CONSEQUENCES OF GROUP COMPOSITION FOR THE INTERPERSONAL DYNAMICS OF STRATEGIC ISSUE PROCESSING

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ABSTRACT

The upper echelons perspective for studying strategic leadership has drawn attention to how the composition of top management teams can influence nizational outcomes. A strategic issue processing perspective would lenient current research on top management team composition by improving our understanding of the processes through which composition has its effects. The **upp**r echelons and strategic issue processing perspectives are described. Then, **available** research relevant to the latter perspective is reviewed and propositions **regarding** the role of group composition in strategic issue processing are posed. **As a** result of pushing back the boundaries that now define strategic leadership **rese**arch, **many new** questions and challenges are brought to light.

INTRODUCTION

Dillrrrnt t anon the many theoretical perspectives for understanding cirgcllutcctrrrf$ and heir strategies have been described using a number of

alternative organizing schemes (e.g., Astley & Van de Ven, 1983; Bowman, 1990; Hrebiniak & Joyce, 1985; Mintzberg, 1990). Recurring throughout the available schemes for differentiating among theories is the recognition of opposing assumptions made about leader potency. Early theorists exalted leaders, but later theorists dethroned them, making leaders subordinates of their environments. Recently, theorists interested in "strategic leadership" (Hambrick, 1989) have reinstated leaders as influential shapers of organizational action and outcomes. In their new roles, leaders appear not as omnipotent "masters of the universe," but rather as fallible human beings who negotiate action for, with, and through others on behalf of the organization. Furthermore, strategic leaders do not act in isolation; strategic leadership occurs within a complex social system of multiple leaders with multiple agendas-both private and public-that reflect multiple realities and the needs of multiple constituencies. Within this framework, executive choice and action are assumed to be only partially constrained by environmental imperatives and to have meaningful consequences for a variety of organizational outcomes, consistent with a strategic choice perspective (Astley & Van de Ven, 1983).

THE UPPER ECHELONS PARADIGM

The assumption that leaders matter unifies the strategic leadership perspective, yet the perspective comprises many research programs addressing distinctly different phenomena-a fact illustrated recently in a special issue of the *Strategic Management Journal* (Summer, 1989). One of these research programs, which has been labelled the "upper echelons" paradigm, was spearheaded by Hambrick and Mason's (1984) theoretical position paper. One feature of the upper echelons paradigm that differentiates it from other strategic leadership research is its focus on top management *teams,* not individuals, as the key decision makers in organizations. Previously, many researchers had acknowledged that decision processes often involve multiple players, but Hambrick and Mason pushed this insight to a new conceptual plane by formulating a model that treats the decision-making group as the unit to be assessed and understood. Specifically, the upper echelons paradigm assumes it is the top management team that faces threats and opportunities and carries the responsibility for developing and implementing strategies that enhance or ttization performance.

In directing attention to groups as the analytic unit for study, the upper echelons paradigm introduced a new class of explanatory constructs into the Atetta Of strategic leadership research, namely, dimensions of group composition. The term *composition* can refer to many features of a group. For example, social psychologists use the term broadly, including concepts such ptotu(t *sire and* structure as well as the distribution of members' personal

attributes (e.g., see Levine & Moreland, 1990; Shaw, 1976). Within the management literature, more restrictive usage prevails, however. Consistent with the management literature, composition is used here to refer only to the distribution of personal attributes represented within a group. Measures of both central tendency (e.g., average age of group members) and dispersion (e.g., the coefficient of variation for members' ages) can be used to describe a group's composition, and all types of attributes are potentially relevant, including demographic background, skills and abilities, personality and values, and experience.   `

Central tendency measures of composition are directly analogous to the individual-level indicators from which they are constructed, and in most.cases, the propositions that relate central tendency constructs to group outcomes are directly parallel to propositions formulated at the individual level. For example, evidence that youth is associated with risk taking led Bantel and Jackson (1989) to hypothesize that the average ages of top management teams should predict firm innovativeness. In contrast to central tendency measures, measures of dispersion, which indicate the heterogeneity of a group, do not have analogues at the individual level. Therefore, propositions relating top management team heterogeneity to strategic action were particularly unique to the upper echelons paradigm. Such propositions could not be formulated simply by restating propositions about individual cognition and behavior. Consideration of interpersonal processes and the emergent properties of group dynamics was required. Throughout this paper, the discussion of composition emphasizes phenomena related to group heterogeneity (dispersion) rather than central tendencies, for it is this dimension of composition that is most uniquely relevant to group phenomena, in comparison to individual phenomena.

