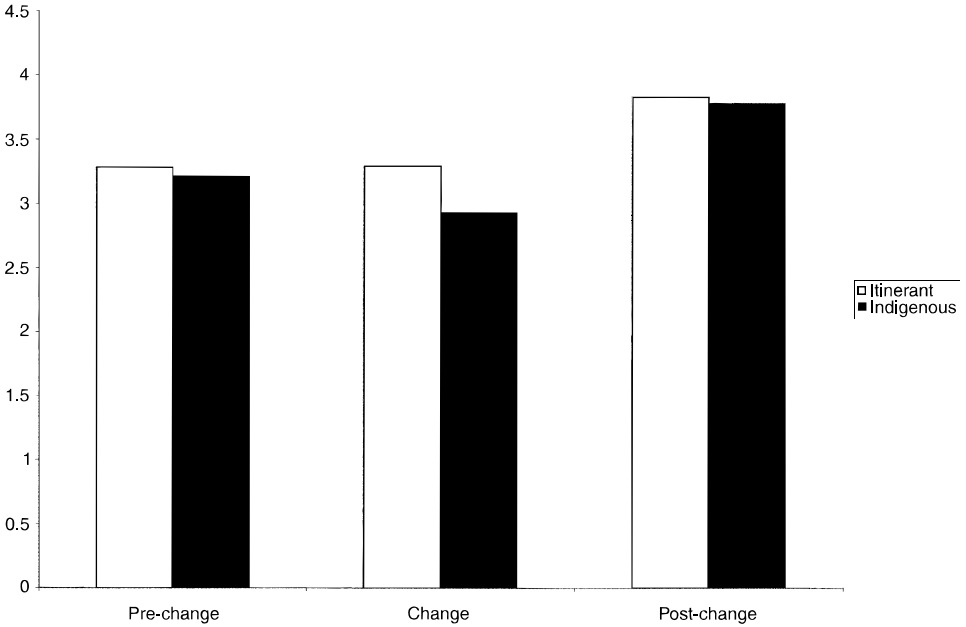
FIG. 2. Unique ideas produced by individuals during pre change, change, and postchange periods.

[$M = 4.89$, $F(1, 56) < 1.0$, ns]. Indigenous members were more productive after itinerant members returned ($M = 5.18$) than while working with a temporary visitor [$M = 4.59$, $F(1, 28) = 7.44$, $p < .01$], but itinerant members generated an equivalent number of ideas in both change ($M = 4.76$) and postchange periods [$M = 5.05$, $F(1, 28) = 1.86$, ns].

Hypotheses 3a and 3c predicted that itinerant members would be perceived as higher in group involvement, social acceptance, and conflict initiative in their group of origin than in their temporary group. Cell means bearing on these hypotheses are displayed in Table 1. Correlations among the six social perception ratings of itinerants by indigenous members are displayed in Table 2.

Results pertaining to involvement are partially consistent with Hypothesis 3a. Itinerants appeared more involved after the change ($M = 8.59$) and during the change ($M = 8.44$), but they were more involved during both periods than before the change ($M = 8.08$; $p < .004$ and $p < .01$ for the postchange and change periods, respectively). Indigenous members also appeared significantly more involved after itinerants returned to their original groups ($M = 8.49$) than they were prior to the change ($M = 8.21$, $p < .05$), but their involvement during the change period ($M = 8.33$) did not differ from either. As a result, both the Time x Role interaction effect [$F(2, 55) = 6.35$, $p < .03$] and the main effect for time [$F(2, 112) = 10.04$, $p < .004$] were significant.

