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- learning from these experiences;
- sharing the results of the learning; and
- engaging in inquiry, knowledge building, and the publication of findings.
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Development and Test of a Contingency Framework of Coupling

Assessing the Covariation Between Structure and Culture

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Though the concept of loose coupling permeates organizational science, it has stagnated because of definitional and operational issues. In this study, a contingency framework of coupling was developed and tested. Using an organizational simulation, the pattern of covariation between cultural and structural coupling was tracked across two different stages of the organizational life cycle and two levels of technological routineness. Quantitative, network measures of cultural and structural coupling were used. As organizations evolved from the infancy to the maturity stage of their life cycle, both structural and cultural coupling among participants became tighter. Unexpectedly, individuals involved with a nonroutine technology were more tightly coupled structurally but less tightly coupled culturally when compared to individuals engaged in a routine technology.

Over the past three decades, researchers have increasingly recognized the existence of loosely coupled, that is, weakly related and fairly autonomous, elements in organi-
zations (Sanchez, 1997; Snook, 2000; Weick, 1976). However, operationalizing the concept of coupling has proven difficult (Beekun & Ginn, 1993; Firestone, 1985), and definitional questions concerning the “looseness” of coupling remain unanswered (Orton & Weick, 1990). To avoid this confusion, Firestone (1985) and Beekun and Ginn (1993) have suggested that four components of coupling be kept separate: elements, domains, dimensions, and mechanisms. This four-component model has yet to be tested.

A contingency framework of coupling allows for such a test. The need for this framework is demonstrated by Peters and Waterman’s observations (1982) concerning excellent companies. One attribute of these firms is their ability to simultaneously manage loose/tight linkages. To achieve this balance, practitioners need to understand the factors that tighten or loosen coupling. A contingency framework of coupling can also make different predictions from, and complement other contingency models. For example, Lawrence and Lorsch (1967) posit that when faced with environmental turbulence, high differentiation/high integration organizations are the most effective and adaptive. By contrast, the loose coupling framework ascribes long-term effectiveness and adaptability to high differentiation/low integration among organizational elements (Weick, 1982).

In this study, we examine the coupling process among organizational participants over time when technological routineness is manipulated. Data were gathered from simulated organizations, and network analysis measures were developed to track variations in coupling.

THE CONCEPT OF LOOSE COUPLING

The diversity of current coupling definitions exemplifies the difficulties researchers have had in demarcating what “loose” coupling is (Orton & Weick, 1990). First, researchers differ about the nature of loose coupling. For example, coupling is perceived to be loose between elements when they are either weakly related to one another (Glassman, 1973) or preserve their separate identity (Weick, 1976). Second, researchers are unclear as to what is being coupled together. Third, most coupling definitions omit presenting explicit benchmarks against which to assess looseness. Hence, a comparison of coupling relationships may be subjective and unreliable.

Taking a different approach from previous researchers, Firestone (1985) and Beekun and Ginn (1993) propose that the vagueness surrounding loose coupling may stem from confusion among four coupling components. First, coupling elements refer to “anything that may be tied together” (Weick, 1976, p. 5). Examples of coupled elements include: intentions with actions (Weick, 1976) and actors with actors (Tsai & Goshal, 1998).

Second, a coupling domain describes the area of the relation between coupling elements. For example, two organizational actors (coupling elements) can be exchanging task-related information (task-related communication coupling domain) or can interact socially (social domain). At a general level, coupling domains can be categorized either as structural or cultural depending on the content of the activity linking the cou-
pling elements. Structural domains are formal and task-related whereas cultural domains are symbolic and nontask-related.

A survey of the coupling literature identified five structural coupling domains. These domains relate to work-related communication activities (Grabowski & Roberts, 1998; Perrow, 1984); workflow activities (Ibarra, 1993; Kerwood, 1995; Perrow, 1984); bureaucratic activities (Covaleski & Dirsmith, 1983; Ouchi, 1979); resource-exchange activities (Perrow, 1984), and structuring activities (Weick, 1979, 1982). The primary cultural coupling domain focuses on social (informal and symbolic) activities involving nontask-related communication and socializing (Covaleski & Dirsmith, 1983; Kerwood, 1995; Ouchi, 1979).

Third, a coupling dimension characterizes the “quality” of this interaction (Clark, Astuto, & Kuh, 1983; Ibarra, 1993). Three of these dimensions will be studied here. Reciprocity depicts the proclivity for loosely coupled elements to have few variables in common and to interact infrequently (Glassman, 1973). Strength reflects the tendency for loosely coupled elements to have weak variables in common (Glassman, 1973; Weick, 1982). For example, two organizational participants are loosely coupled if they communicate through several intermediaries rather than directly. Dependence describes the fact that loosely coupled elements are relatively independent of each other (Weick, 1976).

Fourth, coupling mechanisms represent the practices (e.g., rules, norms, values) or processes (e.g., supervision, coordination by plan or by standardization) that cause elements to function together. These mechanisms also involve a larger unit of analysis than the individual coupling element. For example, centralization, a common coupling mechanism (Firestone, 1985), describes a system (workunit or organization) process, that is, how a number of elements are connected.

Previously researched typologies of coupling mechanisms (Covaleski & Dirsmith, 1983) can be labeled either as structural or cultural. Structural coupling mechanisms represent the “formal, enduring arrangements within an organization which allow it to operate,” can be modified only through formal decisions (Firestone & Wilson, 1985, p. 2), and can be found only in formal, task-related, that is, structural, domains. Examples of structural coupling mechanisms include the hierarchy of authority (Weick, 1976), rules (Firestone, 1985), and centralization (Firestone, 1985).

Cultural coupling mechanisms reflect the subjective side of the organization, can be modified only through symbolic interactions (Firestone & Wilson, 1985), and are located in domains with informal and symbolic activities. Examples of cultural coupling mechanisms include rituals, metaphors, and values (Smircich, 1983). Values represent shared ways of thinking and acting among organizational participants (Smircich, 1983). Cultural coupling is likely to be tight in situations in which actors participate in the same rituals and rely on the same values for thinking and acting while seldom considering alternative ideologies and value systems.

In this study, cultural and structural coupling are assumed to covary according to either a compensatory or a reinforcement pattern. A compensatory pattern (Bresser & Bishop, 1983; Corwin, 1981) implies that an emphasis on organizational structure means a de-emphasis on organizational culture and vice versa. By contrast, a rein-
forcement pattern presumes that if structural relations are tight, cultural relations will be tight too.

A CONTINGENCY FRAMEWORK OF LOOSE COUPLING

As indicated above, the Janusian characteristics of loose coupling, the quest for excellence, and the deficiencies of previous models stress the need for a contingency framework of loose coupling. Two contingency variables will be studied here: technological routineness and stages in the organizational life cycle. First, technology has been more frequently linked to cultural coupling and to structural coupling than have other contextual variables (Ouchi, 1979; Perrow, 1984). Second, as organizations move from simple to complex technologies and the catastrophic potential of operator mistakes increases, an understanding of the links between technological routineness and coupling becomes more critical (Perrow, 1984; Snook, 2000).

Besides technological routineness, another variable that may affect the pattern of covariation between structural and cultural coupling is the stage of the organizational life cycle. Variations in coupling in one organization may not be meaningfully compared with variations in coupling in another organization unless “their relation to the organization’s stage of development is determined” (Selznick, 1957, p. 103). The inclusion of the life cycle variable also allows for a dynamic perspective of the covariation between structural and cultural coupling.

Stages of the Organizational Life Cycle

Only Weick (1985) and Quinn and Cameron (1983) suggest what effects an organization’s evolution may have on both structural and cultural coupling. However, these researchers offer competing explanations of the processes involved. Because they use different labels to describe life cycle stages, a common frame of reference is needed to compare the two models.

During an organization’s infancy, Weick (1985) notes that organizational participants differ in backgrounds, norms, and values. He suggests that top leadership will rely instead on formal control mechanisms (tight structural coupling). Because common norms and values have yet to develop, cultural coupling will be loose. By the maturity stage of the organizational life cycle, norms and values have developed and now provide a common basis for action (tight cultural coupling). As a result, structural coupling is loosened.

By contrast, Quinn and Cameron (1983) propose a three-staged model of the organizational life cycle. During the infancy stage, they suggest that organizational participants emphasize the development of value systems (tight cultural coupling) in order to overcome their differences and engage in little planning and formal coordination (loose structural coupling). When the organization reaches the maturity stage, less emphasis is placed on ideology and more attention is paid to the development of a stable and formalized structure and institutionalization (looser cultural coupling and
tighter structural coupling than during the infancy stage). At the postmaturity stage, the organization seeks to recapture its earlier flexibility. It will ease bureaucratic rules and procedures while reaffirming control through its value system (looser structural coupling, tighter cultural coupling than during the maturity stage). Because Weick (1985) did not discuss a postmaturity stage, we will focus on the infancy and maturity stages of both models.

Although both Quinn and Cameron (1983) and Weick (1985) propose a compensatory pattern of covariation between structural and cultural coupling, an integrative perspective of their two models also suggests the existence of a reinforcement pattern. At infancy, structural coupling is loose because organizational participants have little job experience and do not yet know how to allocate tasks. The same actors are loosely coupled culturally because they have not had the time to develop norms. Over time, division of labor takes place and a clear hierarchy of authority is instituted (Quinn & Cameron, 1983), leading to tight structural coupling. By the maturity stage, norms and values have developed that provide a common frame of reference and tight cultural coupling (Selznick, 1957). These cultural values legitimize and reinforce the power base of those at the top of the hierarchy (Ouchi, 1979).

This leads to the following competing hypotheses:

- **Hypothesis 1.1 (Weick, 1985):** Structural coupling will be tighter during the infancy stage of the organizational life cycle than during the maturity stage of the organizational life cycle.
- **Hypothesis 1.2 (Weick, 1985):** Cultural coupling will be looser during the infancy stage of the organizational life cycle than during the maturity stage of the organizational life cycle.
- **Hypothesis 2.1 (Quinn & Cameron, 1983):** Structural coupling will be looser during the infancy stage of the organizational life cycle than during the maturity stage of the organizational life cycle.
- **Hypothesis 2.2 (Quinn & Cameron, 1983):** Cultural coupling will be tighter during the infancy stage of the organizational life cycle than during the maturity stage of the organizational life cycle.
- **Hypothesis 3.1:** Structural coupling will be looser during the infancy stage of the organizational life cycle than during the maturity stage of the organizational life cycle.
- **Hypothesis 3.2:** Cultural coupling will be looser during the infancy stage of the organizational life cycle than during the maturity stage of the organizational life cycle.

Though knowledge of how the organizational life cycle affects the covariation between structural and cultural coupling is important, practitioners have little control over which stage their organization is at. Hence, they will be more interested in contingency variables over which they can control. Organizational technology is one such variable.

**Technology**

The study of technology-structure relationships has been plagued by inconsistent results (Miller, Glick, Wang, & Huber, 1991). Several researchers (Withey, Daft, & Cooper, 1983) have linked this problem to the use of different technology definitions. However, in a comprehensive meta-analysis covering more than 34 technology-structure studies, one definition of technology, routineness (Perrow, 1970), was found to be most strongly related to key dimensions of structure such as centralization and formalization (Miller et al., 1991). Perrow’s (1970) definition also applies to the whole tech-
nological process and does not prevent researchers from connecting coupling to any particular phase of the process. Finally, the routineness aspect of technology has already been explicitly related to coupling by Jones (1983), Ouchi (1979), and Perrow (1984).

Perrow (1970) posits that task routineness consists of two dimensions: the number of exceptions encountered in the work and the extent to which the exceptions are analyzable. A routine workflow is characterized by few exceptions and high analyzability; the process is very rigidly laid out and the stages in the process are sequentially invariant. Perrow (1984) hypothesizes that this type of workflow leads to tight structural coupling among actors. By contrast, a nonroutine workflow is characterized by many exceptions and low analyzability; the process is very unstructured and the sequence of activities is not rigid. Perrow (1984) predicts that the amount of autonomy required in nonroutine workflows will preclude tight structural coupling.

Agreeing with Perrow (1984), Jones (1983) further suggests that structural and cultural coupling follow a compensatory pattern with respect to different types of technologies. He takes a transaction cost approach to organizational culture and argues that organizational culture emerges out of the "property rights" or the institutional arrangements that are developed to regulate the exchanges between members of an organization. Thus, values are seen as evolving from the way in which property rights are enforced in the organization. In a routine, mass-production context, he suggests that there may be "a weak specification of property rights in terms of length, inclusiveness, or content," as well as close supervision and the enforcement of strict guidelines because of the relative ease of monitoring behavior and the emphasis on efficiency. Conversely, in a nonroutine, professional context, he expects (a) loose structural coupling because of the exorbitant costs of monitoring output and (b) tight cultural coupling because of the substitution of bureaucratic procedures by professional norms and values.

Hypothesis 4.1: Structural coupling will be tighter among participants in a routine organization than among participants in a nonroutine organization.

Hypothesis 4.2: Cultural coupling will be looser among participants in a routine organization than among participants in a nonroutine organization.

METHOD

Sample

The participants consisted of 228 upper division undergraduate students in business administration at a U.S. university who were required to participate in an organizational simulation as part of a course in management. Most participants had business work experience. Approximately 20 to 39 students were assigned to each of eight separate simulated organizations, with an average of 29 students per organization.
The Organization Game

The Organization Game (Miles & Randolph, 1985) was used to investigate the coupling process in a dynamic framework. The game created a minimal organization structure for beginning play, initially assigning participants to one of four physically separated divisions, each consisting of one or two departments or subunits. Prior to the game, only the unit heads and controllers of a few predetermined resources were randomly selected. At the start of the game, the unit heads decided (a) how to staff their respective departments and (b) what structures to set up in order to divide and coordinate work effectively.

Structure. After some pilot testing, a modified version of the Organization Game was run. The simulated organization was made up of four physically separated divisions each consisting of one or two departments. Each department performed a predetermined function. Of the seven departments, five performed staff functions while the other one or two were line departments. The line departments performed the main production activities. Production involved acquiring and transforming raw materials into finished products and selling these products to the game coordinator. The support functions were the same for all organizations.

Game timing. Before being allowed into the game, each participant was required to read the participants’ manual in order to become familiar with the rules and the game outline. A pregame briefing session of 1 hour (required by Miles & Randolph, 1985) was held 2 days before the first game session to ensure that participants understood the game manual. During this briefing session, organizational participants were randomly assigned to the departments of the simulated organizations and the unit heads and the resource controllers were randomly appointed. No further discussion of the game was allowed before the start of the simulation itself.

Seven successive sessions, each lasting exactly 50 minutes, simulated one organization over one weekend. Four sessions (with one 45-minute break for lunch) were held on Saturdays and three on Sundays. At the beginning of the game, all organizations started out with the same token amount of resources. Later, resources reflecting the performance of the unit and of the organization during the previous sessions were passed out by the coordinator before the next session began.

Each session was followed by a 15- to 30-minute break. After each session, participants were required to turn in a log sheet, which they had been asked to fill in soon after talking with other participants or after exchanging any resource. Organization members also completed a network questionnaire during the breaks following the first, fourth, and seventh sessions. To decrease termination artifacts, participants were not told when the simulation would end; rather, the game was abruptly terminated after the seventh session. One half-hour of debriefing followed. Two weeks later, each participant had to turn in a written narrative of his/her game experience.

Resources. The organization possessed the following three types of tangible resources: (a) communication tickets that were used when a participant communicated with one in another division, (b) base wage tickets that represented a base salary that
each participant had to earn each session, and (c) organization dollars that could be used to purchase raw materials, anagrams, puzzles, pay salaries, invest, make loans, and so forth. While each organization started with a minimum amount of resources, individual members could earn more by doing their work effectively, avoiding lateness or absenteeism (for which they were penalized). The coordinator relied on a predetermined random schedule of payment when he gave out resources, and one in every five packs of cards (routine manipulation) was rejected at random for poor quality, or one in every five puzzles (nonroutine manipulation) was unsolvable.

**Operationalization of the Independent Variables**

*Stages of the organizational life cycle.* Following Cameron and Whetten (1981), the difference between infancy and maturity in the organizational life cycles was monitored by the passage of time since the creation of the organization. An organization at Session 1 is assumed to be at the infancy stage of its life cycle. At Session 7, it is assumed to have reached maturity.

*Technological routineness.* In the routine manipulation, an organization had only one line department that manufactured greeting cards (a simple, routine task). It involved sequential, repetitive steps: cutting blank paper to specifications, drawing a predetermined design with cutouts on the outer flap, writing a predetermined greeting on the inner flap, and folding the card. The task was the same from session to session, and any problems encountered during production were relatively analyzable. Conversely, when an organization had a nonroutine core technology, two line departments had to purchase half of a puzzle. To solve the whole puzzle, they had to cooperate and interact reciprocally. Here, the topic area of each puzzle was different, and the manner in which to solve the puzzle varied. Hence, the routine manipulation was designed to be low in the variety of exceptions encountered in the workflow, with all these exceptions being relatively easy to solve. The nonroutine manipulation was designed to contain many exceptions, with the solution to these exceptions being relatively less easy. The greeting card task in the routine condition was different from an anagram-solving task in the original game version. This modification was necessary because pilot testing had indicated that both the puzzle and anagram tasks were perceived as being equally nonroutine. Four organizations were assigned to each of the routine and the nonroutine conditions.

**Assessing the Manipulations**

*Monitoring the organizational life cycle.* To verify whether the organizations were indeed evolving through different stages of the organizational life cycle and to determine when the organizations were passing through each stage, three sources of evidence were relied on. Each participant had to turn in written account of his or her game experience session by session within 2 weeks after a game. Game materials developed by participants were turned in at the end of the game (e.g., organizational charts, newsletters, forms, etc.).
Scale for manipulation check of routineness. This scale was borrowed from Withey et al. (1983). It tapped the degree of routineness within each unit and was used as a manipulation check. It measures the exceptions dimension, that is, the number of unexpected events during the transformation of inputs into outputs and the analyzability dimension, that is, the degree to which problem solving during the transformation process is based on standard procedures.

Operationalizing the Dependent Variables

As mentioned above, all game participants answered a network questionnaire during the breaks following the first, fourth, and seventh sessions. For the sake of illustration, we have included only part of the network questionnaire. Items 1 through 4 yielded the activities related to workflow, structuring, resource exchange, and bureaucratic exchanges.

1. Please list the major task(s) performed by your workunit in Session 1.
2. Of the task(s) you have just listed, please circle those that you performed during Session 1.
3. Who assigned you to perform the above circled task(s)? Please write their last name(s) next to the task(s) you performed.
4. Who did you report to in Session 1 after performing your task(s)?

Other questions captured activities related to social communication and task-related communication.

The participants’ answers to the above network questions generated a list of 352 activities. Five independent judges were asked to classify these answers into 33 categories and then again into six global categories that mapped into the six coupling domains or network activity areas previously identified in the coupling literature. Standard descriptions of the coupling domains were provided to the judges to help them in their task.

To measure both structural and cultural coupling, three dimensions (reciprocity, dependence, and strength) were tracked in the six coupling domains identified by the judges. Structural coupling was measured by tracking these dimensions in the structural coupling domains, that is, workflow, bureaucratic, structuring, resource exchange, and task-related activities. Simultaneously, cultural coupling was measured by monitoring the same three dimensions in the only domain with social content (social activities).

After the coupling domains had been identified, network analysis was used to measure the coupling dimensions characterizing the relationships among the participants. A network-analysis approach to coupling is desirable for several reasons (Beekun & Ginn, 1993). To begin with, there is a natural fit between the network-analysis perspective and the coupling concept because both, by definition, focus on the patterning of relationships among elements. Network analysis provides a mathematical language for formalizing the rich verbal arguments in the loose coupling literature and allows for the development of verifiable and reliable measures of coupling dimensions and coupling mechanisms. Finally, by using network analysis, researchers can continu-
ously monitor how links between coupling elements are created and dissolved across time.

A network is defined as a specific type of relation among a defined set of actors (Knoke & Kuklinski, 1982). The individuals coupled together were represented as network actors. The coupling domains were equated to the network content, for example, a communication or workflow network. The coupling dimensions described the type of relationship among coupling elements or network actors, for example, strength, dependence, and reciprocity. The actual values for each of the three coupling dimensions were then computed with the network formulae in Table 1.

Finally, coupling mechanisms represent the macro-level practices and processes that hold elements together. Coupling mechanisms cannot per se be loose or tight. As Firestone (1985) suggests, tight coupling through mechanisms can be monitored by way of individual-level outcomes. Paralleling Burt’s (1982) network measure of norms, our measure of cultural coupling though values focuses on the distance outcome of this mechanism and is described in Table 1.

The Organizational Culture Inventory (OCI) (Cooke & Lafferty, 1983) was used to identify the values holding these actors together. It is an instrument designed to tap organizational values and has evidence of strong psychometric validity. After pilot runs of the game revealed the OCI to be too long and repetitive, a shortened version was derived based on the results of a factor rotation (Cooke & Rousseau, 1983) of the statements. Using the three independent cultural dimensions previously identified by Cooke and Rousseau (1983) from the complete OCI instrument, we selected four representative statements from each combination of lifestyles that had generated one of the three personal orientations. The shortened OCI version consisted of 12 statements listed below:

During Session 1, to what extent do each of the following help people to “fit in” and to meet expectations in your workunit? (Response options: 1 = not at all; 2 = to a slight extent; 3 = to a moderate extent; 4 = to a great extent; 5 = to a very great extent).

Choose one of the above response options for each statement below.

___ Pointing out flaws. ___ Being supportive of others.
___ Doing things for the approval of others. ___ Competing rather than cooperating.
___ Working for a sense of accomplishment. ___ Never challenging superiors.
___ Thinking in terms of group satisfaction. ___ Playing “politics” to gain influence.
___ Appearing competent and independent. ___ Conforming.
___ Putting things off. ___ Emphasizing quality over quantity.

Analysis Techniques

The analyses first focused on determining the interrater reliability of the independent judges classifying the questionnaire data into coupling domains. To assess measurement error in the judgments made, reliability indices were computed using Shrout and Fleiss’s (1979) method (Model 3, k) for calculating intraclass correlations.

Second, an oblique factor analysis was conducted on Withey et al.’s (1983) routineness scale to verify whether the items in the instrument collapsed into the two
TABLE 1

Network Analysis Measures of Coupling Components

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mechanism</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reciprocity</td>
<td>The reciprocity measure counts the number of relations (types of activities within a coupling domain) an actor i sends out to and receives from other actors j in a network while controlling for network size.</td>
<td>The set of mean (rescaled) scores for all organizational actors on each of the same n values is then calculated as $Y_1$ through $Y_n$. The distance between an actor j’s rescaled scores on n values ($X_{1j}$ through $X_{nj}$) and the set of mean rescaled scores ($Y_1$ through $Y_n$) is calculated as $P_j$. A higher score indicates tighter cultural coupling through values.</td>
</tr>
<tr>
<td>2. Dependence</td>
<td>The larger the number of people an actor can obtain the same input(s) from, the less dependent he/she will be on any single actor. Actor j’s degree of dependence is $DEP_{jk}$. First, $D_{ij}$ represents the number of relations received by actor j from all other actors ($d_{ijk}$) is calculated and divided by $n-1$ to control for the size of the network. The inverse, $DEP_{jk}$, is found by subtracting $D_{ij}$ from the maximum dependence score in network k. The dependence measure is rescaled so that a smaller score represents less dependence and vice versa.</td>
<td>$\text{DEP}<em>{jk} = \text{MAX}(D_k) - D</em>{ij}$</td>
</tr>
<tr>
<td>3. Strength</td>
<td>The strength of coupling is measured by the inverse of the path distance between actors in a coupling domain. Strength is computed on a path distance matrix $S^k$ where $S_{ij}$ is the minimum number of paths actor i takes to reach actor j in network k. $S_{ij}$ is divided by $n-1$ to control for size and for self-directed relations. Hence, the average directness for each actor is the measure of coupling strength. $s_{ijk}$ represents the inverse of $S_{ij}$, and is the difference of the latter from the maximum path distance of network k.</td>
<td>$s_{ijk} = \text{MAX}(S_k) - S_{ijk}$</td>
</tr>
</tbody>
</table>

$R(p_i) = \frac{\sum_{j=1}^{n} a(p_j, p_i)}{n-1}$

$D_{ij} = \frac{\sum_{k=1}^{n} d_{ijk}}{n-1}$

And

$\text{DEP}_{jk} = \text{MAX}(D_k) - D_{ij}$
subscales described by Perrow (1970). Third, regular one-tailed t tests were carried out for Sessions 1, 4, and 7 to check whether the technology manipulation worked.

The analyses for the hypotheses were then conducted. To guard against multiple hypothesis testing, a MANOVA was run with one between-subjects factor (technological routineness) and two repeated-measures factors (stages of the organizational life cycle and type of coupling measure). Next, separate-within and between MANOVAs were run to determine the impact of technological routineness and organizational life cycle on structural and cultural coupling.

Finally, Hypotheses 1, 2, and 3 were tested through two-tailed, paired comparison t tests. This type of t test was preferred to an analysis of variance test of Hypotheses 1, 2, and 3 because these were competing hypotheses (Hayes, 1981). Hypothesis 4 was tested through the repeated-measures ANOVA technique with routineness as a between-subjects factor.

RESULTS

Reliability Assessment

Coupling domains. There were 352 different activities mentioned by the organizational participants, and were classified by five independent raters into the six coupling domains described earlier. Any disagreement among the raters was solved by following the modal opinion concerning that activity. Reliability estimates computed through Shrout and Fleiss’s (1979) method ranged from .74 to .96 for the six coupling domains. The mean reliability for all six domains was .84.

The routineness scale. All interitem correlations among the 10 items of the scale from Withey et al. (1983) were significant at the .001 level. Because the two factors in the questionnaire (exceptions and analyzability) are theoretically related and not orthogonal to each other, an oblique-factor analysis was conducted. This factor analysis confirmed Withey et al.’s (1983) findings. Two factors were derived that represented the “exceptions” and “analyzability” dimensions. Correlations between these factors for Sessions 1, 4, and 7 were .51, .48, and .56.

Assessing the Manipulations of the Independent Variables

Tracking the stages of the organizational life cycle. Generally, the simulated organizations followed the same developmental processes as those described by Quinn and Cameron (1983) and Cameron and Whetten (1981). Among the seven sessions in the simulation, Session 4 marks a clear break with the three previous sessions because the participants’ budding concern with efficiency was the first sign of the maturity stage. Therefore, Sessions 1 through 3 of the Organization Game can be identified with the infancy stage of Quinn and Cameron’s (1983) model. Sessions 4 through 7 can be identified with the maturity stage of Quinn and Cameron’s (1983) model.
Manipulation check for the routineness scale. The $t$ tests were conducted between means of routine and nonroutine technology organizations. The manipulation discriminated significantly between the two technologies on the “analyzability” dimension of routineness but not on the “exceptions” dimensions. The “analyzability” dimension explained 25% of the variance in the routineness manipulation per session whereas the “exceptions” dimension explained 5%. Thus, the routineness manipulation will be interpreted as a manipulation of analyzability.

Assessing the Dependent Variable Measures

An examination of the 12 scale items borrowed from Cooke and Lafferty’s (1983) OCI indicated that most of the items were significantly correlated with each other but were not collinear.

Table 2 presents the means and standard deviations of all dependent measures of cultural and structural coupling aggregated in two different ways: (a) routine versus nonroutine organizations and (b) the same organizations at the infancy versus the maturity stage. Table 3 presents the correlations for the same dependent measures and the routineness subscales (i.e., analyzability and exceptions). Specific correlations from this table will be discussed as they become relevant.

Effects of the Manipulations on Structural and Cultural Coupling

To guard against multiple hypotheses testing, a MANOVA with one between-subjects factor (technological routineness) and two repeated-measures factors (stages of the organizational life cycle and type of coupling measures) was run. The multivariate test criteria (e.g., Wilks’s lambda and Hotelling’s $T^2$) supported the hypotheses for an overall technological routineness effect ($F_{38, 189} = 4.1, p < .0001$), an overall type of measure effect ($F_{18, 209} = 376.78, p < .0000$), and an overall organizational life cycle effect ($F_{1, 226} = 5.44, p < .02$).

Table 4 summarizes the repeated-measures MANOVA results. Although the overall multivariate $F$ significantly supported the hypothesis that there was a technology main effect, the between-subjects test for technology alone exceeded the .05 level. Given that the above MANOVA significantly rejected the null hypotheses of no overall main effects, a series of repeated-measures ANOVAs was then conducted to track how much variance technological routineness and the stage of the organizational life cycle accounted for in each coupling measure.

Table 5 summarizes the results of these univariate tests and indicates that in most domains and for most dimensions, the organizational life cycle accounted for more variance in structural and cultural coupling than did the routineness manipulation. The repeated-measures models for each coupling measure generally captured modest amounts of variation in all six domains. Technological routineness explained about 2.6% of the between-subjects variance. The organizational life cycle variable explained about 7.5% of the within-subjects variance. Given that the overall contin-
### TABLE 2
Means and Standard Deviations of Coupling Components

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**NOTE:** Numbers in parentheses are standard deviations.
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<td>21. Exceptions</td>
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</tbody>
</table>

*p < .05, **p < .01, ***p < .001.
gencymodelhasreceivedgenerallystrongsupport,thetwomainresearchquestionsof
this study now will be examined in detail.

Infancy Versus Maturity Stage of
the Organizational Life Cycle

Cultural coupling. Weick’s (1985) Hypothesis 1.2 about cultural coupling and the
integrative Hypothesis 3.2 received strong support when (a) the reciprocity of links
among organizational actors in the social activities domain and (b) coupling through
cultural values were assessed. According to Table 6, cultural coupling through values
became tighter as an organization became older (t = –5.33, p < .001, R² = .03), and
actors were bound by a greater number of social relations at the maturity than at the
infancy stage (t = –13.10, p < .001, R² = .25).