To date, most upper echelons research has investigated how the demographic compositions of top management teams relate to strategic actions and long-term organizational effectiveness.' A few published studies provide some support for the general thesis that top management team composition predicts the strategic actions and performances of firms (Bantel & Jackson, 1989; Eisenhardt & Schoonhoven, 1990; Finkelstein & Hambrick, 1990; Michel & Hambrick, 1992; Murray, 1989; Singh & Harianto, 1989; Wiersema & Bantel, 1992). In addition, top management team composition predicts turnover rates for top-level executives (Jackson, Brett, Sessa, Cooper, Julin, & Peyronnin, 1991; Wagner, Pfeffer, & O'Reilly, 1984). Such evidence is encouraging and should stimulate additional upper echelons research. In anticipation of continuing interest in this topic, this paper seeks to push back the implicit boundaries that currently limit the territory claimed by upper echelons researchers. Such territorial expansion is considered not merely desirable, but necessary in order to sustain the early momentum enjoyed by the upper echelons paradigm.

Inspection of the results of upper echelons studies published to date reveals that the relationships between top management team composition and organizational actions and outcomes are quite complex and difficult to precisely specify *a priori* from the paradigm's extant theoretical foundation. For example, in a study of 199 midwestern banks (Bantel & Jackson, 1989), the average education level of top management teams was associated with technical innovativeness, as predicted, but was unrelated to administrative innovativeness. Conversely, the degree to which top management teams were heterogeneous with respect to functional backgrounds was associated with administrative innovativeness, as predicted, but not technical innovativeness. Murray's (1989) study yielded complicated findings, also. He found that the relationship between top management team composition variables and financial performance indicators was moderated by a variety of factors, including the composition variables considered, the industry studied, the performance measures used, the length of the time assumed to be necessary for effects to appear, and how "top management team" was defined. Also, Finkelstein and Hambrick (1989) showed that industry moderated the relationship between top management team composition and strategic action.

As these examples reveal, upper echelons research reflects the currently dominant paradigm for strategy research, in which the objective of empirical research is identifying predictors of bottom line performance (Daft & Buenger, 1990; Hambrick, 1990). Because the processes through which top management team composition impacts performance are not yet understood, a priori specification of empirical relationships between top management team composition and organizational outcomes is difficult. Furthermore, as new empirical results accumulate, the complexity of the available data is likely to increase, reflecting the phenomena under investigation. Unless we develop a better theoretical understanding of the mediating processes through which team composition shapes organizational outcomes, the accumulation of evidence may not translate into an improved ability to formulate accurate predictions. In the longer term, this could be detrimental to the upper echelons paradigm for it may lead some to suspect the validity of the paradigm's basic underlying premise.

This paper seeks to stimulate behavioral research to complement the outcome-focused research stimulated by Hambrick and Mason (1984) and the dominant strategy paradigm. To many people currently conducting upper echelons research, the call for behavioral research may sound like a minor change for they realize that Hambrick and Mason's (1984) arguments were rooted in behavioral decision theory. Despite its theoretical roots, however, most extant upper echelons research merely *assumes* that differences in team compositions translate into different team behaviors, which in turn translate into predictable organizational outcomes; these intermediate processes are not being investigated directly.

Although clearly warranted, research that directly examines the processes linking top management team composition to strategic behaviors and outcomes is not likely to flourish-there are too many obvious practical obstacles related to studying top-level executive teams, and also many less obvious methodological obstacles. How, then, are we to improve our understanding of the relevant behavioral processes? One solution for upper echelons researchers is to adopt the strategic issue processing perspective. As will be described next, the strategic issue processing perspective differs in several important ways from the currently dominant upper echelons paradigm. Researchers who adopt the strategic issue processing perspective will address different questions and use different methodologies, in comparison to researchers who work within the current upper echelons paradigm. Because any research achieves some desirable objectives at the expense of other valued objectives, the intent here is not to suggest that one approach be discontinued and replaced by an alternative approach. Instead, the hope is that new knowledge gained from each research stream will yield new insights and that new insights gained from each research stream will inform and stimulate the other.