Hypothesis 3b predicted that itinerants' social acceptance (item 3), perceived fit (item 1), and work-contribution value (items 5 and 6) would be greater in their group of origin than in their temporary group. Contrary to expectations, the social acceptance of itinerants did not vary. However, there were significant

TABLE 2

Correlations among Social Perception Ratings of Itinerants
(by Indigenous Members)

	Fit in	Involved	Accepted	Argue	Task value	Essay value
Prechange						
Fit in	1.00	.63**	.63**	−.25*	.40**	.21
Involved	.64**	1.00	.46**	−.25	.68**	.37**
Accepted	.63**	.46**	1.00	−.27*	.37**	.16
Argue	−.25*	−.25	−.27*	1.00	−.018	−.12
Task value	.40**	.68**	.37**	−.18	1.00	.44**
Essay value	.21**	.37**	.17	.12	.44**	1.00
Change						
Fit in	1.00	.64**	.67**	.11	.24	.08
Involved	.64**	1.00	.33*	.11	.52**	.26*
Accepted	.67**	.33**	1.00	−.09	.12	.11
Argue	.12	.11	−.09	1.00	.13	.10
Task value	.24	.52**	.12	.013	1.00	.48**
Essay value	.08	.26*	.11	.10	.48**	1.00
Postchange						
Fit in	1.00	.53**	.16	−.18	.53**	.17
Involved	.53**	1.00	.35**	−.02	.68**	.40**
Accepted	.16	.35**	1.00	.13	.10	.28*
Argue	−.18	−.02	.13	1.00	−.01	−.01
Task value	.53**	.68**	.10	−.01	1.00	.42**
Essay value	.17	.40**	.28*	−.01	.42**	1.00

* Correlation is significant at the .05 level (two-tailed).
** Correlation is significant at the .01 level (two-tailed).

Time x Role interaction effects for both social acceptance [F (2, 55) = 17.21, $p < .001$] and perceptions of fit [$F(2, 55) = 4.89, p < .02$]. Although perceptions of indigenous and itinerant members' acceptance and fit did not differ before or after the change, indigenous members were better accepted ($M = 8.72$) and perceived as fitting in better ($M = 8.61$) than itinerant members ($Ms = 8.48$ and 8.40 for acceptance and fit, respectively) during the change period. The perceived value of members' task contributions also deviated from predictions. Both itinerant and indigenous members' task contributions (item 5) were valued more during the change than they were beforehand, leading to a main effect for time [$F(2, 112) = 3.11, p < .05$]. However, the perceived value of itinerant members' essay contributions (item 6) was significantly lower after they returned to their group of origin ($M = 7.93$) than that of indigenous members during that period ($M = 8.16, p < .03$). In contrast, itinerant members' essay contributions were perceived as more valuable ($M = 8.20$) than those of indigenous members ($M = 8.03$) in their temporary groups. As a result, the Time x Role interaction effect for perceptions of essay-contribution value is also significant [$F(2, 55) = 3.92, p < .02$].

Hypothesis 3c predicted that itinerants would be perceived as more argumentative in their group of origin than in their temporary group. Consistent with

predictions, perceptions of itinerant members' argumentativeness (item 4) were significantly greater after returning to their group of origin ($M = 3.59$) than during the change period ($M = 2.72$, $p < .01$). In contrast, indigenous members' argumentativeness levels did not vary significantly over time. As a result, the Time x Role interaction effect is significant [$F (2, 55) = 4.83$, $p < .01$]. In addition, the main effect for time is significant [$F(2, 112) = 5.86$, $p < .007$] because argumentativeness was lower during the change period than either beforehand [$F(1, 56) = 12.91$, $p < .01$] or afterward [$F(1, 56) = 8.42$, $p < .003$].

DISCUSSION

This research tested a general hypothesis based on practical wisdom about the potential benefits of rotating members across groups to facilitate intergroup learning. Consistent with the logic on which group-knowledge transfer practices are based, we predicted that itinerant members would have greater impact on the knowledge of indigenous members after changing groups than they did beforehand. Surprisingly, we found that direct influence by itinerant members was diminished after they changed groups and had unique knowledge to share. Although the unique ideas contributed by itinerants were used as often, but not more often, than those of indigenous members in the groups they visited, their ideas were less likely to appear in the group essay than those of indigenous members after returning to their group of origin. Consistent with our expectations, indirect influence by itinerant members was greater after they returned to their group of origin than before they left, but it was least evident in the groups they visited, where the number of unique ideas generated by indigenous members actually decreased in the presence of a temporary newcomer. Indigenous members generated more unique ideas in response to the return of a familiar itinerant than in the presence of a visitor from another group.