Structural coupling. Unlike Quinn and Cameron’s (1983) hypothesis about cultural
coupling, their hypothesis about structural coupling (Hypothesis 2.1) as well as the
integrative Hypothesis 3.1 were strongly supported. Organizational participants were
more tightly coupled structurally during the maturity stage of the organizational life
cycle than during the infancy stage across all three dimensions in Table 6: (a) they
exhibited higher reciprocity by engaging in more bureaucratic activities (t = –2.31, p < .05, R² = .007), discussing more common task-related topics (t = –5.2, p < .001, R² = .04), interacting in more workflow activities (t = –5.15, p < .001, R² = .02), and being
involved in more resource exchanges (t = –5.09, p < .001, R² = .04); (b) they depended
more on each other in all coupling domains except for structuring (p < .05); and (c)
they were more strongly linked to other actors in the workflow (t = –3.86, p < .001, R² = .02) and resource exchange domains (t = –4.27, p < .001, R² = .03). These results were
generally consistent across the coupling dimensions for three out of five domains:
communication, workflow, and resource exchange, but less so for the bureaucratic
domain. Overall, the reinforcement pattern suggested by Corwin (1981) and explicitly

TABLE 4
Repeated Measures MANOVA of Overall Model

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
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<td>Routineness × Life Cycle</td>
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<td>Routineness × Type of Measure × Life Cycle</td>
<td>18</td>
<td>1.13</td>
<td>2.26**</td>
<td>.0013</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.
stated in Hypotheses 3.1 and 3.2 best describes the covariation between cultural and structural coupling.

Further examination of the reinforcement pattern of covariation between cultural and structural coupling suggested the existence of a competing familiarity hypothesis (Weick, 1974). This hypothesis (Weick, 1974) implies that the tightening of both cultural and structural coupling over an organization’s life cycle is due to a linear, positive relationship between time and predictability of both task-related and non-task-related behavior.

To check for familiarity effects, coupling data from Sessions 1, 4, and 7 were plotted. Furthermore, the main effect of the organizational life cycle on each dependent variable was recalculated using questionnaire data from all three sessions. This recalculation with three points in time was required for partitioning the life cycle effect into

| TABLE 5 |
| Results of Repeated Measures MANOVA: Effects of Technological Routineness and Organizational Life Cycle on Structural and Cultural Coupling |

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>df</th>
<th>F</th>
<th>R²</th>
<th>df</th>
<th>F</th>
<th>R²</th>
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<td>.023</td>
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<td>.006</td>
<td>1</td>
<td>6.88**</td>
<td>.028</td>
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<td>.112</td>
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</table>

*p < .05. **p < .01. ***p < .001.
its linear and quadratic components and for carrying out trend analyses via post hoc comparisons (Hayes, 1981). The familiarity hypothesis was rejected when the partitioning of the organizational life cycle effect revealed significant amounts of both linear and quadratic variation.

Routine Versus Nonroutine Technology

Because the MANOVA of the overall model significantly supported the hypothesis of a technological routineness main effect, subsequent analyses were carried out for each dependent measure. The results of the tests for Hypotheses 4.1 and 4.2 are summarized in Table 6.

Cultural coupling. When data were averaged across both the infancy and the maturity stages of the organizational life cycle, routine actors were more tightly coupled through cultural values than nonroutine actors ($F_{1,226} = 5.31, p < .05, R^2 = .023$). This

<table>
<thead>
<tr>
<th>TABLE 6</th>
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<tbody>
<tr>
<td><strong>Summary of Two-Tailed Paired t Test Results for Hypotheses 1.1 and 1.2</strong></td>
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<td>2.5735</td>
<td>1.4519</td>
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</table>

*p < .05. **p < .01. ***p < .001.
tighter coupling of routine actors through cultural values might be due to the fact that they engaged in more social activities ($F_{1, 226} = 19.22, p < .001, R^2 = .078$) than nonroutine organizational participants.

Structural coupling. Contrary to Hypotheses 4.1 and 4.2, nonroutine organizational actors were more tightly coupled structurally than routine organizational participants. For example, nonroutine actors discussed more task-related topics ($F_{1, 226} = 8.50, p < .01, R^2 = .036$) and were more dependent on one another in the workflow domain ($F_{1, 226} = 4.09, p < .05, R^2 = .02$). They also engaged in more structuring activities ($F_{1, 226} = 4.38, p < .05, R^2 = .014$) and interacted more directly with one another while creating and modifying new structural forms ($F_{1, 226} = 7.03, p < .01, R^2 = .03$).

A compensatory pattern of covariation is clearly visible. Overall, routine actors were more tightly coupled both through cultural values and through more frequent social interaction but maintained looser structural linkages. The reverse pattern held true for nonroutine actors.

**DISCUSSION AND CONCLUSION**

This study developed and tested a contingency approach to coupling and measured coupling quantitatively. Technology (routine vs. nonroutine) was manipulated as an independent variable and its effects on structural and cultural coupling were tracked across the infancy and maturity stages of the organizational life cycle. Multivariate tests indicated that the overall model was sound. Subsequent analyses revealed that as organizations evolved from the infancy to the maturity stage of their life cycle, cultural and structural coupling covaried according to a reinforcement pattern. Furthermore, a reverse compensatory pattern was uncovered with regard to technological routineness. Nonroutine organizations were more tightly coupled structurally and more loosely coupled culturally than routine organizations.

**Effect of Stages of Organizational Life Cycle on Coupling**

In exploring the effect of different stages of the organizational life cycle (infancy vs. maturity) on cultural and structural coupling, we uncovered a reinforcement pattern. As both routine and nonroutine organizations matured, actors became significantly more tightly coupled by cultural values and engaged in more social activities together. On the structural side, actors became tied down by more red tape and more dependent on others for task-related information. More key resources (i.e., raw materials) were being exchanged through more direct interaction. The only exception to this overall pattern was with respect to the structuring coupling domain. A competing familiarity hypothesis (Weick, 1974, p. 214) was generally disconfirmed.

**Effect of Technological Routineness on Coupling**

Second, we investigated the effect of technological routineness on cultural and structural coupling in an organization. A reverse compensatory pattern was detected.
Thus, nonroutine actors were found to be more tightly coupled structurally than were their routine counterparts: they communicated about their task(s) more frequently, engaged in more structuring activities, and exchanged resources more directly with peers. Culturally, nonroutine actors participated in less social activities, and were less tightly coupled via cultural values.

Though the impact of routineness on both cultural and structural coupling was the reverse of what had been predicted, this finding is not spurious for several reasons. First, a meta-analysis (Miller et al., 1991) reported routineness-formalization correlations that ranged from −.27 to .81. Through their meta-analytic procedures, Miller et al. (1991) showed that the routineness-formalization was positively associated only with the use of smaller sample units. In fact, the average size of the simulated organizations in this study was 29 and therefore approached the upper limit of the ideal organizational size (between 15 and 32) preferred by the creators of the game (Miles & Randolph, 1985). Though nonsignificant, the size-analyzability correlation in the Miller et al. (1991) meta-analysis was −.06. Consequently, the negative relationship between technological routineness and structural coupling uncovered in our study might have been moderated by the size of the simulated organizations.

Second, the compensatory pattern uncovered between cultural and structural coupling might also have resulted from a key difference in the core technology of the organizations. As indicated earlier, the production technologies of the organizations were significantly differentiated along only one dimension of routineness: analyzability (Perrow, 1970). During the infancy stage of the organizational life cycle, both routine and nonroutine actors took similar amounts of time to figure out their task assignments and did not have much time left over for social activities. Later, as the organizations matured, the routine actors found their tasks significantly more analyzable, took less time to achieve a high level of production, and had plenty of time left over to engage in social activities and the development of organizational values.

Conversely, nonroutine participants had to deal with each puzzle differently because each differed in content and in length. Solving the puzzles was quite demanding and, as one participant remarked, “the mental drain had [her] feeling tired.” Given then that the nonroutine actors found their tasks significantly less analyzable and mentally more taxing, they had less time and energy to invest in developing values and to get involved in social, nontask-related activities.

While the above processes partly explain why routine actors were more tightly coupled culturally than nonroutine actors, they do not explain why routine actors also were more loosely coupled structurally than their nonroutine counterparts. Again, a review of the written accounts from the participants in the Organizational Game indicated the routine actors would rotate to different tasks on the assembly line partly to add variety and autonomy in the production division. They experienced more autonomy and less structural constraints than did nonroutine workers.

Besides developing a contingency framework of coupling, a primary objective of this study was to formulate network measures of coupling. In spite of the lack of an independent assessment of their reliability and external validity, these measures detected patterns of covariation that are substantiated by the written accounts. The
external validity of these measures must be assessed in a field study before they can be completely relied on.

Caveats

Finally, caution must be exercised in interpreting the findings: First, if the manipulation checks performed to derive the technology subscales are referred to, the technological routineness manipulation used in the game worked only with respect to the “analyzability” dimension but not the “exceptions” dimension of Perrow (1970). Even if this manipulation is not one of routine versus nonroutine, it could be viewed as differentiating between a craft technology (low exception/low analyzability) and a routine (low exception/high analyzability) technology. Hence, the manipulation is still differentiating between two generic types of technologies.

Second, the organization game was limited. It was primarily an organization simulation in which students took part during a weekend. Hence, it might not have provided the participants with the full range of options usually available to participants in real organizations. Furthermore, the study participants were business students with only limited business experience.

Third, the consequence of only one cultural coupling mechanism (the outcome measure) was appraised. Structural coupling mechanisms, such as supervision, feedback, and division of labor, and cultural coupling mechanisms, such as norms, rituals, and stories, need to be investigated to develop further this contingency framework of coupling.

Implications for Researchers and Practitioners

Until field studies or experiments are carried out to test this contingency model, the external validity of this study must be viewed with caution. More explicitly, field researchers should consider several important design implications. First, multiple coupling mechanisms and dimensions need to be monitored because of the complex nature of coupling relationships. As Weick (1976, 1982) indicates, loose coupling occurs infrequently and irregularly. To track both loose and tight coupling, researchers therefore must “complicate” themselves as well as their instruments (Weick, 1979). Second, contingency variables may not affect coupling in the same manner in different domains. Relationships among actors in one domain may become tighter while relationships among the same actors in another domain may become looser. Third, care must be exercised in the use of network analysis to measure coupling. Network analysis requires the respondent to recall many links across multiple domains. Hence, network measures of coupling must be complemented by qualitative measures to ensure convergent validity.

The practical implications of this research are straightforward. To begin with, Peters and Waterman (1982) suggested that excellent organizations are able to maintain a simultaneous loose/tight balance. Thus, change agents initially may advise managers to monitor a few critical structural and cultural domains at a time and to correlate coupling dimensions within these domains with organizational performance.
Resource dependence (Pfeffer & Salancik, 1978), technology-structure fit (Miller et al., 1991), risk mitigation in virtual organizations (Grabowski & Roberts, 1998), and strategic flexibility (Sanchez, 1997) highlight some of the issues that may be addressed more effectively by fine-tuning intraorganizational and interorganizational coupling.

Next, the advent of complex, nonlinear technologies (Perrow, 1984) such as nuclear power plants requires careful initial assessment of coupling prior to design and construction. The reason is the catastrophic potential of these technologies. In case of emergencies, certain areas of the nuclear plant must be able to respond very fast and must be tightly coupled. Simultaneously, loose coupling among key plant modules and hierarchical layers may prevent a domino effect. If looseness and tightness are to be built into the plant and its organization, practitioners can track coupling accurately and dynamically by using the approach and tools presented here.

Finally, organizations evolve. If managers are able to pinpoint which values bond employees more tightly or loosely at different stages of the organizational life cycle, or which structural coupling mechanism is stifling employee creativity, they can act to nurture healthy values or to remove structural shackles, thereby increasing the adaptability and overall effectiveness of their organizations.

REFERENCES


Toward an Understanding of Cognitive Consensus in a Group Decision-Making Context

Susan Mohammed
The Pennsylvania State University

This article consolidates and integrates what has been learned about group-level interpretation into a common theoretical language and conceptual foundation on which future research can be based. The term cognitive consensus refers to similarity among group members regarding how key issues are defined and conceptualized. In addition to addressing neglected definitional issues, this article embeds cognitive consensus in an input-process-outcome framework, and propositions are offered concerning the variables that both impact and result from its development. It is argued that the notion of cognitive consensus provides a valuable means for understanding how decision makers collectively make sense of ill-structured issues in a group setting and is conceptually appealing because it integrates group, cognitive, negotiation, and decision-making research.

Many groups, such as governing boards, cross-functional teams, and task forces, involve the participation of decision makers from diverse functional backgrounds, multiple departments, and organizational levels. Therefore, individuals often enter a group setting with different perspectives, viewpoints, and interpretations of the issues involved, which interferes with the ability of the group to view issues in similar ways. Through interaction, members are confronted with the conflicting views of their colleagues and must seek to reconcile dissimilar assumptions underlying the issues. Therefore, group members negotiate to reach consensus on how key issues should be interpreted (e.g., Bettenhausen, 1991; Eden, Jones, Sims, & Smithin, 1981). Cognitive...
consensus refers to similarity among group members regarding how key issues are defined and conceptualized.

Researchers from both psychology and management consider the notion of group-level interpretive processes viable, and empirical evidence has begun to emerge supporting the existence of this type of group cognition (e.g., Fiol, 1994; Tindale, Sheffley, & Scott, 1993; Walsh, 1995; Walsh, Henderson, & Deighton, 1988). However, references to cognitive consensus are scattered throughout various fields of research without a common terminology or detailed conceptual development. The purpose of this article is to consolidate and integrate what has been learned about group-level framing into a common theoretical language and conceptual foundation upon which future research can be based. In addition, this article embeds cognitive consensus in an input-process-outcome framework, and propositions are offered concerning the variables that both impact and result from its development. How should the notion of cognitive consensus be conceptualized and characterized? What are the factors that facilitate and/or hinder the process by which decision-making groups develop shared interpretations and definitions of the issues? What are the consequences of arriving at a greater group representation of the underlying issues in terms of decision processes and outcomes? These are the fundamental questions of concern in this article.

INDIVIDUAL-LEVEL ISSUE PROCESSING AND FRAMES OF REFERENCE

Issues are developments or events that potentially can affect an organization, and decision makers have been described as “issue jugglers” (Dutton, Walton, & Abrahamson, 1989, p. 380) who must deal with multiple issues simultaneously. Because the issues confronting managers typically are characterized as unstructured, ambiguous, complex, and dynamic (e.g., Mintzberg, Raisinghani, & Theoret, 1976), decision makers must engage in the process of sensemaking (e.g., Weick, 1979) or interpretation (e.g., Daft & Weick, 1984) in order to endow issues with meaning. According to Jackson (1992), the term issue processing encompasses all activities that decision makers engage in with regard to issues, including problem formulation (Lyles & Mitroff, 1980), diagnosis (Dutton, Fahey, & Narayanan, 1983), interpretation (Daft & Weick, 1984), information search (Nutt, 1984), and solution selection (Mintzberg et al., 1976).

In organizational research, frames of reference have been employed to refer to the manner by which individuals interpret or assign meaning to issues (e.g., Fiol, 1994; Isabella, 1990). Frames of reference facilitate cognitive economy, allow for the interpretation of ambiguous situations, and enable the prediction of future events (Gioia & Sims, 1986). Table 1 incorporates many of the ways that individual-level frames have been conceptualized and operationalized in the research. Under this expanded conceptualization, frames can be regarded as assumptions, categories, content domains, dimensions, and/or causal schemas/maps. Although decision makers may not necessarily proceed down the list of framing perspectives in the order presented, there is a
hierarchy implied from assumptions to causal maps in terms of specificity and closeness to the decision. Whereas assumptions are the most vague and furthest removed from the decision, causal maps are the most specific and closest to the actual decision. In addition, assumptions and categories provide the foundation for the other, more complex structures (e.g., Schneider & Angelmar, 1993; Schneider & Shrivastava, 1988).

Issue processing has been considered primarily at the individual-level of analysis (e.g., Dutton & Jackson, 1987; Thomas, Clark, & Gioia, 1993). In addition, organizations themselves have been viewed as interpretation systems (e.g., Daft & Weick, 1984; Lyles & Schwenk, 1992). Scattered throughout management and psychology research, several authors have alluded to the notion of group-level framing (e.g., Fiol, 1994; Tindale et al., 1993; Walsh et al., 1988), but the process by which individual interpretations translate into collective interpretations has not received systematic attention. Therefore, the purpose of the current research is to address the topic of issue framing, but within a group context. As most strategic decisions are rarely diagnosed by a single individual (e.g., Dutton et al., 1983), and researchers increasingly are proposing that the aggregation of individuals’ schema influences group decision making (e.g., Resnick, 1991), expanding consideration of issue processing to the group-level is appropriate and timely.

Although most of the decision-making research emphasizes how group members negotiate to reach consensus on decisions, much less is known about how groups negotiate to reach consensus on the interpretation of issues (Bettenhausen, 1991). According to Eden et al. (1981),

When considering the working of teams in organizations, it seems important and indeed commonsensical that such working involves the interaction and negotiation of shared and idiosyncratic understandings. A team is continually involved in some process of negotiating reality amongst its members. (p. 39)

Similarly, Walsh and Fahey (1986) state that strategic groups experience conflict over “the negotiation of their fundamental decision premises or beliefs” and that their resolution may be the “glue that holds an organization together” (p. 327). Therefore, because individuals often enter the group setting with different viewpoints, an integral part of the collective effort is dedicated to resolving differences in how members interpret issues. Cognitive consensus will be the term used to describe similarity among group members regarding how issues are defined and conceptualized. In addition, a group will be defined as an intact social system that produces some outcome (e.g., a decision) for which members have collective responsibility (Hackman, 1990).

THE NATURE OF COGNITIVE CONSENSUS

Defining the Construct

Cognitive consensus describes collective representations of issues; it differs from individual-level interpretations because it is socially constructed and relies on agree-
Cognitive consensus is the lens through which a group views matters of concern and is manifested in verbal descriptions of strategic issues. What is shared are the assumptions, categories, content domains, dimensions, and/or causal maps that aid group members in assigning meaning to the issues (see Table 1). Group members who have greater cognitive consensus are likely to attend to, interpret, and communicate about issues more similarly than are those with less cognitive consensus.

Cognitive consensus is distinguished conceptually from both decision preferences and the actual decisions arrived at in a group. First, cognitive consensus is broader in focus and more generalized than are preferences, which are specifically oriented toward the decision that must be reached. Whereas preferences reveal what members want out of the decision process, frames help explain the reasons underlying the preferences. Research confirms the distinction between those concepts in that preference changes can occur without accompanying changes in frame and vice versa (Tindale et al., 1993).

Second, cognitive consensus is differentiated from the clear-cut specifications and well-defined commitments of decisions. Rather than impose concrete courses of action on decision makers, cognitive consensus leaves room for operational freedom because it is less defined, rarely written down, and has a less objective basis than do solutions (Dutton & Ashford, 1993). Members may agree on how issues of importance to the group should be interpreted but fail to agree on specific decision points. In contrast, groups may arrive at a decision without reaching a commonality in how issues are framed (e.g., Donnellon, Gray, & Bougon, 1986). For example, Vertzberger (1990) contrasts operational consensus (group members agree upon decisions but do not share underlying beliefs) with perceptual consensus (group members experience a commonality of representations).

**The Cognitive Consensus Continuum**

Cognitive consensus can be conceptualized as a continuum of sharing. At one end of the continuum, many incongruent interpretations coexist and frames are entirely idiosyncratic. In the middle of the continuum, frames are widely held. At the other end of the continuum, there is perfect convergence and every group member has an identical frame of reference. In general, the extremes of this continuum are considered dysfunctional.

Clearly, some minimum level of sharing must exist before a group can operate as a unified structure. With completely divergent cognitive models, there would be no assurance that group members are working toward the same purposes, and interactions would involve a high degree of miscommunication and disorganization. However, it also is generally conceded that not every individual in the group needs to have an identical interpretation before shared cognition can emerge (e.g., Gioia & Sims, 1986). Because one of the benefits of a group context is that multiple perspectives can be harnessed, overlap in team member cognition to the point of groupthink becomes a liability. Therefore, cognitive consensus involves both unity and diversity in equilibrium. According to Fiol (1994), both a “divergence and convergence of meanings” (p. 404) must be achieved. In other words, the development of different and conflicting views
must be encouraged, while striving for a level of consensus that is broad enough to encompass the differences (Fiol, 1994). Furthermore, within a single group, there may be coalitions of shared beliefs, with all individuals sharing some beliefs, but only a subset of members sharing other beliefs.

Referring to the expanded conceptualization of frames discussed earlier in Table 1, group members may agree on certain framing perspectives (e.g., assumptions, categories, content domains, dimensions, and/or causal maps) but disagree on others. For example, although individuals in the group may categorize or label an issue in the same way (e.g., This is an opportunity), there may not be agreement on causal relationships existing between the relevant elements (e.g., Product X will lead to increased sales; Weick & Bougon, 1986). As a further illustration of consensus and dissensus existing simultaneously, Fiol (1994) showed that group members eventually achieved consensus in their support for a new venture, their certainty regarding the project, and the scope of their arguments, but continued to maintain differing views of issue controllability. Thus, she concluded that convergence around a broad frame of interpretations provided the common meaning needed to move toward action, regardless of differing views on issue content.

Because they serve as the foundation for the other cognitive structures listed in Table 1 (Huff, 1982; Shrivastava & Mitroff, 1983, 1984), assumptions are of special importance to the notion of cognitive consensus. Specifically, it is argued that groups must, at a minimum, share a common conception of the assumptions underlying the

### TABLE 1

**Expanded Conceptualization of Frames**

<table>
<thead>
<tr>
<th>Frame</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumptions</td>
<td>Foundation of a person’s concept of the world; set of “givens” involved in the perception of a situation</td>
</tr>
<tr>
<td>Categories</td>
<td>Analytical labels used to describe issues (e.g., threats, opportunities, problems, crises)</td>
</tr>
<tr>
<td>Content domains</td>
<td>Substantive labels in interpretation (e.g., political, economic, social, strategic, and technical)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Specific elements of strategic issues (e.g., urgency, feasibility, controllability, and certainty)</td>
</tr>
<tr>
<td>Causal schemas/maps</td>
<td>Graphic representations of the causal links between concepts; include both the content and structure of individuals’ belief systems</td>
</tr>
</tbody>
</table>
issues of importance in order to qualify as having cognitive consensus. Assumptions are the natural set of “givens” involved in the perception of a situation (Mitroff & Emshoff, 1979, p. 10) and “represent a system of shared meaning that governs collective perceptions, thoughts, feelings, and actions” (Schneider & Shrivastava, 1988, p. 494). Future-oriented, present-oriented, theoretical, methodological, interpersonal, moral, and evaluative have been identified by Mitroff and Emshoff (1979) as categories of assumptions that underlie decision preferences. The structure of assumptions is determined by the number of assumptions present, the degree to which they are shared, the intensity by which they are held, and the degree to which they are articulated (Schneider & Shrivastava, 1988). Unfortunately, despite their significance, assumptions often are ignored in research (Shrivastava & Mitroff, 1983, 1984).

The optimal level of cognitive consensus and dissensus in framing perspectives that will contribute to effective group processes and outcomes will depend upon a number of factors, including the specific environment in which a group operates, the level of interdependence among members, the nature of the task, and where the group is in the decision-making process. For example, in very complex environments, having a range of perspectives represented may be more beneficial than consensus (Schneider & Angelmar, 1993). Likewise, early in the decision-making process, when issues are uncertain, it may be advisable to maximize the number of viewpoints represented to aid in defining the issues comprehensively (Walsh et al., 1988). However, a high degree of dissensus later in the process may result in difficulty with decision implementation. To illustrate, Kilduff, Angelmar, and Mehra (2000) found that successful teams started out with diversity among members regarding attributions of organizational success and failure but developed more consensus over time. Therefore, cognitive diversity at the beginning of decision making, integrated with cognitive consensus by the end of the task, is one way for teams to foster both equivocality and mutual understanding.

Degree of Acceptance of Cognitive Consensus

Group process research differentiates between two main types of influence. Informational influence or internalization results in the alteration of an individual’s private beliefs, whereas normative influence or compliance results in changes in behavior patterns without accompanying changes in attitudes (e.g., Kaplan, 1987). Because it involves true changes in internal beliefs, informational influence represents a deeper level of acceptance than does normative influence.

Cognitive consensus implies that there is some degree of private acceptance or internalization of the group’s viewpoints, and its development involves individuals incorporating the group’s representations into their own constructions of reality. Although group members may exhibit public compliance with a group decision without private acceptance, cognitive consensus involves internalized agreement of interpretations and meanings. However, variations in the level of internalization may exist among group members.
Summary

In sum, cognitive consensus is an emergent characteristic of the group, encompassing collective representations of issues. What is shared is a mixture of the assumptions, categories, content domains, dimensions, and/or causal maps that allow group members to interpret ill-structured issues. Because idiosyncratic frames hinder the ability of the group to operate as a unified structure, and identical frames destroy the diversity of perspectives that contribute to creative problem solving, cognitive consensus covers the space between these two endpoints and encompasses both consensus and diversity. Agreement on underlying assumptions is especially important to cognitive consensus as it provides the foundation for more complex cognitive structures. In addition, cognitive consensus implies some degree of private acceptance of the group’s interpretations rather than mere public compliance. Thus, cognitive consensus may differ structurally in terms of its complexity, the degree of sharing, and the level of internalization.

COGNITIVE CONSENSUS IN AN INPUT-PROCESS-OUTCOME FRAMEWORK

Up to this point, the focus has been on the essential nature of cognitive consensus. This section emphasizes the construct’s antecedents and consequences, as well as articulating the processes through which cognitive consensus emerges. This discussion is organized according to the input-process-outcome (I-P-O) framework that dominates current team and group research (Cohen & Bailey, 1997). Inputs are the conditions that exist prior to group activity. Processes describe how inputs are transferred into outputs via group members’ interactions with one another. Outcomes are the results of group activity that are valued by the team or the organization in which the team resides. In reality, inputs, processes, and outcomes reciprocally influence one another in an iterative and cyclical manner. However, for purposes of organization and clarity, the three categories of variables will be discussed in linear sequence.

Inputs of Cognitive Consensus

Obviously, there are a plethora of variables that potentially could influence the development of cognitive consensus. However, in the interest of time and space, only a few variables that are thought to have significant explanatory power are reviewed. Although it is recognized that intergroup and organizational factors may affect the extent to which cognitive consensus emerges, the focus of this discussion is on intragroup dynamics (see Wells, 1990 for discussion of the group-as-a-whole approach). Adopting the cross-level framework presented by Thomas, Shankster, and Mathieu (1994), political, individual-level, and group-level inputs to cognitive consensus are examined.

Political variables. According to Walsh et al. (1988), any attempt to understand group-level information processing must incorporate political variables. Nevertheless, these have been ignored in much of the group research (see Aldag & Fuller, 1993...
and Walsh & Fahey, 1986 for exceptions). The existence of multiple constituencies in organizational decision-making groups can evoke various forms of political behavior. For example, divergent sets of interests and backgrounds are brought to the group setting when group members represent different constituencies to whom they are accountable, resulting in multiple interpretations of the issues of interest. Indeed, disagreements over the meaning of issues can sow the seeds for political decision processes early in a group’s development.

The existence of constituencies also highlights the mixed-motive context in which group members operate. Rather than simplistically assuming that group members have no interests other than arriving at a group decision, the mixed-motive perspective recognizes that group members possess motives both to compete and to cooperate with one another (Mannix, Thompson, & Bazerman, 1989; Thompson, Mannix, & Bazerman, 1988). For example, members of task forces, city councils, and governing boards all have their own interests as well as a collective goal that all group members are expected to serve. Based on the reasoning presented above, the following proposition is offered:

**Proposition 1:** Achieving greater cognitive consensus will require more effort and time when groups are composed of members who represent different constituencies, have conflicting individual frames, and/or motives to compete as well as cooperate.

As discussed previously, too little or too much convergence in how key issues are interpreted can be a liability to group processes and outcomes. Nevertheless, because of the need to consider under-researched intragroup political dynamics, this article primarily addresses the issue of too much fragmentation (as opposed to too much cohesion) in cognitive structures.

**Individual difference variables.** Related to the political considerations discussed above, one individual-level variable that would influence the development of cognitive consensus is how committed group members are to their constituency’s viewpoints. The main effect of commitment is the strengthening of one’s attitudinal position, which then increases resistance to persuasion or change (e.g., Halverson & Pallak, 1978). Innami (1994) made a distinction between reasoning orientation, in which members exchange facts and the reasons supporting their positions, and positional orientation, in which members adhere to their positions and engage in defensive argumentation. Consistent with a positional orientation, individuals who enter a decision-making group highly committed to their constituency’s goals will be motivated to protect constituency interests, even at the expense of the group’s goals. In addition, individuals with high constituency commitment may be less likely to accommodate the viewpoints of other group members or to welcome perspectives very different from their own. These dynamics would effectively hinder the development of cognitive consensus.

**Proposition 2:** Groups composed of individuals with a high commitment to their constituency position will achieve less cognitive consensus than will groups composed of individuals with a low commitment to their constituency position.
Group structural variables. Three group-level variables that may significantly impact the development of cognitive consensus are size, decision rule, and leadership. As groups get larger, information-processing demands multiply significantly and the pattern of preferences becomes more complex, thus decreasing the probability of successful coordination (Mannix et al., 1989). For example, in a four-member group, there are four sets of individual cognitions, six possible dyadic interactions, multiple potential three-person interactions, and a four-person interaction. In addition, members of large groups have fewer opportunities to participate in discussions than do members of small groups (Hare, 1952). Furthermore, because there are more sources of input, group size enhances the potential for coalition formation, which often results in agreements not in the best interest of the group as a whole (Mannix & White, 1992). Together, these factors suggest that, all other things being equal, the development of cognitive consensus will be more difficult in larger groups.

Proposition 3: Achieving greater cognitive consensus will require more effort and time for larger groups than for smaller groups.

In addition to size, decision rule is another group structural variable that can affect the emergence of cognitive consensus. Although there are many types of decision rules that a group can employ, majority and unanimity are the most common methods of social choice (Miller, 1989). Group decisions often are more difficult to reach and require more discussion under unanimity rule than under majority rule (e.g., Miller, 1985, 1989). In contrast, majority rule is more efficient, less time consuming, and prevents impasses more than does unanimity (Kerr et al., 1976). However, majority rule may not be the preferred decision rule in mixed-motive groups because it cannot always resolve diverse preferences in a way that contributes to effective group functioning (Castore & Murnighan, 1978).