THE STRATEGIC ISSUE PROCESSING PERSPECTIVE

Strategic issues engage executives in a variety of activities, all of which can be influenced by the characteristics of the group of people involved in issue processing. The strategic issue processing perspective treats these activities as the phenomena of interest. The term "strategic issue processing" (see Dutton, 1988) is used in this paper to refer to *all* activities executives engage in vis-a-vis strategic issues, including problem sensing (Kiesler & Sproull, 1982), recognition (Cowan, 1986), identification and formulation (Lyles & Mitroff, 1980), diagnosis (Dutton & Duncan, 1987; Nutt, 1979), categorization and __ labelling (Dutton & Jackson, 1987), information search and detailing (Nutt, 1984), generating and reviewing solutions (March, 1981), scenario analysis (Mandel, 1983), solution selection (Mintzberg, Raisinghani, & Theoret, 1976), implementation, evaluation, adjustment, and related activities.

Strategic issues refer to developments, trends, and events judged to be significant to the current and/or future performance of the organization (Ansoff, 1979; Dutton, Fahey, & Narayanan, 1983; King, 1982). This definition implies that strategic issues need not involve consideration of strategic change or analysis of strategy per se. The phrase "issue processing" is preferred over "decision making" to recognize that executives' issue-relevant activities often are unstructured, may not be focused on clear objectives, do not unfold rationally and linearly, are symbolic as well as substantive, and involve power struggles, politics, cognitive biases, retrospective learning, and self-interest

(Allison, 1971; Cohen, March, & Olson, 1972; Cyert & March, 1963; Daft & Weick, 1984; Dutton, 1988; Johnston, Langley, Mintzberg, Posada, & Saint-Macary, 1991; Lindblom, 1959; Mintzberg et al., 1976; Narayanan & Fahey, 1982; Nutt, 1984; Quinn, 1980). [2] Because of their magnitude and importance, the processing of strategic issues normally engages several people over an extended period of time. In some instances, strategic issue processing occurs through a series of quite unstructured interactions, while in other instances, a core group of people engaged in the processing of an issue form an identifiable issue processing group.

Strategic Issue Processing Groups

In its purest form, the strategic issue processing perspective treats issues as the units of study and leaves open the question of how much structure is imposed on issue processing activities. However, in order to stay within the space constraints of this paper and to illustrate points of interface between the upper echelons and strategic issue processing perspectives, the discussion here is limited to consideration of issue processing activities that involve interactions among an identifiable core group. The boundaries of core strategic issue processing groups are assumed to be fuzzy and unstable, nevertheless, as are the loyalties of group members, which are the reasons for not referring to these groups as "teams." Furthermore, no assumption is made regarding the membership on core issue processing groups. In particular, responsibility for processing all, or even most, strategic issues is not assumed to rest within the top management team. Instead, it is assumed that temporary task forces may be given responsibility for some issues. Such task forces may include some members of the top management team, but membership need not be restricted to members of the upper-most echelon of executives who formally comprise the organization's dominant coalition by virtue of title and position.

The implications of shifting the research focus from top management teams to core strategic issue processing groups are many, as are the new research opportunities afforded by such a shift. Before elaborating on these implications and opportunities, however, I will first describe two related features of the strategic issue processing perspective that differentiate it from the upper echelons paradigm. These are the position taken regarding who processes strategic issues and the nature of the hypotheses generated.

Who Processes Strategic Issues?

Bowman (1990) identified four levels of strategy addressed by the extant strategic management literature: Institutional strategy deals with how the firm fits into its social, political and legal environment. Corporate strategy addresses how firms choose the businesses they will manage, allocation of resources, and

achieving economies of scale. Business strategy deals with the positioning of businesses within product markets. And functional strategy focuses on how functional subunits align their activities with the needs of their firms' business and corporate strategies. In most cases, these alternative levels of strategy have a one-to-one correspondence with the unit of analysis studied, with institutional strategy representing the highest level of aggregation and functional strategy representing the lowest level of aggregation.