Assessments of group members' social perceptions help to explain these results. We hypothesized that itinerants would be more involved, more accepted, more valued, and also more argumentative in their group of origin than in their temporary groups. These predictions received only partial support. Itinerant members were no less involved in the groups they visited than in those to which they returned; in fact, they were more involved after these changes than they were beforehand. However, they were perceived as more argumentative, and their essay contributions were valued less, in their postchange than change-period groups. Consistent with the literature on indirect influence (Wood et al., 1994), itinerants' ideas were valued less and used less often during the postchange period by indigenous members who themselves were generating more unique ideas than ever before. In contrast, itinerants' ideas were valued more and used more often in the groups they visited, but indigenous members in those groups had fewer unique ideas themselves during that period than either beforehand or afterward. Future research should examine more explicitly the relationship between perceptions of itinerant members and their influence in such contexts.

Our findings contribute to prior research on group-knowledge transfer in a

number of ways. As noted earlier, there is little empirical evidence of how temporary changes in group membership affect group-level learning. This study provides evidence that groups can learn from membership changes, but that they are likely to learn different things from insiders' than from outsiders' experiences (Gruenfeld & Fan, 1999). Direct influence by itinerants was greater in the groups they visited, but indirect influence by itinerants was greater in the groups to which they returned. This suggests that while some consequences of using individuals to transfer group knowledge are manifested during the change period, others may not be visible until after membership is restored.

Limitations and Implications for Future Research

The conditions under which these findings were obtained differ in some ways from the conditions under which membership change may occur naturally. These differences might limit the generalizability of our results. For example, the membership changes in this study were imposed by "authorities" in a university classroom setting (i.e., teachers and experimenters). Itinerants were chosen and moved using a rationale that satisfied the interests of the experimenters rather than those of the groups affected by the changes, and they were moved for a relatively short period of time. In contrast, prior theorizing about the effects of membership change typically refers to conditions in which old-timers willingly engaged in recruiting and socializing newcomers who were expected to become permanent members (e.g., Feldman, 1981; Moreland & Levine, 1989; Louis & Sutton, 1987). When groups are strategically recomposed by importing temporary visitors without members' active participation, old-timers may be less motivated to engage fully in accommodating newcomers than when they have willingly initiated membership changes themselves.

The fact that itinerant members were chosen at random, rather than because of their specific expertise, and then moved without an explicit justification might also limit the generalizability of our results. In many groups, strategic membership changes involve the careful selection of outside "experts" who possess knowledge and experience that are perceived as relevant by the recipient group. In those situations, it may be reasonable to assume that indigenous members will recognize that itinerants have knowhow they lack and will be more influenced by those members' contributions than they were in the study reported here (Ancona & Caldwell, 1998).

The validity of our conclusions about the effects of such changes may also be challenged because there was no control condition in which, for example, comparable groups remained unchanged (or individuals were randomly assigned to a solo indigenous condition). It is possible that our results are due not to the membership changes we initiated, but to the passage of time and other accompanying factors such as the acquisition of course knowledge, the specific content of weekly readings and lecture materials, the collective wisdom about the most effective means of composing a group essay, or the singling out of a solo group member for any purpose. However, a course on group process and organizational communication should make members more receptive, not

less receptive, to one another's ideas about course material. Exposure to theoretical accounts of information-sharing biases, in-group favoritism, and out-group discrimination should discourage, rather than encourage, the kind of behavior we observed. In prior studies using this methodology, grades assigned to the group essay were positively correlated with inclusion of multiple perspectives, which should lead students to value, rather than reject, alternative perspectives. It is difficult therefore to account for our results on the basis of such factors.

Group composition strategies that occur naturally do not always differ significantly in these respects from the conditions created in this study however. Often membership changes are imposed by a manager or executive without group-member involvement and without clear role expectations for itinerant members. Temporary group assignments are often driven by office politics, rather than expertise. Our results are perhaps most applicable to group learning efforts that take place under these kinds of conditions.