Because majority rule moves groups to a decision point relatively quickly, group members may not perceive a need to discuss underlying assumptions and perceptions. However, with unanimous-decision schemes, groups often run into difficulty in deciding upon a course of action, which may force members to go beyond focusing on preferences and to discuss the reasons underlying viewpoints. Unanimity drives groups toward more systematic processing of information because attention must be paid to all members’ perspectives. In short, unanimity encourages the sharing of minority points of view and the questioning of assumptions to a greater extent than does majority rule. Therefore, the following was proposed:

Proposition 4: Groups with a unanimity decision rule will achieve more cognitive consensus than will groups with a majority decision rule.

The role of leadership also is important to the development of cognitive consensus. Given the previous discussion of input variables (e.g., conflicting individual frames, mixed motive context, strong commitment to constituency positions, large group size), it is unlikely that a high degree of cognitive consensus would develop without one or more persons in well-defined leadership roles. However, the leadership style operating
in the group will determine the quality and extent of cognitive consensus. Specifically, under dominant directive leaders, groups may not feel ownership over the process or develop the social interaction mechanisms for developing cognitive consensus. Furthermore, autocratic leadership may tend to engender normative influence as opposed to true changes in internal beliefs. In contrast, a participative leadership style may be more likely to create an atmosphere conducive to a free exchange of ideas and open communication (Walsh & Fahey, 1986). This context would better invoke internalized agreement of interpretations and meanings.

Proposition 5: A participative, decentralized leadership style will foster greater cognitive consensus than will an autocratic, centralized leadership style.

The Process by Which Cognitive Consensus Develops

According to the I-P-O framework, political variables, individual difference variables, and group structural variables all converge to influence the process by which group members interact with one another. Therefore, social interaction processes such as participation, communication, negotiation, and persuasion assume a critical level of importance in the development of cognitive consensus.

Because of the action orientation of many organizational groups, members initially may attempt to deal directly at the decision level and begin to discuss preferences or what individuals want out of the decision process. If the group is readily able to agree upon a course of action, members will perceive little need to discuss cognitive consensus issues. However, if the group runs into difficulty in deciding what to do, they will be more likely to move from a discussion of preferences to a discussion of the reasons underlying the preferences. In other words, unless efforts to reach a decision have been unsuccessful, group members may not discern the need to develop cognitive consensus.

Proposition 6: Explicit discussion concerning cognitive consensus will be more likely to occur when initial efforts to arrive at a decision have failed.

Because cognitive consensus implies some degree of private acceptance of the groups’ interpretations rather than mere public compliance, one of the most important tasks facing the group is to reconcile different individual frames through communication. Group discussion serves a number of purposes, including revealing problem-relevant information, affecting the cognitive process of individual group members, and allowing for the combination of member perceptions and opinions (Sniezek & Henry, 1990).

One of the first steps in the development of cognitive consensus is the simple recognition that differences exist among group members, not just with regard to decision preferences but also with regard to assumptions underlying the issues. As these differences are acknowledged, members may inquire into the reasons underlying the diversity in viewpoints. Through listening to other members clarify ideas and provide ratio-
nales for their interpretations, members may proceed from understanding the different perspectives of others to accepting the legitimacy of alternate points of view. As the group continues to communicate, individual frames may be broadened by the contributions of other group members, and changes in individual perspectives may occur in order to incorporate others’ interpretations of the issues. In certain situations, group members even may experience a complete reversal in their frame of reference by adopting the opposite perspective from what they started with. Over the course of time, therefore, cognitive frames may become more similar, and collective interpretations of key events move from unformed and tentative to well-constructed, well-processed viewpoints (Isabella, 1990).

Proposition 7: Groups whose members inquire concerning the reasons underlying others’ decision preferences, accept others’ viewpoints as legitimate, and incorporate others’ perspectives into their own interpretation of the issues will develop greater cognitive consensus than will groups whose members do not engage in these activities.

In addition to communication, another form of social interaction occurring in the group is persuasion. Given the political nature of many decision-making groups in organizations and the existence of multiple constituencies, group members will attempt to sell their own conceptualization of issues to the group (Larson & Christensen, 1993). According to Dutton and Ashford (1993), issue selling is the process by which individuals attempt to influence the identification phase of decision making and affect others’ understanding of the issues.

Researchers commonly assume that group member interaction eventually will result in the development of similar interpretations of key events (e.g., Gray, Bougon, & Donnellon, 1985). Consistent with this viewpoint, Ward and Reingen (1990) found that social interaction among sorority members positively influenced the development of group problem representations. Similarly, Fiol (1994) demonstrated that divergent viewpoints among organizational departments concerning new products converged over time. However, individual frames may be so divergent and intensely held that interaction is not sufficient to overcome these differences. For example, Tindale et al. (1993) found no evidence that group discussion leads to a common frame of reference among group members in a laboratory study. Moreover, Vertzberger (1990) argued that in cases in which group membership is not voluntary, social interaction most likely will not result in individuals abandoning their own frames for commonly shared group perspectives. Instead, interaction in such groups actually may drive members further apart. Therefore, extensive group communication may not always result in the convergence of idiosyncratic interpretations.

Outcomes of Cognitive Consensus

As discussed earlier, decisions can be made and collective action taken despite divergent representations and the absence of cognitive consensus (e.g., Donnellon et al., 1986; Tindale et al., 1993). In fact, cognitive consensus may not even emerge until after a decision is reached because groups may act first and then engage in postaction sensemaking (Weick, 1979). However, although cognitive consensus may
not greatly influence whether a decision is reached, it may be necessary for the intermediate or long-term productivity of the group. Divergent interpretations underlying issues of interest may come back to haunt the group at a later point in time, thus reflecting a more basic and debilitating disagreement than differences on decision points. Specifically, it is argued that the degree of cognitive consensus will affect the ease with which decisions are implemented as well as how similarly group members respond to new issues arising in the future.

Implementation. Despite a paucity of research, the implementation of a decision may be even more important than the decision itself in ongoing organizations (Pfeffer, 1981). In situations in which decisions are made without accompanying shared interpretations, those differences lie beneath the group surface, and problems may arise when the course of action resulting from the decision is pursued (Walsh & Fahey, 1986). According to Sproull and Hofmeister (1986), “when groups not only differ among themselves in thinking about an innovation but are also unaware of how they differ, implementation is problematic” (p. 58). For example, members who merely complied with the decisions may begin to challenge them or distance themselves from the group in the implementation phase (Vertzberger, 1990). On the other hand, in groups that develop more cognitive consensus, a greater sense of ownership and commitment emerges, which may result in implementation occurring more quickly and with fewer difficulties.

Proposition 8: Groups with more cognitive consensus will experience fewer problems with implementing the decision reached than will groups with less cognitive consensus.

New issues. Few decision-making groups in the real world meet to make a single, isolated decision (Mintzberg & Waters, 1985). Rather, group members are likely to interact repeatedly over the course of time and deal with a series of related decisions. The value in achieving cognitive consensus may extend beyond decisions made at a single point, and groups that have developed common assumptions underlying issues may have an easier time deciding on related matters that arise in the future. In groups with little cognitive consensus, by contrast, it is likely that differences in assumptions will surface again in discussions of related issues.

Proposition 9: Compared to those with less cognitive consensus, group members with more cognitive consensus will respond more similarly to new issues that are related to matters previously discussed.

DISCUSSION

This article contributes to the new and growing body of research relating to shared cognition by expanding consideration of issue framing to the group level of analysis. Because most issues are rarely defined by a single individual (e.g., Dutton et al., 1983), and researchers are giving increased attention to group-level cognition (e.g., Klimoski & Mohammed, 1994; Levine, Resnick, & Higgins, 1993; Mohammed & Dumville, 2001), expanding consideration of issue processing to group decision making is
appropriate and timely. As references to group-level issue interpretation are scattered throughout the research from various fields without a common terminology or detailed conceptual development, this article develops a theoretical foundation upon which future research can build. The concept of cognitive consensus provides a valuable means for understanding how decision makers collectively make sense of ill-structured issues in a group setting and is conceptually appealing because it integrates group, cognitive, negotiation, and decision-making research.

**Contributions of Cognitive Consensus to Research**

The notion of cognitive consensus is important, in part, because of the contributions it makes to issue processing, group decision making, and group composition research. For example, whereas interpretive processes have been considered primarily at the individual (e.g., Dutton & Jackson, 1987; Thomas et al., 1993) and organizational (e.g., Lyles & Mitroff, 1980; Lyles & Schwenk, 1992) levels of analysis, this article addresses framing as a group-level phenomenon. Interest in issue processing peaked during the 1980s and early 1990s in management science (e.g., Daft & Weick, 1984; Dutton & Jackson, 1987; Jackson & Dutton, 1988; Thomas et al., 1993; Thomas & McDaniel, 1990), but recently there has been a marked decline in the number of articles discussing the interpretation of strategic issues by decision makers. Although existing research has demonstrated the impact of issue processing on various organizational outcomes (e.g., Dutton, Stumpf, & Wagner, 1990; Thomas et al., 1993), the process by which individual interpretations of issues translate into collective interpretations has not received systematic attention. Therefore, the current article resurrects the topic of issue framing, but within a group context.

In addition to issue processing, the concept of cognitive consensus also contributes to group decision-making research. The emphasis in decision making has been on how group members reach consensus on decisions (e.g., Mannix et al., 1989; Mintzberg et al., 1976), but the focus of this article is on the negotiation of interpretations of issues. Divergent assumptions underlying issues of interest may reflect a more basic and debilitating type of disagreement than do differences on decision points, which may come back to haunt the group at a later point. Nevertheless, inadequate attention has been given to this process. In addition, current work highlights the importance of considering political mechanisms in the emergence of shared cognitive structures, which has been another under-researched topic.

Cognitive consensus also contributes to group composition/diversity research. Scholars have identified many types of diversity that can exist in a team. Whereas management science has primarily considered the impact of demography on performance (e.g., Jackson, May, & Whitney, 1995; Milliken & Martins, 1996), recent work in psychology has focused on cognitive ability and personality as predictors of team outcomes (e.g., Barrick, Stewart, Neubert, & Mount, 1998; Neuman & Wright, 1999). However, conflicting frames of reference constitute an area of diversity that is not typically investigated in the context of work groups. In their model of the effects of diversity in organizational groups, Milliken and Martins (1996) postulate that paradigm
homogeneity mediates the relationship between demographic diversity and short- and long-term consequences. Although they did not elaborate, they characterize paradigm homogeneity as causal beliefs, assumptions, and schemas, and emphasize the need for research to directly examine diversity in underlying beliefs and values. Answering this call, the current discussion of cognitive consensus helps to expand upon the important role that differences in cognition play in group decision making.

The Measurement of Cognitive Consensus

Clearly, the conceptual ideas developed in this article need to be tested, and empirical work must directly evaluate the linkages presented in the I-P-O framework and ascertain the usefulness of the cognitive consensus construct. In order to conduct studies in this area, however, researchers must confront the tricky issues surrounding the measurement of cognition in groups (e.g., Schneider & Angelmar, 1993; Walsh, 1995). As summarized in Table 1, issue frames can be conceptualized and measured in many ways. Because each approach captures valid and useful information about how individuals conceptualize issues, it is advantageous to represent frames in multiple ways and at multiple points in time.

One approach to the measurement of cognitive consensus would be to ask group members to individually complete questionnaire measures that have been developed to assess assumptions, categories, dimensions, and/or content domains. Measures of variation such as the intrarater agreement index ($r_{ww}$) (James, Demaree, & Wolf, 1984), the coefficient of variation (Allison, 1978), or the standard deviation could be used to assess the extent of (dis)agreement within a group on these measures. Groups with more consensus would be more likely to answer items reflecting cognitive content in a similar manner. With regard to causal maps, measurement methodologies and protocols already exist (e.g., Ford & Hegarty, 1984; Weick & Bougon, 1986). Especially relevant to the study of group-level cognition are recent methods designed to compare causal maps (e.g., Markoczy & Goldberg, 1995). In sum, the measurement of cognitive consensus should capitalize on existing methods as well as seek to develop novel assessment devices.

Implications for Practice

As organizations continue to use groups composed of members from multiple departments and constituencies (e.g., cross-functional teams) in order to improve the cognitive quality and acceptability of decisions (e.g., Nahavandi & Aranda, 1994), the issue of reconciling dissimilar assumptions underlying the issues will become increasingly relevant. Conflicts caused by cognitive factors may result in prolonged disagreement, and without active consideration there is not likely to be any resolution. Therefore, an integral part of the group effort should be dedicated to resolving differences in how members conceptualize problems during the first stage of decision making.

As group members discuss cognitive consensus issues, they may choose to focus on one or more framing perspectives listed in Table 1. Skilled decision makers will be able to utilize various levels of this hierarchy to achieve desired outcomes. For exam-
People, in some situations, resolving differences in members’ causal maps may be the most feasible way to arrive at a group decision. On the other hand, in order to reach a unanimity decision, it may be necessary to uncover members’ assumptions underlying issues of concern. Mitroff and Emshoff (1979) argue that decision makers, by negotiating underlying assumptions, often are able to reach agreements that would not have been possible by dealing directly at the decision or strategy level. One technique to aid in this process is strategic assumption-making, which involves specifying assumptions, integrating sets of assumptions, and achieving a compromise between assumptions (Mitroff & Emshoff, 1979). Methods such as dialectical inquiry also have been shown to be effective in bringing assumptions to the surface in decision-making groups (e.g., Schweiger, Sandberg, & Ragan, 1986). In addition, Eden et al.’s (1981) composite cognitive mapping technique facilitates the psychological negotiation among group members so they can come to consensus on the definition of the problem and relationships among concepts.

How to manage the tension between constructing groups with divergent perspectives and operating so as to arrive at an optimal level of cognitive consensus is a difficult balance to achieve. Indeed, much of the difficulty stems from the moderating influences that need to be considered in a contingent fashion. In other words, the appropriateness of cognitive consensus and its impact on group outcomes will depend on several factors, including the environmental context, task characteristics, and where the group is in the decision-making process. Although there is still much to be learned, this article lays a conceptual foundation for the study of cognitive consensus upon which future work can be based.

REFERENCES


An Ethnographic Study of Culture in the Context of Organizational Change

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The author employed an ethnographic research approach, combined with a clinical element, to explore the nature and role of culture in the context of organizational change. The study took place at the U.K. operations of a global human resources consulting firm, People Associates. Using Schein’s levels of culture model, the author identified cultural assumptions and values and explored how these relate to behaviors, using the author’s relationship with the organization as a rich data source. This study contributes in two main ways: first, it shows how an organizational culture develops historically, is internally coherent, and has potent effects on behaviors that should be studied and understood by managers and clinicians undertaking organizational change programs. Second, it highlights and illustrates how researcher reflexivity and subject reactivity can be useful sources of data for understanding an organization.

Dealing with organizational culture is a key consideration in change programs and ignoring it is an important reason for which change programs fail (Johnson, 1987, 1990; Pascale, Millemann, & Gioja, 1997). Understanding culture in any particular context, however, is not an easy task. Against this background, I sought to gain a deeper understanding of the nature and role of organizational culture through an ethnographic study of the U.K. operations of a global human resources consulting firm, People Associates. The study took place in the context of a transformational change program.

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change program through which People Associates aimed to achieve cultural change (especially a shift away from individualism to teamwork), substantial growth in size, a more focused client-relationship management process, increased breadth and depth of consultants’ expertise, and integration of various distinct consulting methodologies.

Using Schein’s (1984, 1992) levels of culture model, I identified People Associates’ cultural assumptions and values and explored how these related to behaviors. Given the crucial role of the researcher in ethnographic research, I used my relationship with the organization as a rich data source to further understand its culture. This study contributes in two main ways: first, it shows how an organizational culture develops historically, is internally coherent, and has potent effects on behaviors that should be studied and understood by managers and clinicians undertaking organizational change programs. Second, it highlights and illustrates how researcher reflexivity and subject reactivity can be useful sources of rich data for understanding an organization.

Organizational Culture in the Management Literature

The surge of interest by management academics and practitioners in the 1980s in organizational culture and symbolism has been prompted by the publication of books and articles on the importance of culture for organizational effectiveness (Barney, 1986; Deal & Kennedy, 1982; Peters & Waterman, 1982); the academic critique of positivism (Silverman, 1970); the increased legitimacy of qualitative methodologies (Jick, 1979; Sanday, 1979; Sanders, 1982); and intensifying global competition, with culture seen as a key facilitator of the high economic achievement of countries such as Japan (Turner, 1986).

Organization theory from early on has highlighted the human aspects of organizing (Daft & Weick, 1984; Dandridge, Mitroff, & Joyce, 1980; Pondy & Mitroff, 1979). Culture has been studied as an organizational variable within a functionalist frame of reference, something an organization “has,” or as a root metaphor for conceptualizing organization, something an organization “is” (Smircich, 1983a). Organizations were seen as shared meanings (Smircich, 1983b) or as “distinctive social units possessed of a set of common understandings for organizing action . . . and languages and other symbolic vehicles for expressing common understandings” (Louis, 1983, p. 39). Cultural views of organization emphasize that individuals’ actions are based on their subjective definitions of the situation (Thomas & Thomas, 1970), that people “act out and real-ize their ideas” (Weick, 1977, p. 287), collectively creating their own realities.

Initial writings on organizational culture portrayed it as an integrating, cohesive mechanism and focused on its potential links with organizational effectiveness, an approach aligned with the structural-functionalist stream in anthropology (Meek, 1988). Studies indeed have shown that organizational culture does have potent effects on such issues as employee retention (Sheridan, 1992), job satisfaction, and organizational commitment (O’Reilly, Chatman, & Caldwell, 1991).

There are several challenges, however, to the proposition that organizational culture can necessarily provide sustainable competitive advantage. Although culture is a potent force, it cannot fully dominate thought and action because of the capacity of human agents to comment critically on their situation and to choose to abstain or act
otherwise than the dominant cultural norms would dictate (Golden, 1992). Thus, there is the potential for multiple and even competing subcultures existing in an organization (Lucas, 1987). Moreover, culture varies more across industries than within them, indicating that many cultural elements are not unique to particular organizations in the same industry (Chatman & Jehn, 1994; Gordon, 1991). Far from the managerialist view of culture as a route to competitive advantage, others argued that culture is a self-disciplining form of employee subjectivity, the last frontier of control of labor by capitalism (Ray, 1986; Willmott, 1993).

Organizational Culture and Planned Change

The idea of planned organizational change is integral to the field of organizational development (OD) (Beckhard & Harris, 1987; Burke, Church, & Wachlawski, 1993; Porras & Robertson, 1992) and has been since its inception (French, 1969). The concept of organizational culture is an important aspect of this planned change process (e.g., Burke, 1995, pp. 155-159) and a basic concept of the OD field in general. This is evident, for example, in OD frameworks that explicitly portray culture as a subsystem of the organization (Heracleous & Devoge, 1998; Kolb & Frohman, 1970) or implicitly portray culture in terms of organizational purposes and relationships (Weisbord, 1976). Several authors have argued that understanding organizational culture is essential for achieving successful organizational change; and where culture is ignored, change programs are likely to fail (Johnson, 1987, 1990; Pascale et al., 1997).

Schein’s Levels of Culture Model

Schein’s (1984, 1992) levels of culture model has been very influential in the study of culture as it is one of the few structured and insightful ways to understand this phenomenon (Hatch, 1993). Schein (1984, 1992) suggested that culture can be analyzed in terms of three interrelated levels: artifacts, espoused values, and basic underlying assumptions. Artifacts are “all the phenomena that one sees, hears, and feels when one encounters a new group with an unfamiliar culture” (Schein, 1992, p. 17). Artifacts are observable but hard to decipher because similar artifacts may mean different things in different cultures. Espoused values are a “sense of what ought to be as distinct from what is” (Schein, 1992, p. 19). These develop over time based on workable solutions to critical problems that a group faces, and if the solutions continue to work long enough, they gradually drop out of conscious awareness and become basic assumptions. Basic assumptions are “the implicit assumptions that actually guide behavior, that tell group members how to perceive, think about, and feel about things” (Schein, 1992, p. 22). These are taken for granted and mutually reinforced and thus normally are not confronted or debated. Challenging basic assumptions leads to high levels of anxiety and initiates defense mechanisms that enable the group to continue functioning in a stable manner. Basic assumptions, according to Schein, are the essence of culture because they represent taken-for-granted beliefs, perceptions, thoughts, and feelings that are the ultimate source of individuals’ values and actions.
Apart from his levels of culture model, Schein (1984, 1992) has discussed issues such as the cultural rules of interaction (1987a) and culture as an aspect of group growth and development in his writings on “process consultation” (1988). Schein’s writings on organization culture have been highly influential in the OD field. Cultural discussions in OD textbooks are largely based on Schein’s theories (e.g., Cummings & Worley, 1993; French & Bell, 1995). More recently, Schein has forcibly argued for increased attention to cultural aspects of organizations based on ethnographic field observations rather than on abstract survey measurements of culture (Schein, 1996).

METHOD

In early 1994, I set out to study the role of organizational culture in the context of organizational change. I collected the empirical data reported here between June 1994 and March 1996. I also conducted retrospective data gathering that focused on the organization’s history and critical incidents, going back to the organization’s founding in the United Kingdom in 1963. My research was characterized by the following philosophical commitments, methodological paradigms, research strategy, and methods (see Table 1).

Philosophical Commitments

The philosophical commitments guiding the research program centered on interpretivism, the conviction that accounts of social life must consider the actors’ frame of reference and be adequate at this level of first-order meaning. According to the sociologist Max Weber (1978), in the study of social systems, “we are in a position . . . to achieve something that must lie for ever beyond the reach of all forms of ‘natural science’ . . . what we can do is to ‘understand’ the behavior of the individuals involved” (p. 18). Reality, in this view, is not seen as a hard and objective entity to be broken down and measured through positivist methods but as an intersubjective and socially constructed reality to be explored and interpreted inductively (Berger & Luckmann, 1966). I thus aimed to observe and make sense of agents’ actions in their real-life context so as to gradually gain “access to the conceptual world in which our subjects live so that we can, in some extended sense of the term, converse with them” (Geertz, 1973, p. 24). This viewpoint presupposes knowledgeable agents whose actions are not structurally determined and who could always choose to act otherwise (Giddens, 1979).

Methodological Paradigms

I employed the methodological paradigm of ethnography with an action research or clinical element. My role approximated what Schein (1987a) calls “the ethnographer as clinician.” I partly acted as a clinician because I was allowed access to the organization on the assumption that my involvement would “add value” to the organization change program under way. Gradually, I was expected to take initiative and be self-suf-
icient in terms of gaining access to employees and building my own networks in the organization as sources of data. I was soon asked to provide not only data describing what was found but also recommendations for action based on the data.

Given the importance of researcher reflexivity in ethnographic research, I carefully observed my relationship with People Associates, and used my observations as data that could be used to further understand the organization. I will discuss this reflexive activity in more detail later on.

Research Strategy and Methods

The commitment to understanding the ‘natives’’ frames of meaning (Geertz, 1973) means that qualitative methodologies have to be employed. I employed the research strategy of a longitudinal case study (Eisenhardt, 1989). Within this strategy, I used the methods of in-depth interviewing, participant and nonparticipant observation, cultural audits through focus group sessions, informants, periodic descriptive surveys, and document analysis. I conducted a total of 104 interviews involving consultants, surveys and IT staff, support staff, and past leaders of People Associates. I triangulated the data within and across methods in order to increase the internal validity of the findings and to discover within- or between-method divergences or convergences that could lead to new lines of inquiry (Jick, 1979). After I discerned the main cultural values and beliefs of the organization, my findings were circulated to all employees, who widely judged them to be representative of their organization. This process is an important validating criterion for ethnographic research (Hammersley & Atkinson, 1995).

Data Analysis

My initial analytical task was to detect patterns and processes that could help to “make sense of what is going on in the scenes documented by the data” (Hammersley & Atkinson, 1995, pp. 209-210). I was conscious throughout the research program, in this regard, that “what we call our data are really our own constructions of other people’s constructions of what they and their compatriots are up to” (Geertz, 1973, p. 9). This, in effect, is what Giddens (1993) calls the “double hermeneutic” in social science and Van Maanen (1979) “first and second-order concepts” in ethnography. Within this process, I continually sought to differentiate between “presentational” and “opera-
tional” data (Van Maanen, 1979) and to reflect on what these data revealed about the agents involved and the research setting.

I did not take individual fragments of data as indicative of cultural features but interpreted them as part of a wider corpus of data. The data analysis was characterized by a hermeneutic, iterative process of going back and forth from critical reflection to the data, and from part to whole, searching for key themes and patterns, and questioning, redefining, or buttressing the key themes and patterns identified with further evidence (Kets de Vries & Miller, 1987; Thachenkery, 1992).

RESULTS

Central Values and Beliefs of People Associates

People Associates has developed a “thick” organizational culture during over three-and-a-half decades of operating in the United Kingdom. My interviews with past leaders and my document analysis indicated that People Associates’ early growth was characterized by conditions fostering the development of such cultures, including a long history and stable membership, absence of institutional alternatives, and frequent interaction among members (Wilkins & Ouchi, 1983).

Both employees and clients of People Associates viewed it as a human resource consulting firm, with the core business being job evaluation. Job evaluation has been the firm’s core business since its founding, and its early consulting projects were based almost exclusively on this methodology. The belief that job evaluation was People Associates’ core business was manifested in consultants’ daily communication using terms related to this methodology as part of a shared vocabulary that helps to constitute an identity for organizational members (Evered, 1983). Although the language of job evaluation still is prevalent in People Associates, the perception that this is the firm’s core business has been weakening. Financial analyses have shown that job evaluation sales as a percentage of total sales have been decreasing, while sales from other fields such as organizational change and human resources planning and development have been increasing. Senior management has made a conscious effort to develop consultants’ expertise in these other fields, through holding consultant training programs and client seminars, and encouraging consultants to inform clients about other consulting services offered by the firm.

Second, clients are considered as all important in People Associates, almost always taking priority over internal systems and commitments. When consultants are asked to explain their actions/inactions, their rationalizations (Giddens, 1979) mainly rest on the premise of acting in the best interest of the client. According to consultants in People Associates, “if a client says ‘jump,’ you jump!” Moreover, People Associates’ client orientation is reflected in its carrying out periodic client satisfaction surveys, in what clients say during these surveys regarding the firm’s commitment to them, in the substantial power base of individuals with large client portfolios and strong client relationships, and in People Associates’ flexible, loose structure allowing it to keep close to, and respond swiftly to, clients.
Third, People Associates has been characterized by strong individualism and high autonomy of its consultants since its inception. This is exemplified by the daily behaviors of its consultants as well as by the organizational mythology. Many consultants I talked to said that they were attracted to People Associates, as opposed to other major consulting firms, because of the lack of strict rules and regulations and the high autonomy they enjoyed, provided they met their targets. One consultant joked that, “if you meet your targets, you can do what you want, even be a double-glazing salesman if you like.” In addition, the organizational mythology is replete with figures of “lone rangers,” currently senior people who have exhibited highly individualistic behaviors in dealing with clients, and “guidechart jockeys,” who would “ride” in an organization with their job evaluation guidecharts to solve client problems.

Fourth, People Associates has been carrying out reorganizations on an annual basis. Over time, these changes have become institutionalized as part of its culture and are referred to as *autumn maneuvers* in the organization’s vocabulary. My interviews with senior management indicated that they saw these as fundamental changes (as opposed to incremental ones). The manager of the change steering group told me that the group would never have realized on their own that these changes were in fact incremental, focusing solely on structural change without challenging the organization’s established assumptions, values, and beliefs.

Fifth, clients often requested advice from consultants in areas in which those particular consultants may not have been experts. Because of consultants’ high pressures to meet their targets, and the fact that client relationships were a potent power base, consultants were reluctant to relinquish control of those clients to others. They thus ended up offering advice in various human resource areas. This situation led to an internal perception of “generalist expertise” in several fields as opposed to deep expertise in selected ones.

Last, due mainly to the high autonomy and individualism of consultants who often did not pay much attention to internal procedures, and to the fact that the *autumn maneuvers* did not lead to any fundamental, cultural changes in the organization, the perception developed over time that there are few “real” decisions taken by senior management. On several occasions during the research, I observed new internal procedures or rules being “implemented” but never followed. Examples include the requirement that consultants keep detailed written records of how they spent their time during client engagements or any other activity; and new record-keeping procedures for billing clients introduced by the finance department. Both of these were ignored by consultants, who said that they were too time-consuming and cumbersome, and both were subsequently dropped. As one consultant told me, “nobody will be hanged for violating procedures, but they will be hanged for getting it wrong.” In other words, at People Associates, it was more important to get it right with clients than to follow internal procedures.

The Consulting Subculture as the Dominant Cultural Force

The above values and beliefs represent the predominant, consulting subculture in People Associates. Although there are other subcultures in this organization (e.g., the
subcultures of the support staff and of the surveys department), it is the consultants’ subculture that dominates. Its importance is indicated by the high numbers of its members, its potent influence on organizational decisions and actions, and its strong internal homogeneity. In terms of membership numbers, over two thirds of People Associates’ (United Kingdom) employees are consultants, and most of the 20% of employees who work in the surveys/IT departments aspire to becoming consultants in the longer term, as ethnographic data have shown. In terms of influence on decisions and actions, leaders of the consulting subculture determine People Associates’ strategic direction and most of its internal organizational arrangements. Last, in terms of homogeneity of the dominant consulting subculture, my data on the recruitment process, observation of behaviors, and in-depth interviews indicated a highly homogeneous body of consultants. When interviewing new recruits and asking for surprising or puzzling features of People Associates (Schein, 1992), many marveled at how “everybody is so much like me.”

The Internal Coherence of the Organizational Culture

There are strong interconnections among the values and beliefs of People Associates. For example, the individualism and high autonomy of consultants is related historically to the nature of the core business (job evaluation), which did not require any teamwork among consultants. The institutionalized incremental changes, which have not led to fundamental organizational change and have not challenged the organization’s values and beliefs, in combination with consultants’ high autonomy and individualism, have led to a further belief that senior management at People Associates makes few “real” decisions. Values and beliefs also are highly interconnected with artifacts. With regard to individualism and high autonomy, there are stories and myths about “lone rangers,” the organizational structure accommodates and encourages individualism by being loosely coupled and chaotic, control systems and incentives focus on and are geared to individual evaluation and performance, communication is informal and largely based on one’s own interpersonal networks, and last, high achievers in terms of billing and sales have been individually praised consistently on such occasions as Christmas parties.