The phenomena of interest at each strategy level are to some extent unique, as are the research challenges. Consequently, different theories and different methodologies are used by researchers working at these four different levels and empirical research usually addresses one level of strategy to the exclusion of the others. Upper echelons research is conducted at the level of the business or the level of the corporation.' The implicit assumption seems to be that as long as both the predictors and outcomes of interest are assessed at the same level, working at either level of strategy is acceptable. This assumption may be valid for some phenomena, but the assumption is questionable when the phenomena of interest are strategic issues.

Numerous accounts of strategic decisions show they seldom are confined to the level of the "top" management team (e.g., Bower, 1970; Burgelman, 1983; Dutton & Dukerich, 1991; Hickson, Butler, Cray, Mallory, & Wilson, 1986; Miles & Cameron, 1982; Nutt, 1984; Quinn, 1980; see also Pfeffer, 1981) despite the fact that responsibility for strategic decisions may ultimately be claimed by the top management team or attributed to the team by others. Instead of being isolated within the top management team, the processing of strategic issues permeates the organization, involving individuals at many levels in the organization (e.g., see Gioia & Chittipeddi, in press). Corporate level decisions often require input from executives in the business units, and business unit decisions often require input from executives in functionally-defined subunits. Within the organization, involvement of people from lower levels may be formally solicited and structured, as when a task force is constituted and asked to study an issue and offer recommendations. Even when such formal mechanisms are not used, however, input is likely to be solicited from knowledgeable experts on an informal basis. Furthermore, strategic issues may *originate* at lower organizational levels, reaching the strategic agenda because advocates lower in the organization have been persistent in selling their issues and gaining the attention of top-level executives (Dutton & Ashford, 1990). Finally, as the institutional perspective acknowledges, strategic issues may originate outside the organization due to the actions, needs, or demands of external constituents such as customers, suppliers, competitors, allies and regulatory bodies of all sorts. Such issues can seldom be managed successfully without some inclusion of the relevant external constituencies in the decision process.

The reality of strategic issues is that regardless of the level of the management group charged with issue resolution, the processing of strategic issues often incorporates players from multiple levels, including the institutional, corporate, business, and functional levels. In order to fairly assess how the composition of strategic issue processing groups impacts their behavior, researchers must include in their measures of composition assessments of all players active in the process. Herein lies the major difference between the upper echelons and strategic issue processing perspectives: whereas the former assumes that a relatively closed and stable group of top level executives processes all (or most) strategic issues, the latter incorporates (a) the possibility that any particular top level executive may not be involved in some or all strategic issues, and (b) people other than top level executives can be key players for some or all strategic issues. Consequently, the strategic issue processing perspective requires that researchers determine who the primary actors are for each issue studied.

An example illustrates how hypotheses might be reformulated as a result of treating strategic issue processing groups as the units for study. Following the upper echelons paradigm, Bantel and Jackson (1989) hypothesized that top management teams heterogeneous with respect to functional backgrounds were more likely to be found in firms characterized by high innovation, whereas homogenous teams would be found in firms characterized by low innovation. This hypothesis implicitly assumes that the adoption (or creation) of innovations results from decision processes in which all top management team members participate more or less equally, and it assumes that decision processes are relatively isolated within the top management team. Three circumstances that would mitigate against finding support for such an hypothesis are (a) many top management teams customarily ask people from outside the team to advise them in their deliberations, (b) homogeneous teams in particular use task forces that include people from outside the team, and (c) within heterogeneous teams, decisions about innovations are frequently delegated to members whose functional backgrounds match the type of expertise relevant to the innovation. For circumstances such as these, heterogeneity of the top management team as a whole may be less relevant than the heterogeneity of the group of people actually involved in issue processing activities.

Studying the relationship between heterogeneity and innovation using strategic issue processing groups as the units of analysis would reduce the likelihood that circumstances such as those just cited could obscure relationships between the characteristics of issue processors and innovation. Using the strategic issue processing perspective, the reformulated hypothesis would be: the probability of innovative solutions being found and adopted for strategic issues increases to the extent issue processing activities include input and active participation by a group of people who are heterogeneous with

respect to functional backgrounds. As this example illustrates, hypotheses central to the upper echelons paradigm can be addressed from the strategic issue processing perspective, although different data would be needed to test the reformulated hypotheses.