There are, of course, a number of organizational conditions that might lead to greater success in group-knowledge transfer than what was observed here. For example, itinerant members who are sent to observe and learn from high-performing groups may be more likely to have influence when they return than those who observe groups whose performance is lower or unknown. Visits to groups engaged in different, rather than similar, organizational tasks may also increase cross-group learning. The history of the origin group, the extent to which other members have served as itinerants, and the length of the visiting period might also affect the extent to which itinerants are effectively reintegrated upon their return. Future research should examine these possibilities.

REFERENCES

Ancona, D. G., & Caldwell, D. F. (1998). Rethinking team composition from the outside in. In M. A. Neale, E. A. Mannix, & D. H. Gruenfeld, (Eds.), *Research on managing groups and teams* (Vol. 1, pp. 21–38). Greenwich, CT: JAI Press.

Argote, L. (1995). *Group versus organizational learning*. Paper presented at the Academy of Management meetings, Vancouver, Canada.

Argote, L., Gruenfeld, D. H., & Naquin, C. (in press). Group learning in organizations. In M. Turner (Ed.), *Groups at work: Advances in theory and research*. Hillsdale, NJ: Erlbaum.

Arrow, H., & McGrath, J. E. (1995). Membership dynamics in groups at work: A theoretical framework. In *Research in organizational behavior* (Vol. 17, pp. 373–411). Greenwich, CT: JAI Press.

Ashforth, B., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, **14**, 20–39.

Darr, E., Argote, L., & Epple, D. (1995). The acquisition, transfer and depreciation of knowledge in service organizations: Productivity in franchises. *Management Science*, **41**, 1750–1762.

Feldman, D. C. (1981). The multiple socialization of organization members. *Academy of Management Review*, **6**, 309–318.

Gruenfeld, D. H., & Fan, E. T. (1999). What newcomers see and what oldtimers say: Discontinuities in knowledge exchange. In L. L. Thompson, J. M. Levine, & D. M. Messick (Eds.), *Shared cognition in organizations: The management of knowledge* (pp. 245–265). Hillsdale, NJ: Erlbaum.

Gruenfeld, D. H., & Hollingshead, A. B. (1993). Sociocognition in work groups: The evolution

of group integrative complexity and its relation to task performance. *Small Group Research*, **24**(3), 383–406.

Gruenfeld, D. H., Hollingshead, A. B., & Fan, E. T. (1995). *Integrative complexity in work groups: The effects of continuity and change*. Paper presented at the Annual Meeting of the Midwestern Psychological Association, Chicago, IL.

Gruenfeld, D. H., Mannix, E. A., Williams, K. Y., & Neale, M. A. (1996). Group composition and decision making: How member familiarity and information distribution affect process and performance. *Organizational Behavior and Human Decision Processes*, **67**(1), 1–15.

Gruenfeld, D. H, Thomas-Hunt, M. C., & Kim, P. H. (1998). Cognitive flexibility, communication strategy, and integrative complexity in groups: Public and private reactions to majority and minority status. *Journal of Experimental Social Psychology*, **3**, 202–226.

Kiesler, S., & Sproull, L. (1982). Managerial response to changing environments: Perspectives on problem sensing from social cognition. *Administrative Science Quarterly*, **27**, 548–570.

Langer, E. J. (1986). Minding matters: The consequences of mindlessness/mindfulness. In L. Berkowitz (Ed.), *Advances in experimental social psychology*. New York: Academic Press.

Levine, J. M. (1989). Reactions to opinion deviance in small groups. In P. B. Paulus, (Ed.), *Psychology of group influence* (2nd ed., pp. 187–231). Hillsdale, NJ: Erlbaum.

Levine, J. M., & Moreland, R. L. (1991). Culture and socialization in work groups. In L. B. Resnick, J. M. Levine, & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 257–279). Washington, DC: American Psychological Association.

Louis, M. R. (1980). Surprise and sense making: What newcomers experience in entering unfamiliar organizational settings. *Administrative Science Quarterly*, **25,** 226–251.