People Associates’ Governing Assumptions in Historical Perspective

I analyzed the qualitative data from various sources, guided by Schein’s (1984, 1992) writings on the nature of basic assumptions. This analysis indicated that five powerful governing assumptions operate in People Associates. These are portrayed in Table 2.

From a historical perspective, these governing assumptions derive from the vision and actions of the founder and early leaders of People Associates and from the way People Associates has approached internal (e.g., recruitment, incentives, and control systems) and external (e.g., market development) issues since its inception (Schein, 1983).
The organization’s relationship to its environment. The assumption regarding the proactive and developmental stance of the organization to its environment was embodied in the vision of the founder about the future of the organization. In 1943, he wrote, “The human element in industry has not received adequate or sufficiently skillful attention. . . . The most successful companies of the future will be the ones to take advantage of improved personnel techniques” (People Associates, 1993, p. 2). According to the current chairman and CEO of People Associates (Global), “the one common thread through our exhilarating roller-coaster ride between 1943 and today is that [our founder’s] original vision has always proved to have flawless clarity” (People Associates, 1993, p. 4). The vision was proactive and progressive for its time, as thoughts about the importance of the human side of work were not common in 1943, and indeed academic management thought was very much engaged with the mechanistic approach of “scientific management” (Taylor, 1947).

The proactive and developmental nature of People Associates’ actions toward its environment also can be seen in its early globalization processes and in its current annual organization change programs. With regard to globalization, “the real enduring impact of this foreign expansion is that once we started, we stayed at it—even if the short-term financials weren’t good.” This allowed People Associates to “stay ahead of the curve . . . to understand what was—and would be—happening to business in time to develop positions and expertise necessary to help our clients” (People Associates, 1993, pp. 4-5).

The organization, in addition, has not been complacent about its early monopolistic position in the job evaluation field. It has instead institutionalized annual incremental changes (termed autumn maneuvers in the organizational vocabulary), and since 1994, has been proactively pursuing a transformational change program. As senior consultants said, “nobody’s holding a gun to our head.” In a 1994 speech, at the start of the change process, the U.K. managing director explicitly recognized that the organization had been successful and that there was no crisis at hand; but also that unless People

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**TABLE 2**

**People Associates’ Governing Assumptions**

| Organization’s relationship to its environment | The organization should be proactive toward its environment and strive for continuous improvement |
| Nature of reality and truth | Reality and truth are derived from a combination of that which works (the pragmatic orientation) and that which is scientifically established |
| Nature of human nature | Individuals should be self-motivated and capable agents and therefore should act entrepreneurially and proactively |
| Nature of human activity | A “doing” orientation predominates rather than “being” or “being-in-becoming” orientations |
| Nature of time | Time is polychronic rather than monochronic or cyclical |
Associates proactively made significant changes, it would, in the near future, be at a competitive disadvantage.

**Nature of reality and truth.** The assumption regarding truth as a combination of that which works (a pragmatic orientation) and that which is established by scientific method is embodied in the founder’s pool of early employees deriving from his circle of friends in academia (science) and from retired businessmen (pragmatism). Two men who would later prove to be pivotal figures in the development of People Associates were hired in 1949. One had 25 years’ experience in management and manufacturing (pragmatism) and is credited with developing the firm’s proprietary job evaluation methodology. The other was a 28-year-old who had just earned a Ph.D. in industrial psychology and who subsequently developed several psychological assessment tools (science). Bringing together the two elements of pragmatism and science in a combination that provided sustained commercial success for the organization gave rise to a cultural precedent that gradually dropped out of conscious awareness and became a governing assumption. This respect to both practical knowledge and scientific findings has been manifested in my relationship with the organization, as discussed later.

**Nature of human nature.** The assumption that individuals are self-motivated, capable, and responsible agents was apparent in People Associates’ early recruitment policy in the United States. People Associates’ human resources strategy was to develop the geographical markets they entered using “the best available local talent.” The Canadian office was the first one in what subsequently became an intense drive for market development, leading to People Associates’ current international presence with 90 offices in 30 countries: “When we went to Canada, we asked who’s your best guy in personnel? And then we sought that person out and recruited him” (People Associates, 1993, p. 4). The current recruitment policy is a continuation of high standards set historically. Interviews with consultants and the personnel manager have revealed that the recruitment process lasts about 3 to 4 months and commonly consists of three interviews, three psychometric tests, assessment centers involving debate of real-life organizational problems, and, interestingly, a dinner during which the social skills of short-listed applicants are observed by partners. In response to my questions about what organizational features consultants found unexpected or surprising when they entered the firm, several said that the recruitment process was the most extensive they had ever gone through. However, once they had crossed the boundary into the organization, they were equally surprised by their high level of autonomy and the looseness of the organization.

**Nature of human activity.** A “doing” orientation predominates in People Associates, as opposed to “being” or “being-in-becoming” orientations. A “doing” orientation is one that assumes that “the proper thing for people to do is to take charge and actively control their environment” (Schein, 1992, p. 127). This orientation finds expression in the idea that “adding value” to clients and to the organization is of paramount importance, a concept that was implicit in the vision of the organization’s founder, as discussed earlier. This concern in turn derives from an industrywide focus.
on “adding value” (Chatman & Jehn, 1994; Gordon, 1991). This “doing” orientation led to the creation of what Harrison (1972) calls a “task” culture, in which organization structure and systems, as well as agents’ actions, are geared toward and subordinated to achieving the superordinate goal of “adding value.”

Nature of time. The dominant time orientation in People Associates is polychronic rather than monochronic or cyclical. Polychronic time is “a kind of medium defined more by what is accomplished than by a clock and within which several things can be done simultaneously” (Schein, 1992, pp. 107-108). This is apparent in the complete control consultants historically have had over their time/space movements, some not coming into the office for months at a time. This is quite acceptable because, as the managing director [U.K.], said during an informal conversation, if they are in the office, this means that they are not out with clients. Some senior people have characterized People Associates as “a club” in this sense. Consultants have complete control of what they do and when they do it and it is normal for them to be engaged in several client projects simultaneously. Secretarial support also operates within a polychronic time orientation as support staff have to carry out many tasks simultaneously, and they partly control such issues as their time of arrival to work, their lunch breaks, and their departure from work.

The surveys/IT part of the organization, on the other hand, operates with longer and more defined time horizons. Many surveys are annual, and the “bespoke” ones take a specific amount of time to be completed. Survey production is characterized by highly interdependent and sequential tasks, which is consistent with a monochronic time orientation. This dissonance of time orientations may be a primary reason for the poor interrelationship between these two subcultures. Surveys/IT people often complain that they are the poor relation of the consultancy, and consultants for their part complain about the low responsiveness of the surveys/IT function to urgent client and internal issues.

How Governing Assumptions Manifest in Practice

My own experience in gaining access and conducting research in People Associates. In early 1994, I approached People Associates and other management consulting firms in order to negotiate access, planning at that time to utilize a purely ethnographic approach to the research. The MD, Europe, replied that he would like to meet me. I arranged for an appointment during which I explained the focus of the research, and left with the understanding that the organization would contact me for further discussion. About 2 months later, the director of recruitment wrote to invite me to a further meeting, during which I again explained the focus of the research and gave him samples of my work. At one point, he effectively asked what I would offer in return for access. I replied that I could offer the findings from the fieldwork. He then said that People Associates was about to commence a program of organizational change which I could study, adding value to the process while I did so; to which I agreed.

From the outset, therefore, a clinical element was incorporated in the research program (Schein, 1987b). The change steering group, composed of senior executives,
requested my periodic feedback on management of the change process. Once the research program was under way, I also felt an ethical obligation to convey to the change steering group employees’ task-related concerns derived from the diagnosis stage (White & Wooten, 1983). Senior management was not aware of most of these issues, as became obvious from surprised reactions during my first feedback session to the steering group.

People Associates’ expectation of my “adding value” in return for access to the organization aptly illustrates the cultural rule of behavior as social exchange (Schein, 1987a). In evaluating my feedback, senior individuals in fact have often used the term “adding value” to the change process. Also, I was told by the manager of the steering group early on in my involvement that my presence alone would be of symbolic value (Dandridge, 1983; Johnson, 1990) because it would indicate that the current change was a fundamental one, as opposed to previous incremental changes that were not taken very seriously.

Moreover, as the research process progressed, the initial support afforded to me (assigning a secretary to help with arranging interviews and conveying any other information about the organization that I needed) was not offered for later phases. Instead, I was expected to develop my own networks and forge my own links with the organization’s employees, much as a new recruit is expected to be self-sufficient after an initial period of limited support and low targets. The above examples illustrate the behavioral manifestations of the governing assumption that individuals are self-motivated, capable, and responsible agents and therefore should be able to function individually without any support. They also illustrate the “doing” orientation, which finds expression in this context in the importance of “adding value.”

Assumptions about the nature of truth are reflected in the way my feedback and suggestions were received. Initially, I was surprised and puzzled by the seriousness with which my feedback and suggestions were handled. Summaries of my feedback reports were circulated to the whole organization, my suggestions were discussed at high level and many have led to action. My surprise lay in the fact that at that time, I did not have any consulting experience; People Associates made a point of recruiting consultants at least in their 30s with much industry experience; and senior directors with two or three decades of consulting experience solicited and considered extensively my suggestions for action. Upon critical reflection, this has made sense. The governing assumption that truth is a combination of pragmatism and scientific knowledge means that scientific knowledge is highly respected and taken seriously even if it derives from a source having little or no experience of what works in the specific context of the organization (pragmatism).

**Induction process and early period for new recruits.** The induction process for new consultants was very unstructured, and the onus was largely on individual consultants to prepare a self-development plan and to act on it. In the unusual event of direction from senior people, this was restricted to the first couple of months, after which the responsibility for self-development and network building rested completely with the individual. In interviews, many new recruits described the process as “hard” and
“painful.” Most experienced high anxiety levels because of the uncertainty over whether they were doing the right things. The following extracts from an interview with a newly recruited consultant give a representative description of the situation:

**Consultant:** I had a phone call from my team leader, X... he said it helps if you have a high tolerance for ambiguity, you know things aren’t gonna be structured, and... I didn’t even know whether I was gonna have a desk, so I was quite relieved to find that I was gonna have a desk.

**Interviewer:** Is it usual that the regional operations directors decide which training courses you go on, or do you normally have to choose yourself?

**Consultant:** Hmm. Like everything at People Associates, it’s not... made explicit, but I think what happens is that you’re put down, and you very rapidly discover that there are a whole lot of things, and if you have any sense... you find out that, hmmm... Y has got a list of training courses, and you go and look and you say, “Oh, that’s interesting, and that’s interesting, and that’s interesting,” and then you go back to your ROD and you say, “Hmmm, I see there’s all these training courses I’d quite like to go on, is that OK?”... and then you’re encouraged to make appointments with senior people, go and see them, and talk to them about what they’re doing, and basically do a bit of marketing in terms of saying, “Oh, this is what I’m doing, or this is what I have done, this is what I can do.”... I think for everybody, it’s difficult. ...I think I found the first three months, ahmm, OK, because I was going on a lot of training courses, I was learning a lot, hmmm, but, I think what I found very unnerving was the complete and utter responsibility to determine my future direction. It was like, there was no direction whatsoever, hmmm, and there was no management whatsoever. I had been used to having a line manager, and there wasn’t any.

Schein (1984, 1992) suggests that a researcher or clinician should further examine the features that surprise or puzzle them or new recruits in order to reveal basic assumptions that drive these features. Interview data showed that one feature that has surprised most new consulting recruits is this: whereas in other organizations there was work waiting for them as soon as they entered, in People Associates, they spent the first few weeks trying to find work. One new recruit said that for the first couple of months, she felt guilty receiving her paycheck because she had not done much work at all.

In People Associates, the onus is on the individual agent to find work in a Darwinian setting in which one either meets one’s targets (which are negligible for the first few months but then escalate rapidly) or one is soon in trouble. A consultant referred to the operation of an internal market as follows:

I think the other thing which is different from other companies is the sort of internal market... where you’re basically selling yourself to your colleagues to get involved in a project... Lots of freedom, but you’re sort of, you name your price... if I wanted to do something, if I’m desperately short of work, I could price myself at half the time and am actually encouraged to do so in order to just get the numbers up.

The internal market leads to a situation in which “in People Associates, it’s dangerous to say you’re not busy,” as another consultant pointed out during informal conversation. “If you do that, then the other people will start wondering what’s wrong with you.”

The above are organizational and behavioral manifestations of the governing assumption that individuals are self-motivated, capable, and responsible agents who
should forge their own links and internal networks and learn the ropes, without much help from others.

Perceptions of how one rises in People Associates. Perceptions of how one rises in People Associates also are indicative of the assumption that individuals are self-motivated and capable agents, as well as of the “doing” orientation that finds expression in the perceived importance of “adding value” commercially to the organization by achieving one’s individual targets.

The way one rises in People Associates, as perceived by consultants, primarily is to be a high biller (number of consulting days billed to clients) at associate consultant and consultant levels. At senior consultant level and above, one should in addition be a high seller of large consulting projects, provided they are not perceived as unfair or unsupportive in terms of the billing they allow to other consultants on projects that they had sold. After one reaches a certain level, moreover, one has to promote oneself through actions such as writing unsolicited papers to other senior people, preferably the decision makers, as well as going to various meetings to network. A widely held view in People Associates was:

**Interviewer:** How do you think one rises in People Associates?

**Consultant:** I’m sure you heard this many times, I think that no matter what anybody else says, the key things are around billing and selling. . . . I think for me to go from senior consultant to principal would be around sales success; I think perhaps associate consultant, or whatever, it might be around billing success, but I think it’s those things.

Consultants are evaluated individually on their billing and sales targets and have ultimate personal responsibility for reaching them. Thus, consultants have to develop their own internal networks so that they can be kept informed of new projects sold, who sold them, and how they can get on them. My interviews revealed that the pressure to hit the targets often leads to high levels of anxiety. One telling example occurred when a consultant who had been sick returned to work before fully recovering so that hitting his targets would not be jeopardized.

**DISCUSSION**

The Role of Culture in Organizational Change

This case illustrates how an organization’s cultural assumptions develop historically, underpin values and beliefs, and have subtle but nevertheless pervasive effects on organizational actors’ interpretations and actions, as well as on organizational arrangements.

In-depth knowledge of the organizational culture can assist clinicians in identifying appropriate change strategies that would fit with the organization’s unique cultural context, for example, in making a choice of a more collaborative or a more coercive style of change management (Dunphy & Stace, 1988, 1993). If, for example, the coer-
cive change management style is used in an organization in which a deep cultural assumption regarding human nature sees individuals as capable, self-motivated, and entrepreneurial, there would be a significant clash between the agents of change and the organizational actors, which would severely jeopardize the success of the change program.

This case study illustrates empirically why organizational cultures are so inertial and resistant to change. Behaviors, values, beliefs, and assumptions all are interconnected in a coherent whole that resists change attempts (Johnson, 1987; Pascale et al., 1997; Pettigrew, 1987). The internal coherence and self-legitimacy of cultural elements mean that efforts to change the cognitive aspects of culture directly are likely to fail. Focusing on behavioral change as a start to longer term cultural change may thus be a more viable option (Beer, Eisenstat, & Spector, 1990; Burke, 1995).

A vital test of successful organizational transformation is whether behavioral change occurs (Blumenthal & Haspeslagh, 1994) because such change is necessary for favorable organizational outcomes (Robertson, Roberts, & Porras, 1993). This study draws attention to the fact that behaviors, values, beliefs, and assumptions are intimately interrelated. However, governing assumptions can be supportive or in conflict with the new behaviors, values, and beliefs advocated by a transformational change program. Thus, it is important for clinicians to identify the organization’s governing assumptions and ensure that the new behaviors, values, and beliefs the organization pursues do not conflict with, and are supported by, these governing assumptions.

In People Associates, the executives used the cultural elements identified as benchmarks on which to articulate a new cultural and organizational direction. The cultural values aimed for in this case did not challenge the organization’s governing assumptions. This had facilitated the organization change process. Subsequent evaluations indicated that the original cultural situation started to “unfreeze” and move toward the desired direction (Lewin, 1952). Use of Schein’s levels of culture model in this case provided further clarity for the rather vague and potentially misleading idea that transformational change involves wholesale cultural change. A new strategic direction does not necessarily need to challenge the organization’s governing assumptions or even all of its prevailing cultural values, beliefs, and behaviors. The challenge is to identify which cultural elements need to be changed and which need to be preserved, given the organization’s strategic direction. If intended changes in values, beliefs, and behaviors build on existing governing assumptions, the change effort is much more likely to succeed.

Researcher Reflexivity: How Organizational Culture Influenced the Research Process

Researcher reflexivity, subject reactivity, and the role of text in constructing what it purports to report objectively are important considerations in ethnographic approaches in which the researchers are themselves central tools in the research process (Sanday, 1979). These realizations have led to challenges to “realist” ethnography
and to the emergence of “confessional” accounts detailing the pivotal role of the researcher in the process of enquiry (Van Maanen, 1988).

The cultural characteristics of the organization, in this case, influenced both the research approach (the need to incorporate a clinical element) as well as the conduct of the research (the increasing individual initiative and responsibility I was expected to display as well as the increasing expectations for me to “add value” to the change process). There were analogies in my experience as a recently accepted outsider in People Associates with the experience of new recruits. This analogy helped me gain an empathetic understanding of new recruits’ experience and in turn of People Associates’ organizational culture.

Pursuing this line of investigation can shed considerable light on how a clinician’s perceived role, relationship with the client organization, and, ultimately, effectiveness in making a difference to the organization’s functioning are influenced by these cultural assumptions in ways that most often remain unspoken and unacknowledged. It can be revealing, as illustrated here, if the organization’s stance and actions toward the clinician are not merely taken as objective or rational reactions to them. Rather, these actions should be seen as useful data sources and as reflections of the organization’s deep psyche that can be decoded within an inductive ethnographic paradigm.

The incorporation of a clinical element can enable the clinician to be taken “behind the scenes” by senior managers who seek advice but also could constrain data collection from lower levels of the organization whose members may perceive the clinician as an instrument of management, or “one of them” (Schein, 1987b). However, in this case, being perceived as a clinician in a clinicians’ land was an important facilitating factor in data collection from all levels of the organization. Positive effects included being afforded initial access, being allowed to walk about freely, even in areas housing confidential materials such as client reports, having access to anyone I wished to, being perceived by consultants as “one of us” and thus receiving more open and cooperative treatment, and last, being able to access senior management readily to elicit their thoughts and opinions. In general, being perceived as a “helpful” part of the group led to a high level of cooperation and motivation by the actors involved (Schein, 1992, pp. 170-171). Constraining aspects related mainly to the content of the periodic surveys I conducted, which had to be approved by senior management and to be seen as relevant to situational exigencies. This has limited the potential comparability of the results across the surveys but also has increased their applicability to current issues. Another constraining factor of my role as a clinician was the defensiveness of certain senior members, referred to as the “old guard,” in the organization. These were the “lone rangers” and “guidechart jockeys” of the organizational mythology, who provided sparse and filtered responses to my questions and shifted uncomfortably in their seats during our interviews. I interpreted this behavior as an indication that they perceived my presence as a threat to their cozy working life. My presence symbolized change, and they perceived that their working life was about to be disrupted because of the refocusing of the organization on more teamwork, a client management process that could reallocate some of the clients they “owned” to other consultants, and added responsibilities for mentoring newer consultants on their expertise development. This was one example of subject reactivity, discussed in more detail below.
Subject Reactivity: What I Learned From Senior Management’s Responses to My Recommendations

I treated subject reactivity as a useful data source rather as something to be avoided. For example, certain employees engaged in self-promotion during interviews, offering to undertake positions of responsibility within the change program and recounting their recent successes, knowing that I had the ear of senior management and made frequent recommendations to them. I, of course, did not convey any such information to senior management. I felt that management itself could choose on whom it wanted to place responsibility for the change program. Also, I felt that the respondents’ attempts at self-promotion were rather uncalled for in this context.

Another revealing example, which I discuss in some detail, concerns whether my suggestions to senior management were implemented or ignored. Recommendations based on knowledge of what generally helps change programs, and that did not challenge cultural values and assumptions, were implemented. For example, senior management readily adopted my recommendations relating to the timing, means, and content of communications. I suggested in the initial stages that face-to-face management-employee meetings were more appropriate than simply using written communications, as this was intended to be a transformational change. In addition, I indicated that such meetings should take place as soon as possible, as opposed to the original plan of holding them around 6 months after the change initiatives started. I commented that delaying these meetings would have led to the impression that decisions had already been taken by senior management and that these meetings were not really for consultation but for paying lip service to the need to show that management cares about employee concerns. In fact, in informal conversations, some employees expressed such concerns to me in spite of the fact that these meetings were indeed moved to earlier dates than originally planned. Third, I proposed that the content of change communications should be tailored to the various change- and task-related concerns widely expressed by employees during my confidential interviews with them. This would indicate to them that their concerns were being heard and taken seriously by senior management.

On the other hand, suggestions generally helpful to change programs but which in this case challenged cultural “sacred cows” of the organization were ignored. For example, early on in the research, several concerns of both consulting and support staff were identified. I suggested that both groups’ concerns should be addressed as part of the change program so that employees would feel more motivated to change in the desired directions. Interview, survey, and observation data collected in 1995 and 1996 consistently showed that consultants’ concerns were being addressed, but support staff concerns were not, despite the statements of senior management that everyone’s concerns mattered. I interpreted this nonaction with regard to support staff concerns as being yet another manifestation of the cultural importance of “adding value.” Support staff never met with clients, and their contribution to client satisfaction was at best indirect and hidden. In addition, their skills may have been seen as widely available in the open labor market, as opposed to consultants’ skills. People Associates in fact subsequently faced significant constraints to their expansion plans because of a shortage
of what they saw as suitable candidates for consulting posts. Therefore, support staff concerns were not seen as important as consultant concerns and were not sufficiently acted upon.

One important aspect of the cultural change pursued was a shift from the high levels of individualism to more teamwork among consultants. This was intended to support the move to selling large consulting projects drawing from integrated consulting methodologies rather than from single consulting tools. During mid-1995, I pointed out in one of my presentations to senior management that there was a dissonance between the existing reward and evaluation system, which was based on individual billing and selling targets, and the pursued value of teamwork. Why would consultants operate as teams if they were being evaluated individually and praised individually at public occasions based on their own sales and billing performance? There is no doubt that most consultants in People Associates are keenly aware of the importance of aligning reward and evaluation systems with the desired behaviors. In spite of that, this issue was not addressed or even discussed until I brought it up. Two months later, the organization’s foremost performance management practitioner was asked to lead an internal review of the performance evaluation process. The result was a new process, implemented at the end of 1995, that included both individual targets as well as softer criteria depending on a consultant’s role profile (for example, whether they were a team leader, a consulting practice leader, or on their level of seniority). However, my interviews and surveys in 1996, as well as an internal diagnostic exercise conducted by People Associates, showed that consultants still believed that what mattered most in their evaluation were their individual targets, and that there was little evidence of behavioral change based on the new performance evaluation process.

I interpreted this situation as an affirmation of the pervasive and inertial nature of cultural elements, in particular the assumption regarding human nature, the individual importance of “adding value,” and the belief that one adds value through selling more and bigger projects and billing more days to clients. This focus put on the backburner other potentially value-adding actions such as helping to develop newer colleagues, spending time on original development of consulting methodologies, or spending time on one’s own expertise development. In fact, senior management saw the fact that important internal training programs often had low attendance because consultants who originally committed to attending did not go because they had last-minute client work, as a problem.

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The Paradox of Multistakeholder Collaborative Roundtables

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This study examines the outcomes of a large-scale Multistakeholder Collaborative Roundtable (MCR) on environmental protection. The findings shed a considerably more realistic light on the concrete outcomes of MCRs than does the image portrayed by the literature and some practitioners. We observed that consensus was achieved, albeit on general principles only. Various types of learning did occur, but they were limited to networking competencies. Problem solving was detected, albeit in the form of incremental innovation only. Overall, the major result of the MCR studied was that it contributed “small wins” to its initial grand objective. The case illustrates the paradox of MCRs. It teaches us that we should be cautious about their real potential to help solve complex collective problems. Yet, it shows that MCRs do serve a useful purpose, that of giving direction to “metaproblems,” a result that apparently can hardly be attained otherwise.

Multistakeholder Collaborative Roundtables (MCRs) have long been presented as efficient alternatives to conventional governmental regulation for solving complex environmental problems, especially when a large variety of stakeholders are involved.

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Particularly pressing are the recommendations of various environmental specialists supporting the philosophy of sustainable development. However, surprisingly little is known about the real achievements of these alternative modes of multiple interest coordination. This article examines the actual outcomes of one large MCR experiment to identify what realistically can be expected of this so-called innovative approach to complex problem solving.

HIGHLIGHTING THE OUTCOMES OF MULTISTAKEHOLDER COLLABORATIVE ROUNDTABLES

The literature suggests that one of the main benefits of using MCRs to address complex problems is their capacity to channel the interdependencies among numerous stakeholders. MCRs allow stakeholders to coordinate their interests, actions, and thinking through integrative mechanisms such as forums, partnerships, negotiations, and collaborative planning. However, this literature has been more interested in understanding how MCRs work than in what they can produce. Most studies emphasize the process of collaboration, its stages, or its success factors. Few studies discuss the actual outcomes of MCRs, such as multistakeholder consensus, learning, and problem-solving capabilities (Pasquero, 1991; Turcotte, 1997). This article tries to shed light on the real nature of these three specific outcomes. In the following, we provide a short summary of the relevant literature. To conduct our analysis, we use a set of guiding questions, which emerged from a confrontation between the literature and the field.

Consensus

Almost by definition, one of the main expected benefits of MCRs is the attainment of consensus. Gray (1989) asserts that consensus is achieved when each participant acknowledges that a given solution is acceptable, even if this solution does not correspond to that participant’s preferred option. Consensual decision making is associated with the ideals of democracy because the quest for consensus implies a sharing of power among the participants. Driscoll (1996) has explained that the sharing of power derives from the right to veto given to each party.

By focusing on the process of consensus reaching at the expense of the contents of the consensus reached, the literature has neglected important questions. Babin (1995), for example, has deplored this bias, reflecting that MCRs often evidenced “bureaucratic democracy” rather than “participative democracy.” Andranovich (1995) recommends that future research on MCRs concentrate more on substance and proposes that “evaluation of collaboration should include both indicators of the process used and the substance of agreement” (p. 438).

With regard to consensus building, the following two research questions remain open: (a) Is attainment of consensus an observable outcome of an MCR? And (b) If so, what is the nature of this consensus?
Learning

Learning is another often-cited positive outcome of MCRs. Interaction among the participants leads to a process of chain learning (Pasquero, 1991). MCRs provide an “interaction space” (Ostanello & Tsoukiàs, 1993) to stakeholders representing diverse sectors of society who then can acquire a more complete perspective on complex problems. The participants are supposed to act as information transmitters, transferring the learning they have developed at the MCR to their individual organizations. Gray (1989) posits that a minimum of variety among the participating stakeholders is instrumental to the success of MCRs. Driscoll (1995) concurs; she observes that during meetings of an MCR in which the “necessary diversity” of stakeholders was lacking, no learning took place.

However, learning is not a systematic outcome of MCRs. Pasquero (1991) has suggested that the chances that a group of diverse stakeholders will come to a synthesis of their perceptual frameworks are indeed limited.

As long as conflicting stakeholders cannot integrate the perspectives of their adversaries into their own rationales, progress in reaching consensus through a collaborative effort will be difficult. For example, when environmentalists bring to a partnership expertise in the biological life chain and industrialists bring expertise in the economic production chain, they usually end up with at best some degree of tolerance for the other side’s position—but rarely with a revised mind-set integrating both fields of expertise. (p. 56)

To conclude, if MCRs are presented by many authors as mechanisms that lead to learning, this outcome has rarely been directly studied. Accordingly, we have formulated the following research questions: (a) Is learning an observable outcome of the multistakeholder collaboration studied? (b) If so, in what does it consist? And (c) what is the influence of the diversity of the participants on these results?

Problem Solving

Solving “messy problems” is the raison d’être of MCRs. Simple problems that can be solved by a single actor or organization do not call for multistakeholder processes. In contrast, complex problems such as environmental issues cannot be addressed by one actor in isolation. Problems of this scope have been dubbed “metaproblems” by Trist (1983); they are characterized by a high level of interdependency among stakeholders. An interaction space common to all stakeholders is therefore required to attain effective problem solving (Ostanello & Tsoukiàs, 1993).

However, very little research on MCRs has tried to evaluate whether MCRs’ objectives of problem solving were attained. Long and Arnold (1995) suggest that multistakeholder partnerships most often fall into the “in-between” category, that is, into a position in which their contribution to problem solving is neither complete nor insignificant. Likewise, Gray and Wood (1991) and Sharfman, Gray, and Yan (1991) hypothesize that in the best case, MCRs can contribute to the implementation of instruments toward the resolution of some aspects of a complex problem, but they do not specify the contents of these achievements.
With regard to problem solving, we therefore have formulated the following questions: (a) Is problem solving an observable outcome of an MCR? And (b) If so, to what extent are the problems resolved?

**METHOD**

The research strategy chosen for this project was that of the embedded case study, which is a form of case work that includes several units of analysis all related to the same larger whole (Yin, 1994). The units retained are the issues debated among the participants during the life of the MCR studied. These issues reflect what Latour (1991) calls “hybrid objects”; that is, the composite objects of contention raised in a forum through multiple negotiations of the participating stakeholders. Nine units of analysis were constructed through an inductive process during and after data gathering. By investigating the issues being debated and providing a detailed discussion of actual outcomes, this research is differentiated from most studies on MCRs.

The MCR chosen for this study was a roundtable organized at the regional level in 1994 and 1995 in a large North American metropolitan area. Its objective was the development of a waste management program based on the basic principles of ecological management. Data were gathered mainly by participant observation techniques (for a total of 70 hours), by in-depth interviews (20 respondents for a total of 30 hours), and through document analysis.