In some cases, as in the example above, invoking the strategic issue processing perspective results in hypotheses that are substantively similar to available upper echelons hypotheses. Indeed, many of the propositions formulated by Hambrick and Mason (1984) could be made congrpent with the strategic issue processing perspective simply by performing the type of reformulation just illustrated, for the minimum requirement of the strategic issue processing perspective is that researchers specifically identify the players actively involved in processing strategic issues instead of assuming that titles and positions are indicators of involvement.

That the strategic issue processing perspective points to such alternative hypotheses may be sufficient to justify adding it to the upper echelons research repertoire, but such minimally reformulated hypotheses are not the most interesting consequences of adopting the strategic issue processing perspective. More interesting than such reformulated hypotheses are the new questions raised. Examples of such questions include: How is responsibility for the many aspects of strategic issue processing (e.g., sensing, formulating, structuring, etc.) distributed among members of the organization? Which factors (e.g., the composition of the top management teams; the nature of the strategic issue) influence the way responsibilities for issues are distributed among members of the organization, and how? And, how does the composition of the issue processing group influence outcomes such as whether the issue is actively processed or ignored, conflict, decision speed and quality, and acceptance and commitment to action? As these questions illustrate, the major difference between the questions posed by the strategic issue processing perspective and those posed by the upper echelons paradigm is that the strategic issue processing questions focus on the specifics of the processes through which group composition might ultimately impact organizational performance, whereas the upper echelons paradigm relegates these processes to the status of "black box" phenomena that are assumed, but not examined directly.

Tentative answers to some of the preceding questions are suggested by research on small group processes. In the following section, the results of studies of group composition are reviewed briefly for the purpose of developing propositions that link the compositions of strategic issue processing groups to their activities. Following this is a more speculative discussion of some of the questions that should be addressed but for which there is little relevant empirical evidence.

HOW DOES THE COMPOSITION OF STRATEGIC ISSUE PROCESSING GROUPS INFLUENCE THEIR ACTIVITIES?

Few studies relevant to the question of how group composition relates to specific issue processing activities appear in the management literature; instead, most of the relevant studies have been conducted by psychologists interested in understanding group processes and group performance. After fifty years of psychological research on groups, a large body of findings has accumulated. Two salient aspects of the relevant psychological studies art noteworthy. The first is that the primary composition dimension of interest has been the amount of *variance* among group members with respect to some characteristic (i.e., group homogeneity-heterogeneity); less attention has been directed to understanding how the central tendency (e.g., average age) of a group impacts its activities. The second salient aspect of psychological studies is that they treat group composition as the causal variable, the effects of which are examined using well-controlled experimental research designs; psychologists have not examined group composition as an outcome variable to be explained. Consequently, for the purposes of providing a summary review, it is convenient to compartmentalize the literature according to the dependent (outcome) variables examined. The general classes of outcomes that will be considered are performance on specific issue processing activities and group relations. The issue processing activities considered are creative decision making, problem solving, and task execution/ implementation. The aspects of group relations considered are internal processes (cohesiveness and conflict), stability, and external liaisons.

   In describing the research relevant to each of these outcomes, reference will be made to two aspects of group composition: personal attribute composition, which refers to the distribution of personal characteristics not directly relevant to task performance (such as personality and demographic background), and ability composition, which refers to the distribution of skills and abilities directly related to performance on the task at hand.

GROUP COMPOSITION AND PERFORMANCE ON SPECIFIC ISSUE PROCESSING ACTIVITIES

Creative Decision Making

   Creative decision making refers to the activities groups perform when they are faced with tasks that require formulating creative solutions to a problem and/ or resolving an issue for which there is no "correct" answer. Many strategic issues processed within organizations can be characterized as creative decision-making tasks in that novel solutions for resolving an issue are sought and there may be two, three, or many solutions that would be equally effective.

Several reviews covering research on the impact of group composition on creative idea generation and consensus-based decision making have reached the conclusion that heterogeneous groups are more likely than homogeneous groups to be creative and to reach high quality decisions (Filley, House, & Kerr, 1976; Hoffman, 1979; McGrath, 1984; Shaw, 1981). In these studies, high quality performance may mean that group members express satisfaction with the final outcome and agree with the outcome, and/or that an external panel of experts rate the group's performance as representing high quality. The finding holds for personal attribute composition, including personality (Hoffman & Maier, 1961) and attitudes (Hoffman, Harburg, & Maier, 1962; Triandis, Hall, & Ewen, 1965; Willems & Clark, 1971), as well as for ability composition (Shaw, 1976). Within the upper echelons paradigm, findings such as these have led researchers to hypothesize that heterogeneous top management teams will be found in more innovative organizations.