Louis, M. R., & Sutton, R. I. (1991). Switching cognitive gears from habits of mind to active thinking. *Human Relations*, **44**(1), 55–76.

Mohrman, S. A., Cohen, S. G., & Mohrman, A. M., Jr. (1995). *Designing team-based organizations: New forms of knowledge work*. San Francisco, CA: Jossey–Bass.

Moreland, R. L., & Beach, S. R. (1992). Exposure effects in the classroom: The development of affinity among students. *Journal of Experimental Social Psychology*, **28,** 255–276.

Moreland, R. L., & Levine, J. M. (1989). Newcomers and oldtimers in small groups. In P. Paulus (Ed.), *Psychology of group influence* (2nd ed., pp. 143–186). Hillsdale, NJ: Erlbaum.

Moscovici, S. (1985). Social influence and conformity. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology* (3rd ed., Vol. 2, pp. 347–412). New York: Random House.

Nahavandi, A., & Aranda, E. (1994). Restructuring teams for the re-engineered organization. In *Academy of management executive* (Vol. 8, No. 4, pp. 58–68).

Nemeth, C. J. (1986). Differential contributions of majority and minority influence. *Psychological Review*, **93**, 23–32.

Nemeth, C. J. (1992). Minority dissent as a stimulant to group performance. In S. Worchel, W. Wood & J. S. Simpson (Eds.), *Group process and productivity* (pp. 95–111). Newbury Park, CA: Sage.

Nemeth, C. J., & Rogers, J. (1996). Dissent and the search for information. *British Journal of Social Psychology*, **35 (1),** 67–76.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company*. New York: Oxford Univ. Press.

O'Connor, K. M., Gruenfeld, D. H., & McGrath, J. E. (1993). The experience and effects of conflict in continuing work groups. *Small Group Research*, **24**(3), 363–382.

Peterson, R. S., & Nemeth, C. J. (1996). Focus versus flexibility: Majority and minority influence can both improve performance. *Personality and Social Psychology Bulletin*, **22**(1), 14–23.

Phills, J. A., Jr. (1996). *The dynamics of trust and credibility in the client–consultant relationship*. Paper presented at the Academy of Management Meetings, Cincinnati, OH.

Rousseau, D. (1991). Teamwork inside and out: *Business Week ADVANCE Executive Brief*, 3.

Schutz, A. (1964). In A. Broderson (Ed.), *Collected papers II: Studies in social theory*. The Hague: Nijhoff.

Stasser, G., & Titus, W. (1985). Pooling of unshared information in group decision making: Biased information sampling during discussion. *Journal of Personality and Social Psychology*, **48,** 1467–1478.

Sutton, R. I., & Louis, M. R. (1987). Row selecting and socializing newcomers influences insiders. *Human Resource Management*, **226**(3), 347–361.

Szulanski, G. (1994). *Unpacking stickiness: An empirical investigation of the barriers to transfer best practices inside the firm*. Working paper, INSEAD.

Thomas-Hunt, M. C., & Gruenfeld, D. H (1998). A foot in two worlds: The participation of demographic boundary spanners in work groups. In M. A. Neale, E. A. Mannix, & D. H Gruenfeld (Eds.), *Research on managing groups and teams* (Vol. 1, pp. 39–58). Greenwich, CT: JAI Press.

Van Maanen, J. (1977). Experiencing organization: Notes on the meaning of career and socialization. In J. Van Maanen (Ed.), *Organizational careers: Some new perspectives* (pp. 15–45). New York: Wiley.

Van Sell, M., Brief, A P., & Schuler, R. S. (1981). Role conflict and role ambiguity: Integration of the literature and directions for future research. *Human Relations*, **34,** 43–71.

Wood, W., Lundgren, S., Ouellette, J. A., Busceme, S., & Blackstone, T. (1994). Minority influence: A meta-analytic review of social influence processes. *Psychological Bulletin*, **115,** 323–245.

Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: Knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, **73**(1), 73–90.