**Data Collection**

Participant observation consisted of attending each official meeting of the roundtable as well as informal meetings among participants. During official meetings, the researcher was a silent observer and took detailed notes concerning what was being said and how the participants interacted (e.g., with whom they sat, who they talked to at coffee breaks). At the beginning of the roundtable, on a few occasions, the researcher was mistaken for a secretary. Observation was complemented by varying degrees of participation. Informal meetings, during lunch time for instance, allowed the researcher to occasionally ask other participants to explain their viewpoints on some of the issues debated during the formal meetings, explanations that were duly noted afterward. Other opportunities for informal conversations arose, for example, during coffee or lunch breaks, or when rides were shared. Occasional requests for the researcher’s own perceptions about the roundtable process were politely declined to preserve the participant observer’s neutrality.

A secondary source of data consisted of interviews with the roundtable participants. A series of open-ended interviews were conducted about one month after the last official meeting. The respondents first were contacted by a letter explaining the research objectives and guaranteeing confidentiality. Appointments were made by phone.

Of the 21 roundtable participants, 19 were interviewed. They represented the full range of the interests represented: environmental organizations (5 respondents), one
scientific association (1 respondent), industrial and commercial associations (3 respondents), municipalities and regulating agencies (9 respondents from the public sector), a public health organization (1 respondent) and a union (1 respondent). The roundtable process facilitator also was interviewed.

The interviews, based on a semistructured questionnaire, included questions on the participation of the respondents’ organizations in the roundtable. They also probed the respondents’ perception of the roundtable process and especially of its outcomes. On average, the interviews lasted 1.5 hours. Interviews were tape-recorded and then transcribed.

The final source of data was documents pertaining to the roundtable and related events, which were collected both throughout the participant observation process and during the subsequent interview period. These included reports provided by the roundtable facilitator, internal documents supplied by respondents on their organizations, press clippings, and other documents provided by various respondents. In addition, a documentary search was conducted in the municipal archives in order to trace the historical developments leading to the constitution of the roundtable as well as the reactions following the official publication of the roundtable’s final report.

Data Analysis

Data analysis followed several steps. First, data were read attentively and annotated with marginal comments (Miles & Huberman, 1994). These remarks were condensed into themes and then systematized into categorical files. In the third step, the files were articulated into tables, which served as the basis for case write-up. In the fourth step, nine units of analysis, reflecting the major issues debated among the participants, were constructed. These units included the following: (a) the negotiations on the rules to be followed during the collaboration process, which were considered an output of the MCR experiment, as well as the objectives, respectively, for (b) waste reduction, (c) training, (d) taxation, (e) reuse centers, (f) hazardous waste, (g) compostable waste, (h) recyclables, and (i) the roundtable follow-ups.

For each unit of analysis, the evolution of the debates surrounding the issue before, during, and at the end of the roundtable process was described. Themes common to the nine units then were identified. Throughout the process, a constant iteration occurred between theory, data, and write-up (Denzin & Lincoln, 1994). This led to the questions pertaining to consensus, learning, and problem solving, which are presented here as the main topics of analysis.

RESULTS AND DISCUSSION

Our results are presented in five parts. We begin with a brief description of the environmental issues addressed by the 3Rs Roundtable. We then identify the parties involved, and follow with a description of the roundtable process. The fourth section is the most substantial and it reports the outcomes of the roundtable. The fifth part dis-
cusses the ways in which the roundtable process influenced the contents of its outcomes.

Environmental Issues
Addressed by the 3Rs Roundtable

In September 1994, the Urban Community (UC) of Big City, an organization comprising the municipalities of a large North American urban area, decided to organize a roundtable on waste management. The mandate of this MCR was to develop a regional plan based on the then-ecologically fashionable philosophy of sustainable development. It was based on the principles of reducing, reusing, and recycling, commonly designated among environmentalists as the “3Rs.” The originators of the roundtable viewed these principles as the inescapable framework within which the environmental problems generated by both waste production and waste management techniques had to be solved.

At the time, the waste management situation in the Big City region was deemed quite alarming. Waste indeed could severely damage the quality of the environment because the production of solid waste had risen in proportion with economic growth. By the early 1990s, industrial solid waste production alone had reached more than 2 billion tons each year worldwide. In the area in which the study was conducted, each housing unit generated about 1.1 metric tons of domestic waste per year.

Even more damaging was the worldwide production of some 350 tons of hazardous waste (Denis-Lempereur, 1993). Toxic waste represented only 1% of general domestic waste but had a disproportionate impact on health and the environment (Séguin, 1994). Household stain removers, solvents, paints, and pesticides often included hazardous chemicals, as did batteries, which represented up to 50% of hazardous domestic waste. Eliminating this waste not only was costly; it also generated its own pollutants. For example, waste collection engendered additional forms of side pollution. One truck in six was reported to carry waste. Burying this waste generated biogas (a potentially carcinogenic compound of methane and organic acids) and lixiviate (percolated water loaded with bacteria). Incinerating it produced ill-controlled toxic contaminants and ashes. In other words, waste management techniques produced their own waste. Such were the magnitude and complexity of the issues the 3Rs Roundtable was mandated to address.

The Parties Involved

The Urban Community of Big City had long experience with some forms of environmental management, such as the provision of water treatment and other services for the municipalities of the region. However, it had not yet grappled with waste management issues, and even less in a “sustainable development” mode. The instigators of the 3Rs Roundtable were the Big City Waste Management Department and the Suburban Waste Management Agency. A representative of the latter described the 3Rs Roundtable as a “chapel where [the agency] hoped to get married,” indicating with some irony that it hoped to build an alliance with Big City in order to finally develop an
integrated waste management program for the region. The past decade had been rife with controversy surrounding projects undertaken by waste management facilities, such as incinerators and landfills, fueled by various groups in public hearings. In an effort to stop the continuous bickering, the Big City authorities finally decided to invite the most active players to join the 3Rs Roundtable. Eighteen organizations, representing various milieux (stakeholders), such as industry and commerce, unions, environmentalists, citizens, scientists, and governmental organizations, accepted the invitation to participate.

The Roundtable Process

To ease what was anticipated to be a conflictive process, a facilitator was appointed to help put the MCR together. She met individually with representatives of each of the guest organizations, explained the general mandate and the process of the 3Rs Roundtable, and invited them to participate. She depicted the 3Rs Roundtable as the “first multistakeholder collaboration on environmental issues in the region.”

The first official meeting of the roundtable set the tone for the future. Many participants indeed perceived it to be particularly significant. Bringing together the principal stakeholders in the domain, often longtime opponents, with the objective not of confronting each other but of building common ground, was considered to be an accomplishment in itself. That this meeting ever took place attested to a shared will to overcome past conflicts and to work together in a collective project. However, as each participant was invited to express his or her expectations, it became clear that the exercise was not free of ambiguity. The atmosphere was both filled with enthusiasm and strangely tense, as many participants had agreed to join the table only reluctantly. Some elements of the process thus were called into question, such as the agenda, the resource attribution, the rules or code of conduct for the roundtable, and even the MCR’s mandate.

After the initial exchange of views, defining a modus operandi was one of the first major issues the roundtable confronted. The facilitator suggested a series of operating guidelines, which met with mixed reception by the participants. Some guidelines were readily accepted by all. One was the understanding that no one should refuse to budge from their original positions; another was the quest for practical (as opposed to theoretical) solutions. The guideline asking that everyone assume the good faith of everyone else was received with some skepticism but was later adopted.

Much more problematic were the guidelines concerning information disclosure and the ratification of consensus. In the former case, the facilitator had suggested the following rules: (a) that the participants commit themselves to providing all the relevant information available to them, (b) that the contents of the negotiations conducted around the table be kept confidential, and (c) that the media be excluded from the process. From the outset, some of the major groups clashed over these simple rules. Environmentalists claimed that confidentiality was unacceptable to them because their mandate included the disclosure to the public of all available information; to them, the capacity to alert the media was in fact a strategic tool. Conversely, business groups
considered that confidentiality was a nonnegotiable condition, also of strategic importance. Representatives from municipalities were concerned that the media would attempt to antagonize the parties before any significant work could be accomplished.

As a way out of this deadlock, the participants finally agreed on a code of ethics, which included the following rules: (a) the talks around the table would be kept confidential; (b) participants would respect the confidentiality of the information provided to them when requested by the members who had made it available; (c) participants could grant interviews to the media but could not offer their own interpretations of the positions of other members, nor presume the final results of the roundtable; (d) because the issue was of public concern, information and documents would eventually be made available to the media.

As a result, the media were kept informed of the existence of the roundtable but not of the contents of its deliberations. The consequence was a built-in ambiguity both in the meaning of the code of ethics and in the nature of the roundtable process itself. Consequently, two central questions remained unanswered: (a) What exactly was the base rule, confidentiality or disclosure of information? And (b) What exactly was the ultimate nature of the collaborative process, private or public?

Regarding the ratification of consensus, the facilitator had suggested a rule whereby the silence of one participant would be equivalent to his or her agreement. The participants massively rejected this rule for fear the final report could misrepresent their true positions. An alternative rule therefore was introduced, whereby the participants would be called upon to ratify the final report on behalf of the groups they represented, thereby confirming that the report adequately reflected their points of agreement and disagreement.

The following meetings often were equally laborious, although they directly addressed the substantial issues at hand. The second to fourth meetings were dedicated to diagnosing the problem of wasteproduction and management: Each organization presented its perspective and its preferred problem-solving approach. At this stage, the researcher noticed that some of the stakeholders who initially were in conflict were getting closer, chatting at coffee breaks for instance.

The following six meetings were dedicated to the development of waste management options. At one point, the roundtable process was disturbed by municipal elections. New governments were elected and some of them did not consider it worthwhile to send representatives to the table. The facilitator spent much time and effort trying to convince them to join again. Eventually, she was successful. After a few weeks of interruption, the roundtable resumed its activities with the newly appointed participants.

At this stage, the participants agreed that the facilitator would write a report on the consensus on management options reached at each meeting. Unfortunately, they proved unable to reach the expected consensus in this area, owing to the variety of perceptions and interests. Nevertheless, at the end of the process, the facilitator and her team were charged with the responsibility of writing a final report presenting the consensus obtained since the beginning of the roundtable. Recognizing the lack of consensus on many issues, some organizations began considering writing their own “dissi-
dent” report. Eventually, they were dissuaded by other participants, who were able to convince them that this approach would be counterproductive.

If you add dissident appendices, the politicians won’t even look at the report. (A participant at the roundtable to the other participants)

Although we have diverging interests, we have a common objective, which is to promote inclusive concepts... with a few punchy messages, so we should not mention the specifics on which we disagree. (A participant at the roundtable to the other participants)

It had been agreed initially that the final report would be formally endorsed by the participants. Then, some participants claimed they could not append their signatures without consulting with their respective bases. The process was deemed too long by the group to meet the report’s deadline. Ultimately, the final report was simply approved informally. Despite the participants’ earlier commitment, it was never formally endorsed by anyone. To this day, the only official recognition of the members’ contributions is limited to the first appendix to the report, which lists the participants, the organizations they represented, and their status around the table.

The Outcomes of the Roundtable

The unsigned report of the 3Rs Roundtable was finally published and presented to the Urban Community as scheduled. Many participants expressed the wish that a permanent multistakeholder structure similar to the roundtable be created to continue addressing these issues in the future. This wish was not fulfilled. The 3Rs Roundtable process was not repeated; neither was it followed by any institutionalization of collaborative relationships among the participating organizations. This came as a disappointment to some, particularly for the participants representing the Big City and the Suburbs. “It is too bad that there was no wedding in the 3Rs chapel,” concluded the participant who at the outset of the process had been expecting the development of an integrated waste management system for the region.

Nevertheless, the roundtable did produce some outcomes. We discuss below the three forms of outcomes we had set out to investigate: consensus, learning, and problem-solving capabilities.

Consensus Building

The first set of outcomes involves the types of consensus that were reached during the roundtable process. The net result is mixed. One positive outcome of the roundtable is that the participants agreed to the “3Rs” concept itself. Within this concept, the principles of reduction, reuse, and recycling were placed side by side to form an umbrella concept. In theory, the participants agreed to an order of priority among these principles: reduction first, then reuse, and finally recycling. During the discussions, they learned to state these principles according to that specific sequence. In practice, however, there never was a consensus on which of these three principles should be implemented as a priority. While most environmental groups were calling for the preeminence of reduction at source, many governmental agencies and indus-
trial associations advocated that implementing recycling programs was a more feasible and thus preferable option.

There was no consensus either on the specific definitions of these principles nor on how to implement them. Three definitions of reduction were juxtaposed in the reports and the participants reached no agreement on what the reduction objective of 50% meant, nor on the timetable to achieve it. There was no consensus on what should be reused, nor on how and by whom reuse operations should be done. The same observation holds for recycling. Discussions failed to reconcile interpretations of what was desirable and what was achievable.

For example, there was a consensus on composting in principle but not on what kind of materials could be composted. One governmental agency representative maintained that only the “noble green” (e.g., garden waste coming from citizens’ yards, and fruits and vegetables coming from commercial waste) should be composted. He explained that citizens could not reasonably be expected to sort kitchen waste properly; for example, by possibly mixing plant with meat waste, they would create additional health and safety problems that would complicate the composting process even more. From a slightly different angle, an industry association representative concurred. He argued that grass would have to be excluded from garden waste because the herbicides and pesticides often used extensively by citizens for lawn care and the weeds included in this kind of waste would compromise the commercial value of the compost. Totally divergent was the perspective of the representatives from environmental groups. They asserted that all organic waste, including plant waste from the garden and citizens’ kitchens, as well as meat and dairy waste, could be composted safely. All it required was that citizens be properly educated in sorting techniques, and that regulations to control and prohibit the use of chemicals in gardens be rigorously enforced. The conflict here was due not merely to a clash of interests but also to philosophical differences between the idealists, who believe that human behavior can be improved through education, and the pragmatists, who are skeptical about reforming human nature.

Still among the consensus, another positive outcome of the roundtable was the general recognition of some basic priorities, such as the need for a “3Rs” awareness and educational campaign, the need for more environmental regulations, and the need to squarely address the problem of hazardous waste. Concerning the awareness campaign, there was consensus on the list of groups and sectors to be targeted but not on who would finance the campaign. The governmental agencies claimed they were cutting back in many areas and could not afford to support the “3Rs” campaign alone. The representatives from the waste management sector argued that the industry could not be profitable if it had to assume the additional costs of educating citizens. Representatives from nongovernmental organizations (NGOs) claimed that they lacked the necessary resources to undertake the educational campaign and that their volunteers were already exhausted with their usual tasks. As for the other two priorities (the hazardous waste problem and the need to regulate the sector), all participants agreed on their importance; but once again, they were unable to reach consensus on either the type of regulation to be implemented or on which groups should be targeted by the regulations.
Learning

In addition to consensus, the second noteworthy outcome of the MCR was learning. Learning resulted from information exchanges among the participants. It provided them with the opportunity to understand each other’s perspectives and fields of expertise and allowed the circulation of information on technical issues.

The Roundtable was an opportunity to test our concept and to receive critical comments on it, so that we could improve it. (Respondent representing an environmental group)

With the roundtable, our adversaries have learned about our arguments and our fundamental analysis. (Respondent representing a union)

The Roundtable was not about coordination. It was more about exchanging perspectives, which allowed participants to get closer. (Respondent)

On technical issues, I did learn a few things. (Respondent)

Participants also learned about the social structure of the domain by meeting and establishing relationships with the other MCR participants. This type of learning (in other words, who’s who, which organizations and networks are involved in the issue) was cited by most participants as a more important outcome of the MCR than technical learning.

The learning was less technical than social. (Respondent)
The objective of an MCR is that people understand each other and establish bridges. (Respondent)
The Roundtable allowed us to better understand the dynamic relationships between the private and the public sectors, and thus find a niche to better defend our interests. (Respondent)
It was interesting. It allowed us to see where everyone stood. (Respondent)
It will help [our organization] to take its place. (Respondent)
I realized that for hazardous waste, my main collaborators were just not present at the regional level. (Respondent)
Concerning industrial composting, initially I thought only the private sector would do it, but through the Roundtable we learned that the NGOs were also interested and active. (Respondent)
It was a welcome opportunity to realize that municipalities would soon be interested in new types of waste management. (Respondent)

The results show another form of learning, the acquisition of new social skills. Some participants learned how to collaborate within the network of relationships that the roundtable fostered. During an interview, one respondent representing an industrial association stated that the MCR had allowed the members of his association “to learn that it is better to collaborate than to attack.” Indeed, learning to collaborate was described by some respondents as a transition from an adversarial discourse to a promotional discourse.

The Roundtable was different from a public hearing because rather than speak in turn in an adversarial context, we had to learn to work together. (Respondent)
We learned how to listen to each other and to apologize. (Respondent)
By working together at the Roundtable, everyone learned to know and to respect each other better. New relationships between individuals developed. (Roundtable official report, p. 40)
Learning how to argue a point also was commonly cited as a benefit of the roundtable experience. During subsequent interviews, the representatives from a variety of organizations emphasized that the MCR had allowed them to argue their favored ideas in a “promotional language” rather than in an assertive one. One respondent, representing a professional association, provided a telling metaphor to illustrate the promotional atmosphere that prevailed in the negotiations that took place around the MCR: “In an MCR, we try to seduce with our ideas in a context of polygamy.”

Knowledge of the structure of social relationships, of existing networks, and of the interests of other participants, as well as the acquisition of new skills of collaboration and interaction, sometimes led to the formation of subsequent alliances between organizations represented at the roundtable. For instance, a few months after the 3Rs Roundtable was closed, two participating organizations, a governmental agency and a NGO, developed an alliance for the reuse and recycling of small home appliances.

One element limiting the potential for learning at the roundtable was the lack of motivation, or the lack of capability of some participants, to communicate sensitive information about the milieu they were representing. For instance, the representative from the waste management industry provided considerable documentation put together by his association. It turned out, however, that most of this information had already been published by governmental agencies. By contrast, it was not possible to secure from this association information on the volume of waste collected by the industry in the region. The representative just was not able to disclose these figures, which were deemed strategic and therefore confidential, by the association’s member firms.

**Problem-Solving Capabilities**

The third outcome of the roundtable involved problem-solving capabilities. Indeed, the roundtable offered an opportunity to develop new ideas concerning the management of hazardous waste.

Concerning hazardous waste, the 3Rs Roundtable report presents innovative suggestions. If we could implement them we would be the leader in the country, as far as the 3Rs are concerned. (Respondent representing the public sector)

With regard to hazardous waste, it seems we (at the Roundtable) found out new things, for instance, the deposit system gained in popularity. (Respondent representing the private sector)

The process through which the typology concerning hazardous waste was refined also is particularly telling. Typology refinement consists of the fragmentation of an initially broad conceptual category into several specific categories, thus increasing the problem’s tractability (manageability) by suggesting new approaches. Particularly interesting is the evolution of the hazardous waste category. Initially, it was fragmented by distinguishing domestic from industrial hazardous waste. Then, a “safe hazardous waste” subcategory emerged to designate products that are harmful to the environment if not properly disposed of, but are commonly bought by consumers and thus can be collected and reused without extraordinary measures. A selective collection of such “safe hazardous waste” would decrease the cost of treating hazardous
waste in general, permit a larger amount to be treated, and consequently augment the tractability of the problem. The new subcategory had a paradoxical and catchy label. For some participants, it clearly had instrumental value. However, this was not enough to guarantee its success as an operating concept.

For NGOs, for example, the hazardous waste that could be considered “safe” was paints, used oils, batteries, and aerosol. Such is the case, for instance, of a half-empty paint can that a citizen brings back to a reuse center and which can simply be used again to paint something else. Other members disagreed. The concept was eventually crushed by the representative of a governmental agency who claimed that half-empty paint cans could be made very toxic when mixed with PCBs or other toxic waste by “irresponsible citizens.” The so-called “safe hazardous waste” would then turn into a health hazard. This example illustrates how the potential utility of an innovative concept could be hampered by lack of consensus on the definition of the concept itself, thus compromising the implementation of an action plan based on that concept.

Logically, the refinement of waste typologies was reflected by transformations in the language used by the participants. This phenomenon also was observed on other issues, such as composting, in which five types of compost were distinguished: “bulk,” “humid,” “vegetal,” “garden,” and “noble green.” Despite its limitations, the process of new concept creation nevertheless was deemed useful by many members. As the facilitator once noted to the participants, “Our vocabulary gets richer. That is good for the 3Rs.”

The Influence of the Process on the Outcomes

The diversity of the sectors of society represented was a fundamental requirement for the roundtable. From the outset, the coordination of participation of all stakeholders was considered necessary if solutions to the complex problem of waste management were to be developed. However, as we have seen, diversity had a downside. It increased the possibility of deadlock as each participant tried to impose his or her own logic (or perceptual framework), and each had veto power. Consensus therefore could only be reached when all the logics could simultaneously agree on the same object. In the case of sensitive matters, this meant that consensus could be obtained only on general or ambiguous objectives or definitions. Consequently, some degree of ambiguity was necessary for the roundtable to be operational. Unfortunately, if ambiguity did facilitate functioning, it also limited the outcomes the roundtable could achieve; indeed, the table ultimately failed to produce what it had been designed for—that is, a specific blueprint for an ecological waste management plan at the regional level. Neither was it able to institutionalize the initially desired collaboration between the Big City and the Suburbs’ waste management departments.

The diversity of the roundtable’s participants constitutes a paradox that lies at the heart of the limitations of an MCR. On one hand, it limited consensus to generalities. On the other hand, diversity cannot be dismissed. It is important to bear in mind that stakeholder diversity was planned purposefully in the hope that interstakeholder collaboration would allow participants to efficiently address the complex problems that individual groups had proved unsuccessful at solving alone. The absence of a hierar-
A consensus at the roundtable and the agreement that decision making should be consensual also were necessary to convince the invited organizations to participate on a voluntary basis. Furthermore, the development of consensus, even if on weakly defined (or ambiguous) concepts, had a beneficial influence on motivation. For instance, the concepts of “3Rs,” “Reuse Center,” “composting,” or “safe hazardous wastes” became symbols, which generated enthusiasm and contributed to legitimizing the context for an ecological approach to waste management.

The diversity of participants also facilitated learning. As previously discussed, learning about the social structure of the domain itself (that is, the people, the organizations, and the networks involved in the issue), as well as learning how to collaborate, were cited by most participants as an important outcome of the roundtable. Learning also occurred in problem diagnosis: Participants learned how to fragment complex problems. This increased the tractability of such problems, both by suggesting new market solutions and by facilitating the drafting and implementation of new regulations. However, because specific forms of learning did not find consensus among participants, their transfer to the organizations represented at the MCR and to different sectors of society was limited, thus compromising the development of effective regionwide solutions. In other words, the contribution of the MCR studied in this case to the solution of environmental metaprobems is akin to the “small-wins” approach described by Weick (1984): It led to incremental changes pertaining mainly to language and problem formulation.

CONCLUSION

The case analyzed in this article emphasizes the outcomes of a Multistakeholder Collaborative Roundtable rather than its process. It is based on a set of questions that were derived both from a critical examination of the literature and on the first contacts with the field. Overall, the case presents an empirical counterpoint to some of the unverified theoretical claims regarding the roles of MCRs for solving metaprobems. MCRs do fulfill a useful role, but one must accept that this role can be quite limited. The paradox is that the very requirements that make MCRs desirable and workable also are their most stringent limitations. Therefore, the view we present offers nuances.

In the case studied here, the MCR provided the participants with a forum for interaction. It gave them the opportunity to listen to one another and express their views on ways to influence current practices through market actions, regulation, or cultural change. A first outcome of the MCR is that it offered the participants the opportunity to reach consensus, even if this consensus was limited mostly to general statements and weakly defined concepts. This phenomenon is congruent with Driscoll’s (1996) analysis of a forest roundtable on sustainable development, which reported that consensus was reached, “albeit on general principles” (p. 163).

Consensus on ambiguous or weakly defined concepts should not be equated with failure. Michael (1973) stated that the goal of long-range social planning “would not be the blueprint but a series of generalized guides to future decisions and actions” (p. 41).
In the complex environment of a MCR, which is organized around metaproblems with low tractability, and characterized by deep-rooted conflicting interests, values, and perspectives, consensus seeking does play a valuable role: it gives direction to an otherwise totally fragmented domain. The key is to preserve some amount of ambiguity in the definitions and the solutions so that consensus can emerge, even under various interpretations.

In spite of its centrality, the role of ambiguity has rarely been discussed in the literature on MCRs. Indeed, some authors have been strongly opposed to it. One exception is Huxham (1993), whose perspective is supported by this article. A few organizational theory scholars also have praised ambiguity as an appropriate strategic behavior to deal with the diversity of objectives within an organization. “Ambiguous missions and goals allow divergent interpretations to coexist and are more effective in allowing diverse groups to work together” (Eisenberg & Witten, 1987, p. 422). In the case studied here, the ambiguous concepts developed through consensus acted as symbols that oriented actions in the domain.

Moreover, the MCR offered participants the opportunity to learn about the domain and to improve their abilities to interact and collaborate in a multistakeholder context. Andranovich (1995) observed that the outcomes of the collaborative process he studied included building the capacity of individuals and organizations to work together. A final outcome of the MCR lies in the refinement of the language used by the participants. As new categories emerge from old ones, problem tractability is marginally enhanced, thus contributing to small-wins (Weick, 1984) rather than to either the status quo or grand solutions.

Despite the limitations of MCRs, policymakers should seriously consider organizing them as one step forward in responding to metaproblems. However, they should be realistic in their expectations. In the case studied here, the MCR was no panacea to conflicts and controversies but it did contribute incrementally to promoting general concepts and ideas, as well as to innovation and learning the value of collaboration, results that may not have occurred otherwise.

Environmentalists and public interest organizations have been called on intensively in the past few years to participate in multistakeholder initiatives such as MCRs. Although they have long advocated participation, some of them have been wondering if their involvement with MCRs was the best allocation of their limited resources. Others have feared being co-opted or manipulated by the dominant institutions present in multistakeholder initiatives. This fear is not necessarily founded. The voluntary consensual decision-making process, on which the MCR was based, seems to have provided protection against the risks of co-optation. In the case studied, the MCR indeed created positive outcomes for public interest groups too, even if these outcomes were only incremental.

Industrial and business representatives are equally concerned about the value of their participation in multistakeholder initiatives such as MCRs. They too should be realistic about what this form of organization can achieve. If they expect that a MCR necessarily will enable them to convince their opponents of the superiority of their own positions, they will be disappointed. However, if they set their sights on participation rather than on competition, they might make valuable gains. For instance, the case
presented here shows that a MCR does provide a unique showcase for an industry to explain its position to other stakeholders. It also offers a rare opportunity to learn from those other stakeholders. For the industry, the latter benefit is a form of strategic scanning, whereby it can identify new trends and potential allies. The participation of corporate delegates in a MCR also can contribute to build business legitimacy. Refusal to participate in a MCR can discredit any business position, regardless of its actual value. Indeed, the corporate participants themselves considered the MCR under study a legitimate process, as it was associated with valued objectives such as innovation and problem solving.

The present research was limited in scope to one case study. However, the ethnographic approach used allowed for an in-depth understanding of that case and a rich description of its outcomes, which we believe grants it some degree of generalizability. More importantly, this case provides empirically based insights on the real potential of Multistakeholder Collaborative Roundtables to solve metaproblems. It precludes initiators’ and participants’ overly optimistic accounts of MCRs and highlights the social benefits that realistically can be drawn from these mechanisms. More research is now needed to identify the conditions maximizing these benefits.

NOTES

4. The interview contained the following question: “What was the best meeting you remember?” To this question, three respondents answered “The first one,” and two others answered the first ones. Thirteen respondents answered this question, and there were 10 official meetings in the 3Rs Roundtable process.

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Toward Common Ground and Action on Repetitive Strain Injuries

An Assessment of a Future Search Conference

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Numerous participatory approaches to action on complex issues have emerged in recent years. One approach, the Future Search conference, is said to build a shared vision and rapid action by diverse stakeholders. This article reports on a detailed qualitative analysis of a Future Search conference on repetitive strain injuries, an ambiguous, conflict-ridden, and systemic problem. The Future Search encouraged the expression of diverse perspectives and mapped a certain domain of common ground. It stimulated various kinds of action, enhanced stakeholder involvement and awareness, and increased commitment to multistakeholder dialogue and action. Several weaknesses of the Future Search model are identified. Specifically, this study suggests the need for more participant clarity about what is expected, a more solid framework to support follow-up action, greater explicitness about what constitutes common ground, and more time for common-ground building and action planning.

Over the past two decades, researchers and practitioners have argued that our survival in today’s turbulent environment requires a new approach to planning and problem solving. Social problems increasingly are considered to be complex or even “wicked” in that they are interconnected, multifactorial, ambiguous, systemic, and often

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conflictual (e.g., Mason & Mitroff, 1981). It has been argued that the highly complex and interdependent nature of the turbulent environment increases the need for interorganizational and cross-stakeholder participation (Trist, 1985). Partly in response to this, the 1980s and 1990s witnessed the rise of whole systems change processes (Bunker & Alban, 1997; Weisbord, 1987). Indeed, a new school of large group interventions (e.g., Open Space, Search Conference, Future Search, Real Time Strategic Change, and the Conference Method) has developed, supported by a massive cadre of consultants. Proponents of these methods suggest these approaches can effectively build mutual understanding and collective action on complex and divisive organizational and social issues. The processes are said to be open, democratic, and inclusive.

Unfortunately, there is little in-depth research on these processes or documentation of the outcomes they deliver. Granted, these kinds of interventions do not lend themselves easily to traditional research methods that determine cause-and-effect relationships. Still, there is a need to develop innovative approaches to try to understand the richness of human interaction in these processes and to assess their effectiveness in addressing difficult organizational and social problems.

This article draws on a detailed evaluation of the process and outcomes of one popular large group method, the Future Search conference. Drawing on and systematically evaluating a range of primarily qualitative data, this study examines the extent to which—and the ways in which—Future Search builds common ground and collective action on repetitive strain injuries, a particularly controversial issue. In sum, I argue that this particular large group process makes important contributions but that we need to apply the method in a more reflexive way to address some potential limitations and dangers that exist.