A simple explanation for why heterogeneity of personal attributes and abilities enhances creative decision making is that people who are dissimilar bring different perspectives to the task. In a sense, their differing perspectives can be considered resources available for use on the task at hand. When breadth of ideas is an important resource, heterogeneous perspectives seem to offer some advantages. For laboratory research groups, this simple explanation may be a sufficient one for the effects found, but an early field study highlights the fact that the activities of laboratory research groups are more constrained than are the activities of real work groups. In a study of scientists and engineers, Pelz (1956) found that productivity was positively correlated with the extent to which they were in frequent contact with colleagues whose training and expertise were dissimilar to their own. The more productive scientists and engineers created informal communication networks with peers who specialized in other fields. Presumably these communication networks served as conduits that supplied the research units with valuable information. Thus, differences in perspectives alone may not be the mechanism by which diverse groups achieve their creativity, as is often assumed. Instead, the effect of diversity may be due to the fact that more diverse groups draw upon a larger social and knowledge network when generating ideas. Observations of the behaviors that occur during the creative and consensus-building phases of group work are needed to explore this possibility; adopting the strategic issue processing perspective, researchers could begin to examine the role played by the external contacts of issue processing group members. A specific proposition to consider is:

> *Heterogeneous groups processing strategic issues that involve high degrees of creative thinking and judgmental decision making will, as a consequence of their external contacts, import to the issue processing group a broader range of information and possible solutions for consideration, in comparison to more homogeneous groups.*

Implied by this proposition is a second one that relates composition to the size of the tertiary network of vicariously involved issue processors:

> *When strategic issues are processed by heterogeneous core* **groups,** *the network of people who hear about the issue and who provide commentary to the core issue processing group will be larger and more diverse, in comparison to when issues are processed by homogeneous core groups.*

If heterogeneous groups develop more expansive networks and bring more diverse ideas to the table for discussion, it is reasonable to expect that heterogeneous issue processing groups would also generate a discussion process whose texture or form differs in other ways as well. For example, if time pressure is not great, heterogeneous groups could be expected to explore more alternative views. This exploration, in turn, may lengthen the amount of time the group takes to reach a consensus. If time pressures exist, such exploration may have negative consequences, however. These could include inability to reach a consensus, reliance on compromises or majority-rule voting processes as methods for governing the group, and perhaps lower acceptance of the group's final resolution. Although less acceptance of decisions is often assumed to be negative, it is possible that an unexamined benefit of skepticism is the development and use of more elaborate mechanisms for obtaining feedback, greater attention paid to signals suggesting failure, and greater willingness to change the group's decision in the face of negative feedback. Such effects may account for some of the variation in time used to process issues (e.g., Hickson, 1987; Nutt, 1984) as well as the degree to which the issue processing path appears to be relatively cyclic rather than linear (e.g., Johnston et al., 1991). To summarize, two propositions are suggested:

> *In the absence of clear time pressures, heterogeneous issue processing groups will invest more time in resolving issues that require creativity and consensus-building, in comparison to homogeneous groups.*

However,

> *In the presence of clear time pressures, heterogeneous issue processing groups will be less likely to reach consensus and more likely to resort to negotiation and compromises as processes for deciding upon which actions to take. Furthermore, heterogeneous groups will have less confidence in the superiority of their adopted resolutions, which will lead them to make greater use of post-decision monitoring and reevaluation.*

Problem Solving

Problem solving refers to the activity of finding answers to problems for which there are objective standards. In other words, performance on such tasks can be evaluated against verifiable, correct answers. The availability of an objective standard for assessing performance distinguishes these activities from creative decision making and consensus-building (cf. McGrath, 1984). In the context of strategic issue processing, problem-solving activities would be those that emphasize fact-finding and logical reasoning.

Some evidence bearing on the relationship between ability composition and problem-solving performance has been generated by research designed to examine what Steiner (1972) termed process losses and process gains. Not surprisingly, these studies support the conclusion that group performance is a positive function of the average ability of group members (see Laughlin, 1980). The relationship is not simply linear, however. For so-called "Eureka" problems (for which correct solutions are readily acknowledged as correct once they are discovered), the group needs only one member with the ability to discover the correct answer. For more typical problems, group performance is nearly maximized when at least two members have the ability to discover the correct answer. This pattern of findings can be summarized as "truth *supported* wins." This conclusion warns that if the correct answer is discovered by a sole person who has no ally in the group, the group is unlikely to adopt the correct answer as their solution to the problem. This is especially true if the person with the correct answer is of relatively low status (Torrance, 1959).

Research on conformity and social influence leads to a similar conclusion regarding the value of having at least two people present who agree on a correct answer that the majority of the group initially rejects. The most well-known social influence studies are the classic experiments of Solomon Asch, who asked subjects to judge line lengths after hearing the erroneous judgments of several other people. This research revealed that when a person's private judgment was unlike the judgments expressed by others, the person soon abandoned their own judgment, even when their answer was verifiably correct. However, in the presence of just one other person who agreed with them, subjects persevered in the face of opposition (Asch, 1951, 1956; see also Allen, 1965, and Sherif, 1935).

The typical patterns of expertise represented in strategic issue processing groups, or even on top management teams, has not been documented. The evidence just cited suggests, however, that better problem solving should occur in groups whose members have overlapping domains of expertise, in comparison to groups having a sole expert for each relevant knowledge domain. If we assume that most executives are true experts in only one domain, then achieving duplication requires having two experts from each relevant domain. Assuming that most of the problems strategic issue processing groups

face are not "Eureka" tasks for which the correct solution is obvious once stated, this research suggests the following proposition:

> *For strategic issue processing groups performing activities that involve large amounts of fact finding and logical reasoning, performance is enhanced when each area of relevant expertise is represented by at least two group members.*

In many organizations, managers are expected to first demonstrate their potential within a specific area of expertise; they then rotate through a variety of functional areas to develop a common knowledge base. High level strategic issue processing groups in such organizations would likely share much common knowledge, but depth of expertise for each area of knowledge would vary considerably. Such organizations may benefit from the particular configuration of expertise that, consequently, is likely to characterize strategic issue processing groups, for an interesting phenomenon observed within problem-solving groups composed of a mix of experts and relative novices is the "assembly bonus effect." Assembly bonus effects, which are indicated by people performing better within the group context than they would alone, accrue for high knowledge members interacting with others who are less knowledgeable (see Laughlin & Bitz, 1975; Shaw & Ashton, 1976). One explanation for assembly bonus effects is that high ability group members learn during their interactions with others of lower ability because they take on the role of "teacher." Serving in the role of teacher may lead high ability members to sharpen their own thinking. Another possibility is that the questions and inputs of more naive members encourage the more expert members to unbundle the assumptions and rules they automatically use when dealing with issues and problems in which they are experts (Simon, 1979). This unbundling may increase the probability of discovering assumptions that warrant scrutiny and decision rules for which exceptions may be needed. A specific proposition that follows from this line of reasoning is:

> *For strategic issue processing groups working on issues that involve large amounts of fact finding and logical reasoning, performance is enhanced when both experts in the problem domain and novices are represented in the group, compared to groups composed of experts only.*

This proposition is particularly interesting because it highlights the potential value of studies that fall at the intersection of strategic leadership, succession planning, and executive development (e.g., see Kerr & Jackofsky, 1989).

Few studies have examined the impact of personal attribute composition on group problem solving. The most evidence comes from research on sex

differences in group performance. Wood (1987) reports findings from twelve studies in which objective performance results could be compared for same-sex versus mixed-sex problem-solving groups. Across all studies, there was weak support indicating that mixed-sex groups outperformed same-sex groups of either males or females. Also, a recent study of mixed-ethnicity groups found evidence for superior problem-solving performance by groups with more diversity (Cox, Lobel, & McLeod, 1992).