The Future Search Conference

Future Search is a large group, participatory planning process aimed at building common directions for action on complex social issues. It evolved out of the action research tradition forged by Kurt Lewin and Eric Trist and the search conference model that Trist and Fred Emery developed in the early 1960s (Weisbord, 1992). The centerpiece of Future Search is a 2½-day conference at which 60 or more diverse—and often conflicting—stakeholders work toward common ground and action. The agenda includes a scan of the history and trends of the external environment, an exploration of current trends, an assessment of current action, envisioning desirable futures, and the development of strategies, actions, and commitments to address the issue. Future Search has been applied to a variety of social issues such as child literacy, community development, workplace redesign, and organizational change in order to set shared goals, develop and implement long-term plans, build new partnerships, and create new policy options (Future Search Network, 1997). Two books on Future Search were released in the 1990s (Weisbord, 1992; Weisbord & Janoff, 1995) as well as a widely

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referenced book on the closely related Search Conference method (Emery & Purser, 1996). There now are over 450 organizational and community consultants and leaders who are part of the Future Search Network around the world.

A central claim made of Future Search is that it can build a common understanding and stimulate collaborative action on fundamentally contentious, complex, and systemic issues that involve numerous competing players. Specifically, Future Search is said to do the following:

- **Identify common ground.** Participants “confirm mutual values,” “create shared future visions,” and “develop common agendas” in order to develop a “shared picture of reality that no participants had at the start.” (Weisbord & Janoff, 1995, pp. ix-x, 3)

- **Stimulate rapid action.** Future Search generates concrete and realistic action plans that have agreement from a wide range of individuals and groups and are implemented quickly. (Weisbord & Janoff, 1995, p. 9)

- **Facilitate participant learning.** Future Search is a process of “discovery” in which people “discover innovative ideas” and “discover... common agendas and shared ideals” (Weisbord & Janoff, 1995, pp. x, 3, 11). It also is a process of self-awareness as “organizations and communities learn more about themselves from every angle,” and “nearly everyone finds their outlook changing.” (pp. xi, 3)

- **Increase potential for multistakeholder cooperation.** Proponents of Future Search claim the process can “take down walls between haves and have-nots, experts and amateurs, leaders and followers” (Weisbord & Janoff, 1995, p. xiii). By participating in the Future Search process, people find out better where others stand and thus “may begin to accept differences in background, viewpoints, and values as realities not problems” (p. xiii). Future Search is said therefore to “set up conditions under which people can choose new ways of relating” (p. 8). And because Future Search helps people realize that they can shape the future, participants “take responsibility for matters previously avoided or ignored.” (pp. xi, xiii, 9)

- **Follow a participatory, inclusive, and open process.** Weisbord and Janoff (1995) describe the process of Future Search as a process of self-management in which “everyone is invited to share leadership and participate as peers” (pp. ix, 11). They also describe Future Search as a “series of open dialogues,” suggesting that participants learn more about their ability to work together with more shared authority (p. 8). In the end, new projects, working relationships, and coalitions are developed.

Despite making these claims, Weisbord and Janoff (1995) acknowledge that evidence of success is “anecdotal” and that there is a need to “recreate our key conditions and track what happens over time” (p. 9).

Indeed, while there are numerous descriptions of Future Search conferences, often by people who either facilitate or sponsor them (see Weisbord, 1992), there have been few attempts to systematically and critically assess the claims made of Future Search, as is undertaken here. Several master’s and doctoral dissertations on Future Search exist (e.g., Baldwin, 1995; Pagano, 1994) but few of them have used formal interviews and methods of analysis. One exception is Stewart (1995), who carried out a small number (six) of in-depth interviews to explore how participants cope with the “basic social process” of Future Search of finding common ground. The most rigorous study is perhaps that by Oels (2000), who carried out in-depth participant interviews to explore the fairness and competence of two Future Search conferences on local-global environmental issues.
Repetitive Strain Injuries

The Future Search process was applied to the controversial problem of upper limb musculoskeletal disorders popularly known as “repetitive strain injury” (RSI). RSI is one of a number of nonvisible injuries and illnesses that are increasingly prevalent in industrial societies (e.g., low back pain, mental stress, environmental and chemical sensitivities, chronic pain, and chronic fatigue syndrome). In 1993, musculoskeletal disorders accounted for over one third of all long-term direct and indirect disability costs in Canada (Moore, Mao, Zhang, & Clarke, 1997), and it is estimated that 8% of Canadians, or about two million people, experience RSI or back pain (Statistics Canada, 1998).

RSI is characteristic of a “wicked problem” (Mason & Mitroff, 1981). It is the following:

- **Uncertain and ambiguous.** It is difficult to determine the relative importance of the many factors that cause RSI or to objectively establish the existence of RSI.
- **Conflict ridden.** Involved are the fundamental and sometimes competing interests of many groups such as medical professionals, the state and its regulatory agencies, unions and workers, and employers.
- **Interconnected.** Interrelated individual, organizational, and societal phenomena are at play.

Despite the now large body of epidemiologic and laboratory research on the topic (e.g., Hagberg et al., 1995), RSI remains hotly debated by stakeholder groups. There remains significant disagreement over how best to prevent and treat RSI, and more fundamentally, whether RSI constitutes a real or soluble problem at all. Lack of trust and mutual understanding between stakeholders poses a barrier to the prevention and treatment of RSI.

A study of RSI at a newspaper agency (Polanyi et al., 1997) and discussion with key players on RSI suggested the need for various stakeholders involved with RSI to meet in a nonadversarial setting in order to communicate effectively and safely with one another. There was a feeling that there exists unnecessary conflict and division between groups, which could be overcome by effective dialogue and increased collaboration. Future Search seemed to provide an inclusive forum that could stimulate dialogue among researchers, policy makers, practitioners, and injured workers to build the innovation and collaboration needed to better prevent and treat these injuries.

**METHOD**

**Planning and Implementing the Future Search Conference on RSI**

In consultation with the project sponsors and other key informants, key players in the field of RSI were identified to sit on a multistakeholder design team. Design team meetings, attended by between 10 and 15 participants, were held to:
1. Determine whether the Future Search method was appropriate for RSI.
2. Decide on the scope and title of the conference.
3. Identify key stakeholders and individuals to invite.
4. Decide on some specific conference design and logistical issues.

Design team members met with consultants and decided that the Future Search approach had the potential to stimulate greater stakeholder cooperation, mutual understanding, and action on RSI. The two consultants, who between them have facilitated dozens of Future Search conferences, were engaged to facilitate the process. It was agreed that the objective of the conference would be, as stated in the conference invitation, to “stimulate collaborative action to reduce the human and economic burden of upper limb musculoskeletal disorders.”

The team identified nine stakeholder groups that had an interest in RSI: designers and engineers; employers; ergonomists; health care providers; health and safety professionals; government officials; injured workers and their advocates; labor representatives; researchers and media; and the provincial compensation board and private insurers. The design team generated lists of potential participants for each stakeholder group, trying to maximize diversity of age, gender, ability/disability, ethnocultural background, geographic region, sector of the economy, size of company, and unionized/nonunionized. The team also tried to ensure that a range of positions and perspectives on RSI were represented.

The conference was held in Hamilton, Ontario, in May of 1998. A standard Future Search agenda was followed (Weisbord & Janoff, 1995). A follow-up conference was held in February 1999. However, the analysis here focuses on the initial conference.1 See Table 1 for conference agenda.

The conference consisted of the following stages:

- **Reviewing the past.** Each participant identified and wrote on wall-sized posted strips of paper key events of (a) a global history, (b) the history of RSI, and (c) their own individual lives. In small mixed groups, participants interpreted key trends in the collective history.
- **Assessing the present.** Participants identified external trends affecting the treatment and prevention of RSI. These trends were recorded in the form of a “mind map”—a visual web of the interrelated trends affecting RSI. Next, participants worked in stakeholder groups to identify key trends affecting their work on RSI and to identify actions they had taken, or would like to take, to address these trends. Finally, stakeholder groups reflected on aspects of their involvement in RSI about which they were most proud and also most sorry.
- **Future scenarios.** Participants worked in multistakeholder groups to develop and present shared visions of where they would like to be in relation to the prevention and treatment of RSIs in the next 10 years. Then, participants worked in small groups to identify common themes in the “future scenarios,” suggesting possible projects to achieve the visions. Groups then integrated their ideas into an amalgamated list of “common themes,” “potential projects,” and “unresolved differences.”
- **Reality check and action planning.** On the final day, participants reviewed and clarified common themes and then formed action groups based on the themes. Action groups met, developed initial action plans, and reported back to the full group.
Research Design

Qualitative research methods were used to explore the richness of the social interactions and interpretations at play in Future Search. There were three stages to the qualitative data collection: preconference, conference, and postconference (see Table 2).

Design team meetings, large group conference sessions, and follow-up meetings and interviews were audio- or videotaped. Tapes then were transcribed, verbatim at first and then selectively according to emerging themes. Interview questions were designed to probe participants’ views about the process and outcomes of the conference. A postconference survey exploring various dimensions of satisfaction was sent to all participants. Thirteen follow-up interviews were conducted over the telephone and lasted between 30 minutes and an hour (see guide in Appendix A). Interview participants were purposively sampled to ensure a diversity of background (gender, age, stakeholder affiliation), level of participation (design team members and nonteam members), and attitudes toward RSI. Separate postconference evaluative discussions were held with the design team and the conference facilitators.

A particular qualitative research approach, grounded theory, was used. This approach has been used to build theory about the ways that individuals and groups act and interact in response to particular social phenomena or conditions (Strauss & Corbin, 1990). Typed transcripts were imported into and analyzed on NUD-IST computer software (QSR NUD-IST Revision 3 User Guide, 1996). In total, 26 documents were analyzed (see list in Appendix B). Text was coded according to emerging catego-

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### TABLE 1

<table>
<thead>
<tr>
<th>Summary of Future Search Conference Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 1, p.m.</strong></td>
</tr>
<tr>
<td>Focus on the past</td>
</tr>
<tr>
<td><strong>Day 2, a.m.</strong></td>
</tr>
<tr>
<td>Create large-group “mind map” of trends currently impacting on RSI</td>
</tr>
<tr>
<td><strong>Day 2, p.m.</strong></td>
</tr>
<tr>
<td>Create stakeholder mind map of trends, actual and desired actions</td>
</tr>
<tr>
<td>Stakeholders identify “prouds and sorries” (what they are most proud and sorry about in relation to their involvement in the issue)</td>
</tr>
<tr>
<td><strong>Day 3, a.m.</strong></td>
</tr>
<tr>
<td>Check/affirm common ground and themes in large groups</td>
</tr>
<tr>
<td>Develop action plans in small groups</td>
</tr>
<tr>
<td>Conference closing</td>
</tr>
</tbody>
</table>

**NOTE:** RSI = repetitive strain injuries.
ries and subcategories (open coding). Each category was reanalyzed and recoded according to underlying common or conflicting perceptions, beliefs, and assumptions (axial coding). A third iteration of coding (selective coding) was carried out to identify the underlying story or “core category” of the Future Search process. Finally, a set of emerging propositions were generated (i.e., the relationship between factors and outcomes) and assessed based on the data available.

RESULTS

Assessing the Achievements of the Future Search Conference

The survey was completed by 28 participants (50% response rate). Between the survey, interviews, and focus groups, the views of 43 of 56 participants (77%) were explored.

The survey reveals a relatively high level of satisfaction with the conference, with some variation in satisfaction with different conference sessions (see Figure 1).

The textual data provided two kinds of information: a direct reflection on participant perceptions of the process and outcomes of the Future Search process (e.g., common ground, actions, and process) and also a picture of how discussion of the topic at hand evolved before, during, and after the Future Search conference (see Table 3 for a list of categories).

Extent of Common Ground Achieved

Many participants felt that quite a wide area of common ground was reached. Of survey respondents, 82% were at least “somewhat satisfied” with the extent to which the conference achieved its objective of building common ground on RSI.

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**TABLE 2**

<table>
<thead>
<tr>
<th>Stages of Qualitative Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preconference</strong></td>
</tr>
<tr>
<td>Literature search and key informant interviews on Future Search and RSI</td>
</tr>
<tr>
<td>Collection of planning documents (correspondence, meeting notes, documents)</td>
</tr>
<tr>
<td>Audiotape and/or videotape of design team meetings</td>
</tr>
<tr>
<td>Personal field notes (based on telephone calls, discussion, self-reflection, etc.)</td>
</tr>
<tr>
<td><strong>Conference</strong></td>
</tr>
<tr>
<td>Single camera videotaping</td>
</tr>
<tr>
<td>Audiotaping of all reports to the large group and all full group (plenary) discussions</td>
</tr>
<tr>
<td>Participant and facilitator recording on conference flip charts</td>
</tr>
<tr>
<td>Personal field notes</td>
</tr>
<tr>
<td><strong>Postconference</strong></td>
</tr>
<tr>
<td>Participant survey</td>
</tr>
<tr>
<td>Audiotaping of follow-up meetings</td>
</tr>
<tr>
<td>Audiotaping of 13 individual interviews with participants</td>
</tr>
<tr>
<td>Personal field notes</td>
</tr>
</tbody>
</table>

**NOTE:** RSI = repetitive strain injuries.
FIGURE 1: Postconference Survey Results
Analysis of conference materials indicates that there was a shared and public acceptance that (a) RSI is a “real” concern for many and is having a serious impact both on people’s lives and on economic costs, (b) RSI is complex and caused by several factors including individual behavior and conditions in the workplace, (c) all stakeholders need to work together to prevent and treat RSI through a systematic approach, and (d) further research is needed to identify and disseminate best prevention practices and treatments.

One participant suggested that there was a “recognition that many people desired a similar future.” Another said, “There is overall agreement that RSI is a serious problem and that we need to do something about it. There are different ideas about how to do it.” And a compensation board employee stated, “Nobody thinks [RSIs] don’t exist. Nobody thinks you shouldn’t prevent them. Nobody thinks that they don’t have huge impacts on people’s personal lives and work lives and cost a ton of money for employers and government and the [Compensation Board].” And finally, a union representative said, “I didn’t hear at the end of the day an awful lot of skepticism as to whether people have real pain or whether this is a real issue. . . . So, I think that was good.”

There was agreement that a range of actions is needed to prevent and treat RSI effectively, including (a) the identification and transfer of best practices in prevention, diagnosis, and treatment, and the establishment of the economic benefits of taking action to prevent RSI; (b) raising awareness through education and training based on what is known about the nature, scope, and effects of RSI; (c) promotion of a multistakeholder process through which all parties have input into solutions and accept shared responsibility for the problem, and (d) the provision of appropriate incentives for action, although this meant very different things for different people.

On the other hand, there were clear limits to common ground; both explicit and implicit areas of disagreement existed. There were four main contested or unresolved questions:

**Legislated standards or voluntary actions?** The most explicit debate was about whether new government laws and standards are needed to force employers to provide decent ergonomic conditions in their workplaces or whether economic incentives are enough to encourage voluntary action by employers (categories 1.3 and 2.4 from Table 3). Opponents to ergonomic regulations suggested that in the jurisdictions in which ergonomic regulations have been applied, there is no evidence that they have been effective in reducing RSIs, that trying to apply blanket standards to a variety of workplaces would stifle creative approaches, and that companies already taking action on the issue would be unfairly penalized. It also was suggested that there is a lack of knowledge and that regulations should not be developed until RSI has been better understood. In the end, an action group was formed to advocate for harmonized ergonomic regulations across Canada despite the opposition of a number of conference participants.

**Do we know enough to act?** A second explicit debate revolved around the definition and diagnosis of RSI and whether action could proceed before there was a better understanding of just what RSI is (categories 1.4 and 2.3). One physician initiated a debate as to whether a more concrete and shared definition of RSI was indeed a prerequisite to action. A number of people said that the definition must come first. “There is a frustration in the business community. How can you prevent RSI if you don’t know what it is?” said one employer. And, according to a physician, “A common definition and terminology is a prerequisite to the plans of most of the other action groups.” Others (injured workers, a workers’ compensation employee, a health and safety manager) felt that such a discussion was unre-
<table>
<thead>
<tr>
<th>Coding Stage</th>
<th>Category</th>
<th>Description of Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Open coding (emerging categories and subcategories)</td>
<td>1.1 Experiences of RSI</td>
<td>Trends in prevalence of RSI</td>
</tr>
<tr>
<td></td>
<td>1.2 Etiology</td>
<td>Work and nonwork causes of RSI</td>
</tr>
<tr>
<td></td>
<td>1.3 Prevention</td>
<td>Strategies to respond to RSI (e.g., legislation, workstation design, education, training, bargaining)</td>
</tr>
<tr>
<td></td>
<td>1.4 Diagnosis</td>
<td>Definition, diagnosis, existence of RSI</td>
</tr>
<tr>
<td></td>
<td>1.5 Treatment</td>
<td>Access, impact, and right to treatment</td>
</tr>
<tr>
<td></td>
<td>1.6 Nature of work</td>
<td>Improvement and deterioration of characteristics of work (e.g., pace, hours, flexibility)</td>
</tr>
<tr>
<td></td>
<td>1.7 Technology change</td>
<td>Automation, computer use, electronic monitoring</td>
</tr>
<tr>
<td></td>
<td>1.8 Economic aspects</td>
<td>Impact of globalization on conditions of work</td>
</tr>
<tr>
<td></td>
<td>1.9 Political context</td>
<td>Labor-management relations, fiscal and compensation policy</td>
</tr>
<tr>
<td></td>
<td>1.10 Ideology-culture</td>
<td>Rights and expectations of workers with respect to injuries, knowledge of RSI, power in the workplace</td>
</tr>
<tr>
<td></td>
<td>1.11 Future Search process</td>
<td>Stages, sessions, process of Future Search</td>
</tr>
<tr>
<td></td>
<td>1.12 Evaluation</td>
<td>Participant perceptions of process and outcomes</td>
</tr>
<tr>
<td></td>
<td>1.13 Ripples</td>
<td>Indirect impacts of conference</td>
</tr>
<tr>
<td>2. Axial coding (underlying common and conflicting perceptions, beliefs, and assumptions)</td>
<td>2.1 Social relations and interests</td>
<td>Conflict versus consensus models of worker-employer relations</td>
</tr>
<tr>
<td></td>
<td>2.2 Values</td>
<td>Debates about worker right to high quality of work, worker responsibility, right to treatment</td>
</tr>
<tr>
<td></td>
<td>2.3 Knowledge</td>
<td>Role of knowledge in change, criteria of “good” knowledge</td>
</tr>
<tr>
<td></td>
<td>2.4 Nature of social change</td>
<td>Role of education versus advocacy in social change</td>
</tr>
<tr>
<td></td>
<td>2.5 Common ground</td>
<td>Factors that influenced way in which common ground was reached (e.g., lack of time, facilitation, participant characteristics)</td>
</tr>
<tr>
<td></td>
<td>2.6 Joint action</td>
<td>Factors influencing commitment to and follow-through on action plans (e.g., expectations, resources, mandate)</td>
</tr>
<tr>
<td>3. Selective coding (underlying story)</td>
<td>3.1 Design team invitations</td>
<td>Way that design team members were identified and selected</td>
</tr>
<tr>
<td></td>
<td>3.2 Design team members</td>
<td>Overall composition and personal characteristics of team</td>
</tr>
<tr>
<td></td>
<td>3.3 Design team process</td>
<td>Key decisions of team (e.g., conference focus, agenda, participants)</td>
</tr>
<tr>
<td></td>
<td>3.4 Conference attendees</td>
<td>Overall composition and personal characteristics of conference participants</td>
</tr>
<tr>
<td></td>
<td>3.5 Conference process</td>
<td>Key decisions at conference (e.g., common ground, actions)</td>
</tr>
</tbody>
</table>

NOTE: RSI = repetitive strain injuries.
solvable and would hold up action unnecessarily. “We want to prevent [RSI] regardless of the definition,” stated a health and safety educator and researcher.

*The relationship between productivity and worker health.* Underlying the above explicit debates were more implicit differences (category 2.1). First, there were two competing views about the impacts of free trade and flows of international capital. One was that increased competition associated with globalization is forcing companies to take health and safety seriously and is generating the wealth needed to meet the health needs of workers. The other view was that increased competition is intensifying the demands on workers (increased pace, increased hours) and leading employers to cut costs by limiting investments in health and safety such as by contracting out unhealthy jobs.

*Right to pain-free work.* Second, there was agreement that RSI can be caused by both work and nonwork activities (because activities are sometimes common to both realms) but there was little agreement on the extent to which RSI is caused by work and nonwork factors. This was linked to underlying differences about what or who was responsible for these injuries and the extent to which workers should be entitled to work pain free, as opposed to considering pain a normal part of work (categories 1.2 and 2.2).

In sum, participants made efforts to build a consensus view of the RSI issue; however, significant divergences in views of the nature of, and solution to, the problem persisted. Indeed, the so-called common ground response to RSI rested on contentious assumptions. On one hand, participants called for the identification, promotion, and voluntary adoption by employers of best practices that are assumed both to reduce RSI and to increase productivity. On the other hand, the relationship between employee health and productivity, the likelihood of voluntary employer action, and even the very definition of RSI all were seriously contested by participants (see Polanyi, in press).

**Stimulation of Action**

The conference was funded largely by the Institute for Work & Health (IWH). However, it was made clear at the conference that IWH was not in a position to coordinate or fund the action plans generated. This came as a surprise to some participants. Nevertheless, a number of participants volunteered to “champion” actions, and nine action groups were formed. These groups undertook a variety of actions during the 9 months following the conference (Table 4). Four groups (follow-up planning, ergonomic regulations, best practices, and power/worker participation) were active throughout the postconference period, one was moderately active (treatment), and three were essentially inactive (definition, health and productivity, and education).

*Types of actions taken.* Four kinds of action can be identified: presentations and exchange of information, networking or mutual support, new projects and initiatives, and broader organizational changes (category 1.11, 1.12).

First, the conference generated information exchange and educational activity. More than 10 presentations and articles (often involving a variety of stakeholders) were made to a range of audiences (ergonomists and health and safety practitioners, clinicians, psychologists, labor representatives, organizational Consultants, and compensation officials). In addition, a computer-based discussion group on RSI in Ontario was formed.
<table>
<thead>
<tr>
<th>Action Group</th>
<th>Planned Action</th>
<th>Actual Action</th>
<th>Barrier to Action</th>
<th>Level of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multistakeholder process planning</td>
<td>Circulate evaluation and action plans to participants</td>
<td>Set up e-mail discussion list on RSI; made several presentations on conference</td>
<td>Most active group</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Form planning committee to facilitate implementation of action plans and to plan follow-up meeting</td>
<td>Planned and held a follow-up multistakeholder conference</td>
<td>Difficulty involving decision makers, employers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify participants and organizations for future involvement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ergonomic regulations/legislation</td>
<td>Lobby for regulations</td>
<td>Letter sent to legislator group (that indicated it was not moving ahead with regulations) Larger meeting held with key stakeholders Some members went on to organize labor conference on RSI Focus evolved from advocacy to information gathering</td>
<td>Group moved quickly Most controversial action group Encountered strong business opposition to regulations</td>
<td>High</td>
</tr>
<tr>
<td>Best practices</td>
<td>Send best practices literature to group Definition and scope of best practices Develop mechanism for screening and evaluation</td>
<td>Reviewed materials produced by compensation board Assisted with discussion of best practices Helped launch multistakeholder project to benchmark RSI best practices Four articles written</td>
<td>Able to link with active group Timing not good—needed to wait for compensation board to set its own priorities</td>
<td>High</td>
</tr>
<tr>
<td>Power/worker participation</td>
<td>Share information on power issues/cooperation/worker involvement Develop inventory of actions to promote worker involvement</td>
<td>Workshops on worker participation and RSI designed and delivered at three government departments Four articles written</td>
<td>Need for more “voices from industry” Group disappointed with lack of employer involvement</td>
<td>Active</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group members helped launch participatory research project with injured workers</td>
<td>Frustration about lack of follow-through on commitments by some group members</td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>Determine feasibility for the development of guidelines for effective treatments</td>
<td>Discussed and agreed on three potential research projects based on the available contacts and resources of group members</td>
<td>Intended to apply for funding to the WSIB for one proposed project, but due (mostly) to time constraints; not able to prepare proposal in time</td>
<td></td>
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<td>-----------</td>
<td>---------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Determine current practices and research findings regarding early recognition and intervention of RSI symptoms</td>
<td>Set up Web site on which to post a catalogue on available treatments</td>
<td>Time constraints of members Communication hard to group members not on e-mail</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>Develop a definition and common terminology</td>
<td>Champion worked mostly on his own, pledging to write up group’s position and send it in (not done)</td>
<td>Champion indicated that without some compensation, doctors are reluctant to be involved Apparently group did not meet Hard to agree on indirect costs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gather existing information to build case on links between worker health and company productivity Contact existing groups</td>
<td>Initiated literature review on cost of RSI</td>
<td>Group champion working in two jobs, everyone “very busy”</td>
<td></td>
</tr>
<tr>
<td>Small business/health and productivity</td>
<td>Education</td>
<td>Accumulate information on existing education projects</td>
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</tr>
</tbody>
</table>
Second, while networking often is stimulated at conferences, both the level and scope of cooperation and the fact that cooperation extended across stakeholder lines is of note here. Participants made contacts with people they felt they would not otherwise have met. There was cooperation of various kinds: an employer received support from a government office for injured workers, a consultant sought the participation of injured workers in a course he was teaching, a doctor wrote a letter on behalf of an injured worker, and a researcher and a compensation board employee made a joint presentation to the compensation board.

Third, some new initiatives were launched as a result of connections made and ideas discussed at the conference. For example, a project to involve injured workers as researchers on compensation and return-to-work issues was submitted to and subsequently funded for 2 years by the Workplace Safety & Insurance Board of Ontario (WSIB). Another project to allow a multistakeholder group to visit workplaces successfully dealing with RSI risk factors was also developed.

Finally, the conference fed into various organizational decisions. For example, following the conference, a Future Search–style process was proposed on the issue of occupational disease by the WSIB, with Institute for Work & Health as the sponsor. The Future Search process also fed into existing decisions that were being made in a number of areas: the development of best practices criteria at the WSIB, influencing the content of a major research proposal on RSI, and a shift toward a more interactive stakeholder relationship by the research organization sponsoring the conference.

Factors Affecting Action

A range of factors affected the extent to which action plans were implemented (category 2.6). One key limitation to the fulfillment of action plans cited by participants during postconference meetings and discussions was a lack of time to participate in action groups. Indeed, some action-group leaders and group members were facing heavy and competing work demands.

The more “active” groups all had champions who were highly motivated and involved, perhaps because the goals of their action groups dovetailed with their own personal, professional, or work-related responsibilities. For example, the best practices group had a champion who already was working on a project of identifying and disseminating best practices for prevention in her work at the compensation board. On the other hand, both the education group and the health and productivity group had champions whose job responsibilities were quite far from their action-plan responsibilities. Other forms of staff support therefore were important: the follow-up planning group secured funding for a part-time coordinator, which made the follow-up conference possible.

The goals of the more active groups also tended to be specific, limited, and directly achievable. For example, the ergonomic regulations group, the best practices group, and the multistakeholder group each had quite specific activities outlined, whereas the plans of the education group and health and productivity groups were developed only
to the extent of scoping out current activities in their respective areas. Oels (2000) came to a similar conclusion.

Other Key Impacts

Other impacts of the Future Search process included increased participation, participant learning, and enhanced multistakeholder cooperation (categories 1.11, 1.12, and 1.13).

Participation and inclusivity. The Future Search process provided an opportunity for direct interaction among all stakeholders on the issue of RSI. To participants, just getting all the players in the same room for 3 days on such a contentious issue was a major accomplishment. The main weakness in this regard was the underrepresentation of business (only three participants out of the desired eight) and, to a lesser extent, of labor, designers/engineers, and government (five or six in each group). Furthermore, diversity was less than hoped for: visible minorities, young and old people, and rural areas were underrepresented.

Conference participants were impressed by the quality of contact at the conference. One injured worker came to the conference “expecting to have to fight to have her voice heard.” She said she was shocked within the first hour of the conference to find a businessman taking her RSI seriously and encouraging her to be the reporter for their small group. Another injured worker appreciated that people came together “on an equal footing, with no titles.” And an injured worker advocate said, “What was really good was that everybody had equal say and equal weight.” (See Polanyi, 2000, for further discussion of participation issues.)

Participant learning. Participants emphasized that they learned a lot, not so much in terms of new information but in terms of understanding the way that RSI is perceived and experienced by others. According to a researcher, “[Did I] learn anything that I could put in a paper? No. But, in terms of people’s perceptions and how people go about it, for sure.”

Participants became more aware of the immediate human impact of RSI and overcame some stereotypes they held about the positions of others. A compensation board employee stated, “I discovered prejudice in my own views about RSI...I’ve grown distant from [the lives of people that have RSI]...so that hit home having the injured workers in and amongst us.” An employer said, “I wasn’t nearly as aware as I am now of the concerns of the actual injured workers themselves, and how they feel alienated. And I certainly can see why when you hear the experiences they’ve gone through.” An injured worker advocate suggested that workers learned, too; “I think a lot of people who have been worker reps think that the employer just wants to deny the claim. We actually met people who were quite a bit different from that.”

This did not mean that there was a great change in views or positions. Indeed, some participants were disappointed that a number of people came in with a fixed agenda and weren’t open to changing their views. One design team member said that some
came with “a single note to play” and were “not interested in moving from their position to anywhere else.”

Still, participants developed a broader perspective on RSI and a better sense of how members of different stakeholder groups perceived and experienced the issue, even if their specific beliefs did not change. “[Participants] came out with the realization that we all have different perspectives,” commented a compensation board employee. “Some knew this already. Others didn’t—it was an eye-opener for them, which was good.” According to one union representative, “I’m not sure that . . . ideas changed on RSI as much as maybe tolerance for other stakeholders.” An ergonomist said, “People went away with their opinions intact. . . . But, I think they listened and heard what was said.”

One physician summed it up well.

As your role starts changing in life and you start moving away from the grassroots . . . you start having a more narrow focus. . . . What the conference did for me was bring me back to how people are feeling . . . which is where I came from a long time ago. . . . Each of us has different thoughts on [the problem] and I don’t think that is wrong. . . . But, to get everybody together and say “Okay. Here are the issues we can agree on,” is so important. . . . For me it brought me back to earth.

*Increase in potential for multistakeholder collaboration.* There is some indication of change in participants’ openness to multistakeholder action as a means to address the issue of RSI. The most striking example of this was the shift in attitude of labor participants. Labor representatives threatened to boycott the conference when they learned that the event was cosponsored by what they perceived to be a business-aligned safety association. Even after the conference, one labor representative said she attended only reluctantly and that she probably would not participate if she had to do it all over again. By the follow-up conference, however, this same person was arguing for the attendance of three of her organization’s ergonomists, and her union even agreed to kick in some funds to be spent on the conference on the condition that other stakeholders—including employers!—did too.

The increased openness to multistakeholder cooperation also was evidenced by the shift in the nature of the most contentious action group, the one on ergonomic regulations. After the follow-up conference—where there again was disagreement about the need for ergonomic regulations—the group’s action plan became more exploratory and collaborative in nature: collecting information on the experiences of ergonomic regulations in other jurisdictions and seeking to build partnerships in a discussion of ergonomic regulations.

There were limits to success in building cross-stakeholder collaboration. While labor representatives did participate in a number of mixed action groups at the follow-up conference, they also formed their own “labor initiative” on RSI. Furthermore, business not only did not participate to any great degree at either conference, but elements of that community mobilized against the provision of funds to continue the process after the follow-up conference, suggesting that the process was “dominated by labor,” and that noncommon-ground actions were being pursued. Securing adequate employer participation has remained an ongoing challenge throughout the process.
DISCUSSION

Weaknesses and Limitations of Future Search

The Future Search process went some distance in building common ground and action and multistakeholder capacity on the difficult issue of repetitive strain injuries. However, a number of limitations in the Future Search process also were identified.

Participants were unsure of what to expect. Participants wanted to more clearly understand, in advance of the conference, the process and what was expected of them. While the invitation letter did make it clear that the goal was to come up with action by participants, apparently this was not fully grasped. One participant commented, “I am of the opinion that expectations of participants should have been outlined from the outset [along with] possible future commitment[s]… if it was outlined somewhere I certainly didn’t see it.” And another, “I would have preferred to know ahead of time how the conference was to be run.”

Participants were particularly surprised to learn that they were expected to commit to being involved in action plans after the conference. A participant wrote, “I felt as though the final projects were forced on us without full explanation and/or warning and placed many of us in a difficult situation.”

A design team member reported,

One of the people in my group… said, “I didn’t know that [by] coming here I had to commit to doing stuff afterwards. And my boss didn’t know that. So, if I had known that, I [may have] asked the question whether I would have been the best person to be here. I might not have been.”

And another,

I am not sure how much people understood that they were now supposed to commit, and some people were frustrated: “What do you mean—now I got to do more?? I came here for 3 days and we didn’t accomplish anything, and now you want me to go to more meetings!”

Unclear criteria for common ground and action. Participants expressed frustration with the process used to review the common themes and develop goals and action plans (over 40% of survey respondents were less than “somewhat satisfied” with this “reality checking” session). This was the most difficult part of the conference; as a large group, participants got bogged down in a debate over goals, objectives, and strategies, and were able to stake out only very limited common terrain.

Participants had difficulty visualizing and integrating the list of many common themes and projects that were pasted on a large flip-chart board (a concern also raised by Bailey and Dupré, 1992). Later, a number of people suggested the need for a smaller group to work through and organize the many common themes and projects and therefore present a more manageable and prioritized list to the large group session. (This is sometimes part of the Future Search process, but the design team’s decision to finish by lunchtime on the third day limited this work).

There was confusion about the purpose of this closing session and a sense that the expectations for the discussion of common themes were not clear. The “real purpose”
of this session, according to one of the facilitators, was, “What do you want to take action on? What are you committed to?” However, there was a sense of floundering that some attributed to the lack of direction from the facilitators.

The group was impatient to move on to action (or perhaps simply to get past the frustration of this exercise). The facilitators stressed the need for everyone to be clear about what common ground existed (and what was still unresolved) because action without clear common ground could be problematic—and it was. Action plans on so-called common ground items were challenged because they were not based on areas of agreement. Some felt that two action plans in particular (advocacy for uniform national ergonomic regulations, and to a lesser extent, the search for a shared definition of RSI) related to “unresolved differences” and therefore should not be the basis for action. This was in part the result of moving on to selecting action plans without having adequately clarified the common themes and projects and unresolved differences. One of the facilitators said, “Technically, we probably [should] have spent some time clarifying the projects and the differences, but we had already pushed it long enough and needed to move on into action.” Indeed, time was running out and people’s energy and attention were waning, so there was a need to continue. However, the resulting distress and discord about the legitimacy of action—on ergonomic regulations in particular—suggests that the move into action was premature.

While almost 80% of survey respondents were at least somewhat satisfied with the process for arriving at action plans, there was some dissatisfaction with the “open space” method of deciding on action plans, which allowed any individual to volunteer to champion any action listed on the board.

Also, after the conference, a health and safety manager criticized the process. Up until that point, every single [small] group was one person from this [stakeholder] group, one person from that. For the action plans, it was: “Do whatever you want, come back and tell us what you’re going to do.” You weren’t grouped with one [person] from each [stakeholder group] to try to build a common understanding of an action plan . . . if they had done that, perhaps there might have been more consensus on the action items and maybe more support for some of the action plans.

An ergonomist said, “People chose what they wanted, but there were others still up there. They may not have been the important ones that were chosen. What to do with the ones left over?” A design team member agreed. “It’s a shame because there were good ideas that didn’t even make it into the action plan that would have been agreed upon.”

At the core, there was a lack of clarity as to how the group should establish common ground areas and the extent to which actions should be limited to consensus areas. On one hand, participants were told that they had the right to ask that unresolved issues or proposals be set aside and not be acted on; on the other hand, it was implied that participants were free to run with any issue about which they were passionate. This created confusion, anger, and frustration. Morley and Trist (1981) reported a similar dynamic in their search conference on day care.

Lack of resources and authority for action. The problem of structure (Baldwin, 1995) and resources (Campbell, 1988; Oels, 2000) for follow-up arises in other Future
Search studies. In this case, participants cited the lack of explicit supports for implementing the action plans as a barrier to action. One compensation board employee said,

My overall impression [of the conference] was shock at the very end that there wasn’t a group or person or government body responsible for carrying on with the things that came out. It was put on the shoulders of people at the conference, voluntarily, but you feel an obligation to carry on.

The major sponsor of the conference was not in a position to provide the level of resources that the group sought.

If there would have been a framework or structure to be able to plug actionable items into... to follow through with the process... [T]hat’s where I think it would take some deeper pockets like the WSIB.

Or: “You really needed higher-level decision makers, ones with the power to direct finances and staff future projects.”

A lot of work was done to try to get such decision makers, but in the words of one design team member,

for a lot of people, they weren’t sure how this would fly. When you are not sure what the temperature of the water is, you don’t like jumping in... Now, after the fact, I had a lot of people saying, “Hey, I hear it was excellent.”

The question was raised about what authority or mandate the action groups actually had to take action. This issue came up in a concrete way when the ergonomic regulation group wanted to take action on a nonconsensus item. But, it was also present in the background more generally. “Once... it sunk in... ‘Okay, I am going to move forward on this’... then there is the issue of how you are going to move forward, under what auspices or authority are you going to move forward?” wondered an ergonomist. Another participant, a health professional, was concerned about the lack of representativeness of the action groups.

We [the treatment action group members] were not even representative. Other professionals—chiropractors—needed to be there. We can’t speak for all... [Two] of them [in the diagnosis group] are going to do the diagnosis thing. They can’t decide that and make recommendations on that!

She wondered, “Who is going to support this? None of us has the power. We are the little guys on the totem pole and can’t say ‘Okay. Here is the way things are going to be done with treatment.’”

The iterative process of action research (and Future Search) became important here: One of the goals of a follow-up action group was to broaden and strengthen stakeholder group support and involvement in the process.

Lack of time. Lack of time is a concern in Future Search (Baldwin, 1995) and search conferences (Morley & Trist, 1981). In this case, some participants felt that too much time was spent on the earlier part of the conference (time lines, mind maps, future sce-
narios) and not enough was left for action planning. However, there was one thing that some participants wished had been added to the earlier part of the agenda: an opportunity to hear more about current action and knowledge of RSI (particularly from the many experts in the room). According to one design team member,

Yes, people got to ask questions. Yes, people got to say things. But the one thing I found very interesting was that you have all these experts in the room . . . and we never really heard what their perspective on RSI was. We didn’t really tap that knowledge . . . . There were some people there that have huge amounts of experience, success, all those kinds of things, and unless you talked to them socially or on specific topics, you really didn’t know where that person was coming from.

This is not part of the usual Future Search agenda. Rather, an awareness of views and knowledge are expected to come out in the review of the past and identification of present trends. However, the ideas generated were not sufficiently focused, in-depth, or comprehensive for a number of participants.

Another effect of the lack of time at the end of the conference was a lack of detail in action plans. In the words of one research stakeholder,

[I]t would have been nice to have known exactly what [the action plan’s] objective strategy was going to be . . . whether it was deliverable, how we would know if we had made a difference. But, that would have come with more time. It’s really tough to create that business plan in the short time we actually ended up having.

Designers of Future Search often indicate that the up-front work before the action planning is crucial in breaking down barriers and getting people to listen to one another and work effectively together. This may be the case, but there still was great frustration with the action planning process.

Study Strengths and Limitations

This article has explored participant experiences of a Future Search conference on a contentious issue. A main strength of the study is that a range of data has been collected and carefully analyzed. Moreover, a significant effort was made to carefully and faithfully implement the Future Search model using the skills of experienced Future Search facilitators. Finally, the issue at hand, RSI, has characteristics similar to other controversial and complex social problems. Still, it remains a significant challenge to critically and rigorously assess the process and outcomes of Future Search without turning the whole process into a sterile experiment. In part, the limitations of this study reflect this. As a case study, this evaluation lacks a comparison group to explore how Future Search stands up against other—more or less traditional—planning and change processes. Researchers are starting to address this limitation by studying more than one Future Search or search conference at once (Granata, 2001; Oels, 2000) or by utilizing a comparison group (Strong et al., 2001). The second, perhaps fundamental challenge in this research was the balancing of roles that I had to engage in, being both the initiator and champion of the process and the primary assessor of it. These roles were not always complementary; at times, I felt I was doing neither adequately. Finally, conducting rigorous research on participants while not turning them into subjects (rather
than agents of a change process) is a major challenge. All told, the findings of this study should be taken as initial indications of dimensions of Future Search and need to be explored by further research.

That said, this study does suggest that the Future Search process has the potential to build a broadly based area of common ground by bringing together a diverse group of players. Here, Future Search set the scene for a common dialogue between people who inhabit different circles and, for all intents and purposes, speak different languages. It helped people let down their guard and temporarily lower the barriers that are put up between “us” and “them,” whether those barriers be fancy terminology, credentials and expertise, or scientific or nonscientific dogma. It allowed people to be themselves rather than playing out roles.

The process provided a space that allowed for the articulation and acceptance of a much wider range of different perspectives and kinds of claims (personal experiences, values and beliefs, and observational data) than is normal at most conferences. It also stimulated various kinds of action. Successful implementation of action plans seemed to depend on the availability of sufficient resources to support the action, sufficient decision-making authority to carry them through, and group leaders whose mandates can encompass the actions proposed.

However, the impact of Future Search was not limited to the implementation of action plans developed at the conference. Getting people face to face with others they have not met led to other direct and indirect impacts, such as networking and information sharing on the issue, and developing presentations, proposals, and projects by various groupings of participants. Perhaps most important, the Future Search built commitment to, and the perceived legitimacy of, a multistakeholder process of dialogue, planning, and action that is inclusive, future-oriented, and common ground–based.

There may be hidden costs associated with Future Search. The common ground identified focused on issues of education and assumed a consensus view of the issue; important conflicts and differing assumptions were left aside. By focusing on the “easy” common ground, there is a danger that Future Search may lead to a very limited area of common ground and that the resulting actions may be of marginal importance. Real differences in analysis that exist and persist may be given too little attention and may later rear up and threaten the multistakeholder process (see Polanyi, 2000).

This case underlines some of the key design challenges of Future Search: getting the participation of powerful groups, and of those who are marginalized; establishing a clear domain of common ground in the final-day “reality checking” session; working to ensure a balance of participation at the conference; making sure that participants are clear about what is expected of them, particularly in terms of follow-up actions; and ensuring that a clear framework for supporting follow-up action is articulated and in place before the event happens.

Building a shared understanding and achieving multistakeholder action on complex issues constitutes a major challenge. Yet, it is crucially important in today’s increasingly polarized societies. Future Search takes us an important step toward informed, democratic, and reflective action. We need to better understand this and other large group change processes so that we can be aware of their potential limitations while building on the significant contribution they can make.
APPENDIX A

Interview Guide

| Overall impressions | What were your overall impressions about the conference? |
| Overall impressions | What struck you about the conference? |
| Outcomes | What do you think the conference accomplished? |
| Shared understanding | Was a shared understanding of RSI developed? |
| Action plans | What was your impression of the action plans? |
| Changes | Did you see any changes as the conference progressed? |
| Changes | Did you learn anything? |
| Changes | Did you see others’ views or opinions changing? |
| Voice | Who were the most influential groups or individuals? |
| Voice | Which groups or individuals were not heard? |
| Suggestions | What would you like to see happen now? |
| Suggestions | Is there anything that should have been done differently? |

APPENDIX B

Online Documents Analyzed on NUD-IST

<table>
<thead>
<tr>
<th>Type of Document</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Conference flip charts</td>
<td>3</td>
</tr>
<tr>
<td>Notes from conference videos</td>
<td>2</td>
</tr>
<tr>
<td>Researcher field conference videos</td>
<td>2</td>
</tr>
<tr>
<td>Written survey—open-ended questions</td>
<td>1</td>
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<tr>
<td>Facilitator focus group</td>
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<tr>
<td>Design team focus</td>
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<tr>
<td>Individual interviews</td>
<td>13</td>
</tr>
<tr>
<td>Follow-up planning group meetings</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTE

1. Seventy-two people, including 33 of the 56 who attended the Future Search conference, attended a 2-day follow-up conference to report back on progress on action plans and to build commitment, and, where necessary, to redefine action.

REFERENCES


Needs and Outcomes in an Executive Development Program

A Matter of Perspective

Paul Bernthal
Kevin Cook
Audrey Smith
Development Dimensions International

The processes and outcomes associated with an executive assessment program for development were evaluated in a field setting. Data concerning the activities of 104 executive-level managers were drawn from three sources: program participants, development team leaders, and professional assessors. Factors affecting program processes and outcomes were grouped into two classes, personal and situational. Development activity and outcomes showed positive relationships to several personal factors, especially motivation, self-efficacy, and preference for intrinsic incentives. Development activity also showed positive relationships to situational factors, especially interpersonal support. Additional analyses examined how rater perspective affected measures of development and how different operationalizations of development might alter conclusions. Implications for promoting the success of an executive assessment and development program were discussed.

In the past decade, the focus on employee development and retention has increased in most organizations. Evidence of this trend can be seen in the proliferation of develop-
mentally oriented human resources issues such as leveraging intellectual capital (Quinn, Anderson, & Finkelstein, 1996), managing creativity (Krohe, 1996), and learning organizations (Watkins & Marsick, 1996). In response to shifting emphases, some of the more traditional industrial/organizational psychology tools have found expanded application and a renewed level of interest. Specifically, assessment centers (e.g., Boehm, 1985; Howard, 1992; Spychalski, Quinones, Gaugler, & Pohley, 1997; Thornton, 1992) and multisource appraisal tools (e.g., Ramano, 1994; Van Velsor & Wall, 1992) now include a strong employee development component, beyond pure selection/promotion. The clear elucidation of strengths and weaknesses resulting from an in-depth assessment provides a unique and compelling level of direction for subsequent development activity (see Hellervik, Hazucha, & Schneider, 1990; Mitchell, 1993).

Although assessment linked to development is not a new idea, the combined process of assessment feedback and development activity has not been adequately researched (Kudisch & Ladd, 1997; Thornton, 1992). Most research has been limited to cross-sectional surveys, self-report measures, training interventions, and nonmanagement or low-level management populations. Published field studies of actual organizational development programs conducted over time are rare. This study examines a structured development program applied to an executive population after participation in an assessment center. Measures include multisource assessments of person factors, situational factors, development activity, and performance outcomes.

Nature of Development Activity

Most existing studies have measured developmental activity in terms of the frequency (e.g., number of days or hours spent in development or training, number of activities) or breadth (e.g., diversity of activity) of participation. Usually, cross-sectional samples of employees are asked to estimate the number of hours spent participating in workshops or some other organized activity. These participation rates then are linked to various situational or individual factors that might influence the development process. Although objective participation records have been used, Noe and Wilk (1991) point out that they are not necessarily reliable sources for measuring past participation in development activities. The challenges facing the continued measurement of development activity can be classified into two areas.

First, the scope of development activity has expanded beyond easily isolated, company-sponsored events. Organizations have begun to emphasize alternative forms of development (e.g., "shadowing," Internet access) instead of formal development activities separated from daily work. The new philosophy recognizes that any activity can develop an employee’s skill base if the activity remedies a skill or knowledge deficit. Indeed, in continuous-learning work environments (e.g., Tracey, Tannenbaum, & Kavanagh, 1995), developmental experiences have sometimes become informal, unexpected, and derived from everyday events (Birdi, Allan, & Warr, 1997).
Some researchers have made progress toward the more accurate measurement of development activity. Most notably, Birdi et al. (1997) have developed a typology of development activity that includes the following five dimensions: voluntary versus required, formal versus informal, current versus future orientation, job versus nonjob focus, and work versus nonwork time. Along with these dimensions, they identified the following four categories of development activities: required training course in work time, work-based development activity in work time, voluntary learning in one’s own time, and career-planning activity. Maurer and Tarulli (1994) also attempted to expand their measurement of development activities, grouping them into the categories of in-house and external.

Second, although definitions of development have become more sensitive to range and type, the “how many, how much” approach continues to define measurement. Quantity of development activity may not be the best measure of development experience and its value. Participating in 40 hours of employee training a year or attending 10 different training courses has little value if the training is poor, irrelevant for one’s job, or unrelated to development needs. Therefore, counting number of hours spent in development, no matter how one might define it, does not recognize that some experiences have minimal impact. If we are to expand our understanding of development experiences, we must refine our measures by paying greater attention to the quality of development opportunities in the environment (Birdi et al., 1997). Improving measurement requires greater sensitivity to a full range of individual activities or classes of activities, whether or not they are specifically intended for development. Engaging in one significantly valuable developmental activity could have far more influence than a broad range or frequency of less valuable activities. In addition, the quality of the planning and execution of development activity should contribute to one’s overall experience.

In this study, we make an attempt to address some of the past challenges associated with the measurement of development activity. Our measures of development activity diverge from previous research by focusing on the following three indexes: development plan quality, impact of the chosen activities, and breadth of activity. In addition, we draw data from two sources, executives participating in a development program and their development team leaders.

Performance improvement. When evaluating a development program, the criteria for success might include increased awareness, skill improvement, promotions, salary increases, or the development of new skills. Whatever outcome is targeted, a clear link must exist between the developmental activities and their ability to effect the desired outcome. In the case of performance outcomes, we would expect the quality of development activity to be directly correlated with performance improvement. We expect ratings of performance improvement to be higher for those participants who have the highest quality development plans and the most valuable experiences. Finally, as an improved measurement approach, indicators of development activity value should demonstrate a stronger relationship to performance improvement than will breadth (i.e., range) of development experiences.
Although development activity has been tied to performance improvement, many factors affect this relationship. Time constraints, characteristics of the participant, and organizational opportunities could either facilitate or hinder development experiences. To further understand the factors affecting development activity and its outcomes, we examined the following two sets of influences: person factors and situational factors (see Birdi et al., 1997; Hellervik et al., 1990; Maurer & Tarulli, 1994; Schneider, 1983).

**Person Factors**

*Feedback receptivity.* After engaging in a developmental assessment, participants typically receive detailed feedback for improvement. Although feedback helps establish direction in development (Ilgen, Fisher, & Taylor, 1979; Thornton & Byham, 1982), not all participants are willing to accept or make use of the information. One of the most consistent findings in feedback receptivity research has been the positive relationship between feedback valence and receptivity (see Kudisch & Ladd, 1997). Positive feedback is more readily embraced than is negative feedback. Kudisch and Ladd (1997) identified many of the factors promoting feedback acceptance such as exercise realism, assessor expertise, feedback favorability, and recipients’ skill levels. Baisden and Roberson (1993) found that performance along certain assessment dimensions such as tolerance, work orientation, creativity, self-realization, and critical thinking are positively related to receptivity.

It is not yet clear how immediate receptivity to structured assessment center feedback affects participation in development or changes in long-term performance. Beyond mere acceptance, reactions to assessment feedback can influence the nature of development activity. When ratings of developmental needs agree with individuals’ self-assessment of needs, this can produce higher levels of motivation and satisfaction (Granrose & Portwood, 1987). Reiber and Reiber (1996) found that reactions to 360-degree feedback positively correlated with the number of days participating in development, participants’ intentions to engage in development, and the number of developmental activities. Still, we cannot be sure of the effects of receptivity on long-term development. If positive feedback is met with high receptivity, it could reduce motivation to develop. Why engage in development when you are already a good performer? However, negative feedback met with low receptivity could either discourage or encourage development. Participants could discount the validity of the negative feedback (Kudisch & Ladd, 1997) or develop a sense of reactance (Brehm & Brehm, 1981). Alternately, they might engage in development to overcome the dissonance produced by incongruous feedback (Festinger, 1957).

In this study, we examined receptivity as rated by assessors’ formal evaluation of the feedback session. Our operationalization of receptivity included ratings of participants’ acceptance of feedback (perceptions that the results are valid), the degree to which feedback appeared to confirm performance expectations, and willingness to engage in developmental planning during the feedback session. This approach and
definition are similar to previous assessor-based measures of receptivity (see Baisden & Roberson, 1993; Kudisch & Ladd, 1997).

**Learning motivation.** Most past research has measured aspects of the individual that might affect participation in developmental activities. Probably the most prevalent of these measures has been various indicators of motivation level. Motivation has been measured both before and after developmental activities and has been associated with numerous person factors, situational factors, and related outcomes. Clark, Dobbins, and Ladd (1993) found that motivation to learn was greatest when training was perceived as related to job performance or to the opportunity for future advancement. In a related study by Noe and Wilk (1993), motivation to learn was positively related to development activity. Tannenbaum, Mathieu, Salas, and Cannon-Bowers (1991) found that when training met participants’ expectations, it resulted in higher levels of organizational commitment, physical self-efficacy, academic self-efficacy, and training motivation. They also found that pretraining motivation predicted the development of posttraining attitudes.

Although it is preferable to measure motivation both before and after behavior, it frequently has been treated as a postdevelopment outcome leading to improved on-the-job performance (e.g., Birdi et al., 1997; Kanfer & Ackerman, 1989; Latham, 1989). Positive development experiences and associated motivation levels should increase the probability of continued development. In our study, we examined the impact of an 18-month development cycle on participants’ learning motivation (i.e., desire to learn and transfer skills). We expected motivation to be associated with the value of development experience and performance improvement.

**Self-efficacy.** Self-efficacy has emerged as a separate and powerful influence on participation and performance (Gist & Mitchell, 1992; Hysong & Quinones, 1997; Noe & Wilk, 1993; Tannenbaum et al., 1991). Like motivation, self-efficacy can be studied both as an important antecedent and outcome of development (Birdi et al., 1997; Gist, 1987; Gist, Schwoerer, & Rosen, 1989). Although the participants in our study had engaged in developmental activities prior to the formal executive development program, their experiences and levels of success probably varied greatly. We expected that performance improvement would be positively related to self-efficacy for setting up and successfully executing a development program.

**Development incentives.** Finally, we examined the role of perceived outcomes or incentives for engaging in developmental activities. Several studies have shown that intrinsic motivation for learning and the perception of choice can facilitate training transfer (Baldwin et al., 1991; Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Hicks & Klimoski, 1987). Maurer and Tarulli (1994) expanded these intrinsic and extrinsic incentives to include psychosocial factors and observed similar effects. Because developmental activity in our study was not linked to performance ratings, we did not expect extrinsic incentives to play a strong role in the development process. We expected that a nonevaluative approach to development would emphasize the intrinsic incentives or outcomes for development. Our study examined extrinsic, intrinsic, and psychosocial motivators from an expectancy-valence perspective. We measured the
degree to which certain outcomes were expected from development and how much participants valued those outcomes.

Situational Factors

Many studies of training transfer measure the ways that situational factors can influence participants’ attempts to change their behaviors (e.g., Mathieu, Martineau, & Tannenbaum, 1993; Peters, O’Connor, Eulberg, & Watson, 1988; Wexley & Baldwin, 1986). Maurer and Tarulli (1994) found that company policies, supervisor support, and company orientation to development each were positively related to developmental activity. Reiber and Reiber (1996) also found consistently significant relationships between a number of situational factors and developmental progress measures. Our study adopts a modified version of Reiber and Reiber’s (1996) model to assess the impact of the work environment on development and performance improvement. We measured variables related to interpersonal support (supervisor and coworker support) and organizational context (development policies and culture, organizational communication, time and workload). Based on past findings (e.g., Kozlowski & Farr, 1988; Noe & Wilk, 1991) and the collaborative nature of the developmental program in our study, we expected interpersonal support factors to play an especially strong role in the success of the development program. Still, we expected all of the situational factors to significantly affect the degree of improvement.

Hypotheses

Hypothesis 1: Quality of development plans and the value of development activities will be positively related to performance improvement.
Hypothesis 2: Value of development activity will have a stronger relationship to performance improvement than will breadth of development activity.
Hypothesis 3: Receptivity to feedback will be positively related to assessment center performance and learning motivation.
Hypothesis 4: Person factors (including receptivity to feedback, learning motivation, self-efficacy, and incentives) will be positively related to quality of development plans, value of development activities, and performance improvement.
Hypothesis 5a: Situational factors (including supervisor support, peer support, organizational communication, time and workload, policies, and culture) will be positively related to quality of development plans, value of development activities, and performance improvement.
Hypothesis 5b: Situational factors focused on interpersonal support (i.e., supervisor and peer support) will be the most predictive of quality of development plans, value of development activities, and performance improvement.

METHOD

Participants

Exactly 104 (85 men, 19 women) managers and executives from a glass- and paint-manufacturing organization participated in an executive development process spanning 18 months. Individuals who participated in the executive development process
had been identified as high potential through an annual succession planning review process. This process was based on a series of discussions in which the top management team evaluated potential future leaders of the organization against preestablished criteria. Participation in the program was voluntary, but participants recognized its importance in making decisions for assignments in future leadership positions. All managers could be considered members of upper management, but none were considered to be at the highest levels of leadership in the organization. Although most were already considered capable in their positions, they were involved in the development program for the purpose of enhancing bench strength for higher level positions. Assessment and development were designed to address skills for higher level leadership roles, which may or may not already have been observed in this group of high potentials.

Participants were a moderately homogeneous group: 87% were Caucasian, 63% had received a master’s degree or higher, 69% had been with the company more than 11 years, 43% were 30 to 39 years old, 46% were 40 to 49 years old, 11% were over 50 years old.

Procedure

The executive development process was composed of the following four phases:

I. Assessment center. Participants participated in a 1½-day assessment simulation. During this simulation, participants assumed the role of a business unit leader in a fictitious organization. They were faced with an array of challenges presented in the form of integrated role-plays, in-basket items, and analysis exercises. An individual’s performance in the assessment simulation was measured against a set of 10 dimensions deemed critical for future job success. These same competencies were targeted in a 360-degree survey administered to each participant, their manager, direct reports, peers, and others. These data were used to enhance the interpretation of other assessment observations.

After the simulation, each participant was evaluated on described competencies by a team of trained assessors (minimum of three per participant). All simulation observations and final ratings were arrived at through a consensus data integration discussion.

II. Feedback process. Comprehensive written feedback on assessment results was provided approximately 3 weeks after the actual assessment session. This was followed by a confidential 2-hour feedback session with a lead assessor during which questions were answered and additional insights regarding assessment observations were shared. The assessor provided ratings of feedback receptivity after completing the feedback session.

III. Development planning process. Each participant was assigned an executive development team (EDT) composed of two senior executives and a representative from human resources (HR). Participants worked with their team to design a development plan focused on areas targeted by the assessment process. EDTs were encouraged to target their development plans on only one to three dimensions in order to
ensure maximum impact. This team facilitated participant development through mentoring, identifying on-the-job development activities and senior-level networking, and monitoring developmental progress. Team meetings were held approximately three (median value) times during the formal development cycle of 18 to 24 months.

IV. End of cycle follow-up. Questionnaires were administered at the end of the development cycle to participants, their managers, and members of their development team. All questionnaires were self-administered and respondents were promised confidentiality.

Measures

Table 1 presents an outline of all measures, including rater sources and timing.

Assessment center ratings (professional assessors). Assessors rated participants on both a dimension and a key behavior level. Overall dimension ratings were based on a 3-point Likert-type scale (1 = development opportunity, 2 = proficient, 3 = strength). Consensus data integration discussions attended by all assessors who observed a participant yielded final dimension and key behavior scores. These clinically derived ratings were the scores reported back to participants during feedback. The three dimensions showing the greatest need for improvement (and most likely to be targeted by development activity) were visioning (81%), coaching (53%), and building business partnerships (38%).

Measures of development. We relied on three different measures of development activity. First, we asked participants to indicate the quality of their development experiences. Based on a review of the company’s development and course catalogue, we created a list of 13 categories of development activity. Before rating the value of different activities, participants were asked to list two of their assessment center performance dimensions targeted for development. Each development activity category was rated in terms of its effectiveness for promoting personal development in those skill areas (1 = To a very small extent, 5 = To a very great extent). If participants did not engage in a development activity, they were asked to indicate nonparticipation. Overall development value was measured by creating an average score based on those activities selected by a participant. As an alternative form of measuring development, independent of development value, we summed the number of developmental activities each participant used (ranging from 1 to 13). Finally, EDT leaders evaluated the overall quality of each participant’s development plan. Plans were rated on a 7-point Likert-type scale using 3 items describing various aspects of plan quality (α = .81, comprehensiveness, creativity, and flexibility).

Outcomes of development. Participants used a single-item scale to rate the extent to which they felt the executive development process had impacted their job performance: “Over the past 18 months, from your personal point of view, has your overall performance: (a) increased, (b) stayed the same, (c) decreased.” Because no participants saw a decrease in their performance, we coded these responses into two catego-
TABLE 1
Measures, Raters, and Sample Items in Survey of Executive Assessment and Development Program

<table>
<thead>
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<th>Professional assessors</th>
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<tr>
<td>Assessment center performance (initial assessment, start-cycle)</td>
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<td>Proficiency ratings of dimensions such as visioning, coaching, building business partnerships</td>
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<tr>
<td>Overall receptivity (postassessment feedback session, start-cycle)</td>
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<td>- Acceptance: Criteria for a “3” rating—Accepts accuracy of all information without challenging findings; seeks to gain even more detailed information. May express interest or ask questions about assessment method without challenging</td>
</tr>
<tr>
<td>- Expectations: Criteria for a “3” rating—Does not act surprised or taken aback by findings; may comment that findings were “what I expected”</td>
</tr>
<tr>
<td>- Action planning: Criteria for a “3” rating—Indicates plans or next steps to set up a developmental program; may ask for input about what he/she should do or what others have done for improvement; analyzes current opportunities and tries to set up a plan for action</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EDT team leaders</th>
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</thead>
<tbody>
<tr>
<td>Participant motivation (end-cycle)</td>
</tr>
<tr>
<td>Rating of participant’s “overall motivation”</td>
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<tr>
<td>Plan quality (end-cycle)</td>
</tr>
<tr>
<td>Ratings of plan comprehensiveness, creativity, and flexibility</td>
</tr>
<tr>
<td>Performance improvement (end-cycle)</td>
</tr>
<tr>
<td>Average rating of improvement in awareness or knowledge and overall skill improvement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participants</th>
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<tr>
<td>General motivation (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “I am motivated to use the skills and knowledge obtained in development activities on the job”</td>
</tr>
<tr>
<td>Self-efficacy (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “I am fully capable of setting up a development plan and carrying it out”</td>
</tr>
<tr>
<td>Extrinsic incentives (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “If I set up a detailed personal development plan, monitor my progress toward goals, and ultimately improve my skills, it will increase my salary”</td>
</tr>
<tr>
<td>Psychosocial incentives (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “If I set up a detailed personal development plan, monitor my progress toward goals, and ultimately improve my skills, it will make my job more enjoyable”</td>
</tr>
<tr>
<td>Intrinsic incentives (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “If I set up a detailed personal development plan, monitor my progress toward goals, and ultimately improve my skills, it will make me more well-rounded as a person”</td>
</tr>
<tr>
<td>Supervisor support (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “My immediate supervisor/manager encourages me to take time to pursue personal development activities”</td>
</tr>
<tr>
<td>Policies and culture (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “The process for setting up a development plan is clearly defined and easy to use”</td>
</tr>
<tr>
<td>Organizational communication (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “It is easy to share information with others in this organization”</td>
</tr>
<tr>
<td>Coworker support (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “My peers support and encourage me to pursue my own personal development”</td>
</tr>
<tr>
<td>Time/workload (end-cycle)</td>
</tr>
<tr>
<td>Sample item: “I have adequate time to participate in development activities”</td>
</tr>
<tr>
<td>Development value (end-cycle)</td>
</tr>
<tr>
<td>Average value of development activities such as “Asking for feedback on specific aspects of my work from someone whose opinion I value”</td>
</tr>
</tbody>
</table>
Person factors. Receptivity to assessment center feedback was measured immediately after feedback sessions were completed. Professional assessors evaluated participants’ feedback receptivity using three 3-point \( (1 = \text{low}, 3 = \text{high}) \) behaviorally anchored rating scales. These scales described degree of agreement between assessment results and participant expectations, participant acceptance of feedback, and expressed intent to take action \( (\alpha = .60) \).

The remaining three categories of person factors were measured at the completion of the development cycle. Motivation was assessed from the perspectives of the participant and of the EDT leaders. We attempted to measure motivation to develop and motivation to transfer using three items per scale \( (7\text{-point agreement ratings}) \). Because we encountered low reliabilities for the two scales, the six items were submitted to a principal components analysis with varimax rotation. Results yielded a one-factor solution that we termed learning motivation \( (\alpha = .69) \) \((\text{e.g., “I am motivated to use the skills and knowledge obtained in development activities on the job,” “I actively seek out new skills and knowledge that might be relevant to my job”})\). EDT leaders used a single 7-point Likert-type scale to evaluate overall motivation level observed during the development program \( (1 = \text{Low}, 7 = \text{High}) \).

Three items were averaged to compute a general index of self-efficacy for development \( (7\text{-point Likert-type scale, }\alpha = .72) \) \((\text{e.g., “I am fully capable of setting up a development plan and carrying it out”})\). Although this approach to measuring task self-efficacy is a simplified one, previous research in this area has employed similar measures \( \text{(e.g., Tannenbaum et al., 1991)} \).

Ten potential incentives for development were used to measure participants’ reasons for choosing to engage in development activity. These incentives can be classified into the following three categories: extrinsic \( \text{(e.g., pay increases, status)} \), intrinsic \( \text{(e.g., make job more enjoyable, more interesting)} \), and psychosocial \( \text{(e.g., growth as a person)} \). Although participants might associate certain outcomes with the development
program, these outcomes served as incentives only if they were valued. Therefore, we first asked participants to rate the degree to which they expected “setting up a detailed personal development plan, monitoring progress toward goals, and ultimately improving skills” would lead to various outcomes (7-point Likert-type scale, \(-3 = \text{Strongly disagree}, 3 = \text{Strongly agree}\)). Then, we measured value of the outcomes using a second scale (7-point Likert-type scale, \(1 = \text{Not at all valuable}, 7 = \text{Extremely valuable}\)). Scales were created from the expectancy/valence cross-product scores for the 10 outcomes, intrinsic (\(\alpha = .75\)) (e.g., “make my job more enjoyable”), extrinsic (\(\alpha = .76\)) (e.g., “increase my salary”), and psychosocial (\(\alpha = .63\)) (e.g., “make me more well-rounded as a person”).

Situational factors. Using a 7-point Likert-type scale, participants rated 10 items reflecting situational factors that might affect development. Responses were averaged into five scales, each composed of two items: supervisor support (\(\alpha = .88\)) (e.g., “My immediate supervisor/manager encourages me to take time to pursue personal development activities”), development policies and culture (\(\alpha = .75\)) (e.g., “The process for setting up a development plan is clearly defined and easy to use”), organizational communication (\(\alpha = .83\)) (e.g., “It is easy to share information with others in this organization”), coworker support (\(\alpha = .69\)) (e.g., “My peers support and encourage me to pursue my own personal development”), and time and workload constraints (\(\alpha = .90\), “I have adequate time to participate in developmental activities”).

In addition to postdevelopment measures of situational factors, participants completed brief progress reports during the development process. Approximately mid-cycle, participants provided 5-point ratings of the following four development support resources: their supervisors, EDT leaders, the HR contact person, and the HR department. To better reflect the impact of support resources, we asked participants to rate each resource in terms of both involvement and effectiveness (\(1 = \text{Low}, 5 = \text{High}\)). The resulting cross-products of the two ratings were used to create support indexes. Principal component analysis of the cross-products revealed that supervisor involvement/effectiveness was a separate influence compared to the other three resources. As a result, we created two indexes of support, development support (\(\alpha = .60\), EDT leaders, the HR contact person, and the HR department) and supervisor support. These indexes provided a unique, mid-process measurement of development support that supplemented the end-of-cycle ratings of supervisor and coworker support.

RESULTS

Development activity and performance improvement. As shown in Table 2, development value is significantly related to self-perceptions of performance improvement (\(r(82) = .22, p < .05\)) and development plan quality is significantly related to EDT perceptions of improvement (\(r = .87, p < .001\)). Although these correlations provide support for Hypothesis 1, we did not find significant correlations between measures of
development and performance improvement when each was drawn from a different rating source. In other words, the EDT ratings of plan quality did not correlate significantly with self-ratings of performance, and self-ratings of development value did not correlate with EDT ratings of performance improvement.

In Hypothesis 2, we compared development value with development breadth as possible predictors of performance improvement. Once again, results depended on the individual providing ratings of performance improvement. Unlike development value, development breadth did not correlate significantly with self-ratings of performance change \((r(82) = .08, \text{ns})\). However, development breadth displayed a stronger (though nonsignificant) correlation with EDT ratings of performance improvement \((r(82) = .17, p < .09)\) than did development value \((r(82) = -.04, \text{ns})\). In summary, the relationships between measures of development activity and performance improvement were positive but did not hold up when cross-referencing rating sources. Overall frequency and value ratings for the different development activities can be found in Table 3.

**Feedback receptivity.** Testing Hypothesis 3, we found good support for the predicted positive relationship between feedback receptivity and assessment center performance. Both the overall index of receptivity \((r(104) = .17, p < .05)\) and the measure of feedback acceptance \((r(104) = .19, p < .05)\) correlated significantly with assessment center performance. The degree to which feedback met expectations and the expressed intent to take action were positively correlated with assessment center performance but did not reach significance.

**Person Factors**

As a group, person factors showed significant relationships to all measures of development and performance improvement, but not always in support of Hypothesis 4. While most measures had some significant relationships, correlations sometimes were negative and varied by rater source.

**Learning motivation.** Self-ratings of learning motivation were positively related to self-ratings of development value \((r(83) = .35, p < .01)\), breadth of activity \((r(83) = .21, p < .05)\), and to performance improvement \((r(82) = .25, p < .05)\). Self-ratings of learning motivation were unrelated to any EDT rating. EDT ratings of learning motivation were strongly related to EDT ratings of plan quality \((r(94) = .88, p < .01)\) and performance improvement \((r(82) = .86, p < .01)\). However, EDT ratings of learning motivation were unrelated to self-ratings of development value.

**Self-efficacy.** Unlike motivation, self-efficacy displayed a much more consistent relationship to multiple perspectives of development and performance improvement. Self-efficacy was positively related to self-ratings of performance improvement \((r(82) = .26, p < .01)\), development value \((r(83) = .16, p < .075)\), EDT ratings of plan quality \((r(77) = .29, p < .01)\), and EDT ratings of performance improvement \((r(66) = .25, p < .05)\).
Incentives. Intrinsic incentives were positively related to self-ratings of performance improvement ($r(82) = .28, p < .01$) and development value ($r(83) = .20, p < .05$). Contrary to Hypothesis 4, intrinsic incentives were negatively related to EDT ratings of performance improvement ($r(66) = -.20, p < .05$) and plan quality ($r(77) = -.19, p < .05$).

Psychosocial incentive ratings also were positively related to self-ratings of performance improvement ($r(82) = .26, p < .01$) but were negatively related to EDT ratings of performance improvement ($r(66) = -.23, p < .05$) and plan quality ($r(77) = -.22, p < .05$).

Feedback receptivity. Self-ratings of performance improvement were negatively related to overall receptivity ($r(80) = -.23, p < .05$) and to one of its subscales, acceptance of feedback ($r(80) = -.20, p < .05$). The other components of feedback receptivity also were negatively related, but not significantly.

### TABLE 2
Pearson Correlations Between Assessment Center Performance, Feedback Receptivity, Person Factors, and Situational Factors in Survey of Executive Assessment and Development Program

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>1. Assessment center</td>
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<td>-.23**</td>
<td>.18**</td>
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<td>12. Expectations</td>
<td>4.82</td>
<td>1.24</td>
<td>83</td>
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<td>16. Expectisnces</td>
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</table>

NOTE: Variables were measured at the following points in time: Start-cycle, columns 1 to 5; Mid-cycle, columns 17, 18; End-cycle, columns 6 to 16, 19 to 23. EDT = executive development team.

*p < .10. **p < .05. ***p < .01.
The relationships found between person factors and development are further substantiated through the results of regression analyses. Regression analysis predicting development and performance improvement from person factors and situational factors are presented in Table 4. Separate regression equations were tested with person factors as predictors and each outcome as a criterion. When examining self-ratings of performance improvement, a logistic regression equation was used to address the dichotomous distribution. Person factors significantly predicted only self-ratings of performance improvement, $\chi^2(6) = 16.26, p < .02$. However, no single person factor emerged as a significant predictor within the model. Examination of the standardized coefficients indicates that self-efficacy and motivation consistently account for the greatest amount of unique variance in the equations.

Situational Factors

Tests of Hypothesis 5 were based on data drawn from two points in the development cycle. First, we examined end-of-cycle measures of situational factors affecting devel-
Each of the five factors was positively related to self-ratings of development value, with coworker support being most strongly related \((r(82) = .41, p < .01)\). All five factors were significantly related to breadth of development activity. Only organizational communication \((r(82) = .19, p < .05)\) was significantly related to self-ratings of performance improvement. Situational factors showed generally positive, though nonsignificant, relationships to EDT ratings of development and performance improvement.

As a second test of Hypothesis 5, we examined mid-cycle measures focusing specifically on development support and supervisor support measures (involvement \(\times\) effectiveness). Correlations between mid-cycle development support and end-of-cycle situational factors were nonsignificant (see Table 2). However, the mid-cycle measure of supervisor support did correlate significantly with all but one of the end-of-cycle situational factor ratings. The correlation between mid-cycle and end-cycle supervisor support was lower than might be expected \((r(54) = .28, p < .05)\). However, this finding could be attributable to the fact that 65% of the participants experienced a change in reporting structure during the development cycle. In terms of development activity, significant correlations appeared between mid-cycle development support and end-of-cycle development value \((r(55) = .25, p < .05)\) and between mid-cycle supervisor support and end-of-cycle development breadth \((r(54) = .23, p < .05)\).
cycle development support and supervisor support were unrelated to any other measure of development activity or performance improvement.

Regression analyses (Table 4) yielded two significant equations in which situational factors were entered as predictors and outcomes were the criterion measures.\(^3\) Breadth of activity was predicted by the combination of situational factors, \(F(5, 75) = 5.05, p < .001\). The combination of the five situational factors also served as a significant predictor of development value, \(F(5, 75) = 2.73, p < .05\). In support of Hypothesis 5b, coworker support was the only significant predictor in this model.

<table>
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<th></th>
<th>Development Activity</th>
<th>Performance Improvement</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Plan Quality (EDT)</td>
<td>Development Value (Self)</td>
</tr>
<tr>
<td>Model 1: Person factors</td>
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<tr>
<td>Model adjusted (R^2)</td>
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<td>.08*</td>
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<tr>
<td>General motivation</td>
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<td>.32***</td>
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<td>Self-efficacy</td>
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<td>.02</td>
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<tr>
<td>Extrinsic incentives</td>
<td>–.01</td>
<td>.04</td>
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<tr>
<td>Psychosocial incentives</td>
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<td>–.02</td>
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<tr>
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<td>–.17</td>
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<tr>
<td>Overall receptivity</td>
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<td>.09</td>
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<tr>
<td>Model 2: Situational factors</td>
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<td>Supervisor support</td>
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<td>Policies and culture</td>
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<td>Organizational communication</td>
<td>.09</td>
<td>–.05</td>
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<tr>
<td>Coworker support</td>
<td>–.06</td>
<td>.36***</td>
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<tr>
<td>Time and workload</td>
<td>–.09</td>
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<td>Model 3: Combined model</td>
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<tr>
<td>Model adjusted (R^2)</td>
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<td>General motivation</td>
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<tr>
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NOTE: Logistic regressions were performed for Performance Improvement (Self). EDT = executive development team.

*p < .10. **p < .05. ***p < .01.
Hypothesis 5, which proposed that situational factors would be positively related to development activity and performance improvement, received partial support. Correlations were positive overall but reached significance only when involving self-ratings of development value and breadth of activity. Situational factors showed consistent relationships to development value and breadth but were unrelated to improvement measures. In support of Hypothesis 5b, correlation and regression analysis identified coworker support as the situational factor most strongly related to development.

**Person and Situation Factors Combined**

The combined value of person factors and situational factors in predicting outcomes was assessed by simultaneously entering all of the predictors into a separate regression equation for each outcome. Both self-ratings of performance improvement, \( \chi^2(11) = 22.65, p < .02 \), and breadth of activity, \( F(11, 66) = 2.01, p < .05 \), were predicted by this combination of factors. Although the model predicting development value was not significant, \( F(11, 66) = 1.63, p < .11 \), it accounted for almost as much variance as the other models. In models predicting EDT ratings, a similar amount of variance (5%) was explained but the models themselves were not significant.

**DISCUSSION**

Past research efforts regarding assessment and development typically have treated the two activities as unique events instead of as a seamless progression. Where they have been linked, either the assessment or development component has been limited in scope. This research examines a long-term (18 month) employee development cycle based on systematic identification and assessment of job-specific competencies. Our typology of activities and multiple measures of development contribute to the understanding of the many forms development activity can take. Several recent studies (e.g., Maurer & Tarulli, 1994; Noe & Wilk, 1991) identify a general paucity of knowledge regarding the constructs relevant for career or employee development.

This study illustrates the challenges associated with tracking multiple measures from multiple perspectives, especially when the findings are not consistent. We do have confidence that many of the findings are consistent with previous research. However, in some ways, the questions raised by our line of inquiry are more thought-provoking than are the results themselves. Based on the pattern of findings, we present four conclusions and their associated implications:

1. Development activity and quality of the development experience are related to performance improvement.

When comparing development activity and performance improvement within rater groups, clear relationships emerged. Both the value of development activity and level of plan quality were significantly related to improved performance (within rater source). The following three elements facilitate the link between development activity
and performance improvement: (a) objective assessment of needs, (b) understanding
and ownership of development needs, and (c) a targeted plan for addressing needs.

Development activity will be of little value unless it is linked to needs that were
identified through an objective process. In addition, the type of needs identified and the
resulting development plan will vary depending on the criteria for assessment. For
example, individuals might be assessed in terms of skills needed for their current jobs
or for future jobs. In any case, development needs should be assessed through tradi-
tional approaches involving multiple methods and perspectives. Evaluation of past and
future research should consider the assessment methods used in advance of the devel-
opment process. Studies of development might yield very different results in situations
involving 360 assessment, traditional assessment centers, tests, or no needs assess-
ments at all.

This study revealed a positive relationship between performance in an assessment
center and receptivity to feedback from the assessment center. Although participants
were more receptive to positive feedback, lower feedback receptivity was associated
with greater performance improvement. As a possible explanation, less favorable
feedback could create a dissonant state in participants that motivates them to engage in
development activity, thus producing greater progress. Because the participants in this
study already were identified as high potential leaders, the identification of develop-
mental needs through assessment could have conflicted with self-evaluations of per-
formance. The “slap in the face” resulting from participation in the assessment program
could have provided a much-needed development impetus for these already-valued
organizational members. The process of overcoming performance deficits through
development activity also seems to increase the likelihood of enhanced self-efficacy.
Participants who were less receptive to feedback were the ones most likely to demon-
strate high self-efficacy after development.

Similar to a performance management plan, the development plan resulting from
assessment guides action and creates a level of accountability for results. Plan quality
and the value of development activity will be a function of how clearly leaders under-
stand their needs. Activities selected in a development plan should clearly link to
expected outcomes. In this study, we focused on performance improvement as the
criterion for program success. Other studies of development programs should clearly
state their purpose and expected outcomes. The link between development and
improvement could vary greatly if improvement is defined as promotion, salary
increases, or improved business unit performance. Measurement error will play a
greater role in studies attempting to link personal development activity to indicators
that are less easily influenced by such activities.

2. Certain person and situation factors are consistently related to development activity and perform-
ance improvement.

Many of the factors affecting development in lower level positions also influenced
development in this executive-level sample. Still, depending on the measures, the
influence of person versus situational factors can vary greatly. The most consistent and
powerful effects were found for motivation, self-efficacy, intrinsic incentives, and
coworker support. In general, our results show good support for a conceptual model of development that includes both person and situational influences.

Our measure of learning motivation included components of both motivation to learn and motivation to apply learning to the workplace. Noe and Wilk (1993) found that motivation to learn was the only attitudinal variable to have a consistent, significant, positive influence on different outcomes related to development activity. From the perspective of the participant, high motivation was the person factor most likely to be associated with an active development experience. To enhance leaders’ motivation to develop, organizations need to ensure that leaders see a need for development, understand its benefits, and receive the required support for planning and tracking development activities. Oftentimes, these objectives can be accomplished through orientation sessions, ongoing meetings or updates, and regular communication of program goals and progress.

Although motivation was consistently linked to development and performance, self-efficacy demonstrated a more consistent relationship across raters. Self-efficacy has been related to participation in development but only rarely has it been linked to performance enhancement resulting from development activity (e.g., Mathieu et al., 1993). Our research adds to this growing body of research by confirming the relationship between development and self-efficacy in the context of an actual organizational development program. When participating in development activities, self-efficacy can be maintained or enhanced by ensuring that participants have the opportunity to achieve mastery. Development programs must provide participants with a safe environment that allows them to practice new skills, receive feedback, and achieve success.

Our findings show strong confirmation for previous studies supporting the importance of intrinsic and psychosocial incentives or outcomes for development (Clark et al., 1993; Facteau et al., 1995; Maurer & Tarulli, 1994; Noe & Wilk, 1993). Intrinsic and psychosocial incentives were positively related to perceived impact of development activities and increases in performance. These findings have implications for organizations promoting personal development programs. When positioning a development program, organizations should carefully assess participants’ expectations for development and explain the program’s purpose. Participants interested in extrinsic outcomes such as pay increases or promotion need to understand that the development program might not guarantee these outcomes. If participants place a relatively high value on extrinsic incentives, organizations might clarify the degree to which participation in the development program will help achieve those outcomes. In our sample, the development program began with a detailed orientation program that explained the structure, process, and goals of the program.

As valuable as person factors may be for predicting development and performance increases, situational factors were equally predictive under certain circumstances. We found some confirmation that support factors, especially from peers, were critical to the development process. Support for the importance of coworkers was observed in the ratings of developmental value. Three out of the top four most valuable developmental activities were related to working with others in feedback, coaching, or modeling contexts. Indeed, recent research shows that mentoring and learning may derive from
broader social networks of individuals within the organization (Higgins & Kram, 2001). A typical executive is inundated with daily demands and he or she must find ways to work development into regular responsibilities. Sometimes, these activities will require the support and understanding of coworkers who might be affected by changes in the executive’s work. Organizations hoping to maximize the success of development programs would be wise to educate and involve participants’ coworkers.

3. Although we may attempt to structure and quantify development activity, it is by nature an individualized and serendipitous experience.

Different measures of development activity can yield very different results (i.e., low convergence of measures). Facteau et al. (1995) emphasized the importance of including measures other than self-report when measuring transfer of new skills. Rather than measuring exactly the same variables from multiple perspectives, we chose to ask respondents to rate those aspects of the development process most relevant to their role. For example, while EDT leaders rated plan quality, participants rated the value of their developmental experiences. As observed in previous research, we found low convergence among different measures of development. Correlations between the three measures of development ranged from –.10 to .15 (ns). While it is clear that rater bias may have played a role in our results, the lack of convergence has implications for the measurement of development activity. Ratings of development seem to depend greatly on the perspective, expectations, and experience of the raters.

Although there have been initial attempts to create classification systems, the wide variety of development experiences may not fit easily into a typology. An especially daunting measurement issue concerns raters’ ability to isolate and rate development experiences. Raters must divide sequences or networks of developmental events into sets of discrete activities. The scope, meaning, and experience of development activities are not consistent across individuals. It is clear that future research must measure both quality and quantity of the developmental experience. A qualitative research approach might provide additional insight concerning how individuals conceptualize and classify developmental experiences.

In addition to identifying and isolating development activities, raters must make judgement calls concerning what constitutes a true development activity. It can be misleading to limit “development activity” to a list of special activities that are separate from one’s job. If a leader gains significant insight from a project that naturally evolves from his or her job, should that project be considered a development activity? Some leaders even may rebel against the idea that they must take on additional responsibilities or activities in order to make development progress. Perhaps the development value of an activity can be defined by the degree to which the individual is challenged to try new or unpracticed behaviors. Even then, there is no guarantee that learning will take place. Many events associated with development are confusing or produce inexact outcomes that are not fully understood for months or years. When working with a mentor or development team leader, the primary benefit might come from debriefing and analyzing experiences to determine where the most valuable learning occurred. Future
studies can examine the impact of predetermined or discrete activities on developmental progress. However, an understanding of the holistic learning experience will be difficult to capture in a comprehensive and reliable model.

4. The success of a development program will be defined by the degree to which program participants and administrators develop a common understanding of program goals, expectations, and outcomes for judging progress.

In this study, development and performance improvement appeared to have different meanings depending on rater perspective. This incongruity arises partly from the fact that development activity and performance improvement can be difficult to quantify. The danger of misaligned understanding makes it all the more important to ensure that all individuals involved in the process know exactly how the program works and what it is expected to accomplish. Organizations must maintain a balance between the individualized nature of development planning and activity and the rigors associated with evaluating program success.

To illustrate how different expectations might influence perceptions of program success, we can examine the relationship between measures of development activity and intrinsic incentives. While intrinsic and psychosocial incentives were positively related to self-ratings of development and performance, they were negatively related to others’ ratings of development and performance improvement. Simply stated, when participants were motivated by intrinsic and psychosocial incentives, their development plans were rated lower in quality and they were seen as making less progress. As a possible explanation, participants motivated by intrinsic or psychosocial incentives may experience a form of performance improvement that is not readily observable by others. Increased awareness, satisfaction, meaning, and personal growth might represent significant improvements for the individual. However, from the development team leader’s or manager’s perspective, measurable skill enhancement might be lacking. It also is possible that EDT leaders visualized a more extrinsically motivated individual as the ideal participant for this program. Recent research in the area of intrinsic motivation (e.g., Wild, Enzie, Nix, & Deci, 1997) demonstrates that mere perceptions about the motivations of others who are performing an activity can influence feelings and perceptions in the observer. At this point, findings concerning the relationship between EDT’s perceptions and participants’ motivations should be viewed with caution. Without future replication, we cannot be sure that the unexpected finding will be a consistent one.

Although the negative relationship between motivations and progress could be an artifact of the data, it is clear that there was little convergence between the participant’s ratings and ratings made by their EDT leaders. Communications about development programs should address the types of outcomes that might result from participation and how progress will be monitored. Some development programs are designed as succession planning interventions to ensure existing leaders have the skills necessary to step into open positions at higher levels. Other programs are linked to performance plans designed to improve job effectiveness. Alternatively, some development programs have few expectations associated with them and are established as a creative
outlet for participants to use at their own discretion. Depending on program goals, the
type of participant and the nature of activities could vary greatly. The most effective
programs will clearly communicate what the program is expected to accomplish and
how progress will be measured. Along with expectations, the program should provide
recommended activities for developing particular skills with guidelines showing
exactly how the activity will improve the targeted skills. Similarly, unsanctioned activ-
ities identified by the leader and/or a mentor should be subjected to the same criteria.

Limitations and Future Research

Although this study addresses many of the issues examined in previous research,
we experienced several limitations. First, this study was conducted in conjunction with
an actual organizational development program, which limited our control over mea-
sures and timing. Most of our measures focused on the end-of-cycle period, with the
exception of assessment center data, feedback receptivity, and one mid-cycle measure
of support. Predevelopment measures of motivation, self-efficacy, expectations, and
other person variables would have strengthened our conclusions. Variables such as
self-efficacy have the potential to fluctuate over the course of a training or develop-
ment experience (Mathieu et al., 1993). Information about the changes in motivation,
situational factors, or other influences could explain additional variance in our final
outcomes. The body of research addressing development experience is growing, but
we still need more studies addressing person and situation factors as they fluctuate
over time. Still, our research is not unusual in focusing primarily on the outcomes
resulting from development experience.

Low power and attrition probably will continue to be a problem for executive devel-
opment studies. In our sample, 25% of the participants were promoted into other posi-
tions, thus changing both their reporting structure and job responsibilities. Similarly,
although a control group would have added value to our study, use of true experimental
designs in this research area (especially with an executive population) will continue to
present a challenge.

Although we attempted to use multiple sources of data to test our hypotheses, it is
clear that source bias effects might have played a role in some of our conclusions.
Many of the ratings drawn from EDT leaders were highly intercorrelated. Still, self-
report data from the participants appears to be at least as valid as most research con-
ducted in similar studies. Despite this limitation, our research represents a divergence
from previous efforts to assess the personal development experience. By drawing data
from three rating sources, we demonstrate the role that perspective can play in mea-
surement of performance improvement. Many individuals in an organization monitor
the progress of an employee, including the human resource department, managers,
senior leaders, direct reports, and other observers. Each might have a different per-
spective on the employee’s progress toward skill or knowledge development. The bur-
geoning research concerning rater perspective (e.g., Harris & Schaubroeck, 1988;
London & Wohlers, 1991; Rothstein, 1990; Shore, Adams, & Tashchian, 1998; Shore,
Shore, & Thornton, 1992) indicates that perceptions of leadership performance and
ability can depend heavily on the observer. Further research on voluntary participation
in development activity needs to consider the convergence or lack of convergence between different raters’ perceptions of performance improvement.

Finally, by its very nature, our study sample may limit the generalizability of our findings. All members of our sample were identified as high potential executives prior to participation in the development program. We recognize that using a select group of high potential executives might raise issues of range restriction in performance. However, assessment center feedback indicated good variance in performance and the presence of improvement opportunities for all participants. In addition, most prior studies have relied on unique development situations (e.g., Mathieu et al., 1993) or have employed large cross-sectional samples of employees (e.g., Noe & Wilk, 1993). It is encouraging to find convergence between findings in our executive sample and much of the existing research. Some differences do appear to exist for executive populations, but many of the same person and situational factors continue to play an important role.

NOTES

1. Due to the applied nature of this study, and difficulty in gaining access to a stable executive sample over an extended period of time, the sample sizes for statistical tests vary across measures. These varying sample sizes are specified in each table.

2. It is possible to conduct a mediation analysis with some of these data. Our various measures of person and situation factors could be treated as mediators of the relationship between development activity (IV) and performance improvement (DV). We did not present these analyses due to limitations in the data and the strong possibility for feedback in the models. Even so, the analyses and hypotheses we present do not conflict with the expected results of a mediation analysis. Initial steps of a mediation analysis predict significant positive relationships between the IV, DV, and mediator. As a follow-up, we did conduct mediation analysis using value of development (IV) and self-ratings of performance improvements (DV). Only one of the person factors (learning motivation) significantly reduced the correlation between the IV and DV. None of the situational factors operated as mediators. Further details concerning these analyses can be obtained by contacting the first author.

3. Because of reduced response rates, mid-cycle measures of development and supervisor support were not included in these regression equations.

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