Although there is very little *direct* evidence linking personal attribute composition to problem-solving performance, the available evidence leads to the expectation that mixed-attribute groups should outperform homogeneous groups when attribute heterogeneity increases the probability of the group containing some members who are capable of determining the correct answer to the problems being solved. Applying this finding to strategic issue processing groups suggests that personal attribute heterogeneity may occasionally facilitate problem-solving or fact-finding efforts, but this beneficial outcome would most likely be manifested only if expertise about the problem happened to be related to the personal attribute. For example, an issue processing group dealing with race relations may be more likely to base their actions on accurate conclusions about how minority members would react to a proposal if that group had relevant minorities represented on it. Similarly, groups dealing with problems that require them to accurately assess reactions from various religious, political, or consumer groups may have some advantage if these constituencies are represented. The general proposition suggested, therefore, is:

> *For strategic issue processing groups working on issues that involve large amounts 0ffact-finding and logical reasoning, performance will usually be unrelated to personal attribute composition. However, in situations where personal attributes are related to issue-relevant expertise, heterogeneity on the relevant attribute should enhance performance.*

`1 'o summarize, research on problem solving suggests that heterogeneity of expertise can facilitate fact-finding and problem solving, but studies of conformity carry an important lesson about the conditions under which the expertise of group members is likely to be heard and accepted by the group. Whereas an implicit assumption often made in the management literature is t   t   rise will be used, assuming it is present, psychological research clearly indicates 1   the availability of expertise in a group does not guarantee the oft hat expertise. Input from alone expert, even if accurate, is often ignored. A subsequent discussion of the role of leaders within strategic issue processing groups will return to this point.

Task Execution

In both the general decision-making literature and the strategic leadership literature, a distinction often is drawn between deciding upon a course of action and implementing that decision. As Johnston et al. (1991) point out, the assumption that intentional decision making precedes action may not be valid for all cases of strategic issue processing. Nevertheless, the distinction is likely to be meaningful at times (e.g., for issues related to major capital investments, large-scale technological changes, and organizational restrticturings), so it is useful to consider studies that shed light on the relationship between group composition and task execution.

In the psychological literature, studies of task execution typically use perceptual and motor tasks for which objective performance standards exist. One important feature of such tasks is that they are well-structured. Another important feature is that goals are clearly specified. In other words, such tasks involve implementation rather than design. Presumably, if the group has the requisite skills, the task is doable. Thus, how well the group focuses its energy on executing the task is a major determinant of performance. When considered in this light, task execution resembles the activities of top management teams during times of strategic stability or convergence (Tushman & Romanelli, 1985). Task execution activities may also resemble the strategic issue processing activities that dominate groups operating at the functional strategy level (as described by Bowman, 1990) where departments or other subunits are charged with implementing programs to achieve strategic objectives set at the business or corporate level.

Relatively few studies have assessed the impact of personal attribute composition on task execution, but overall the available studies tend to support the conclusion that groups composed of members who are *similar* with respect to personal attributes, including demographic characteristics (Clement & Schiereck, 1973; Fenelon & Megaree, 1971), are likely to perform equal to or better than groups composed of dissimilar members. This effect has been found for tasks that require a great deal of interdependence as well as for tasks iring relatively little interdependence. Thus, the following proposition is %uggested:

> */homogeneity of personal attributes facilitates the performance of itrategic issue processing groups working on relatively structured irrthlrtnentation activities, assuming their objectives are clear and their pet~/cwmance can be measured against objective standards (e.g., ROI, or{ owth rate, changes in stock price).*

c nnttlA+4t t   t   findings for personal attribute composition, studies of
Oh} it s ₄ ofnimsi   find that task execution is enhanced for heterogeneous

groups. Assuming group members are free to take responsibility for the tasks that match their abilities, task execution is better for groups composed of members with heterogeneous technical abilities (e.g., Jones, 1974; Voiers, 1956), which suggests the following proposition:

> *Heterogeneity of task-relevant technical skills and abilities facilitates the performance of strategic issue processing groups working on relatively structured implementation activities, assuming their objectives are clear and their performance can be measured against objective standards.*

For this proposition, the relevant indicators of the group's performance might include whether goals and objectives are achieved as intended and in a timely fashion.

The above proposition sounds both simple and straightforward, but it is worth noting that an adequate test of it requires knowledge of which skills and abilities are "task-relevant." This issue will be addressed in more detail later in this paper.

The discussion so far has focussed on the relationship between group composition and performance on several types of activities, including some that emphasize "doing" and some that emphasize "thinking." Here the focus shifts to consequences of composition often referred to under the general heading of "group processes," which includes the group's internal functioning, group stability, and external liaisons. Interest in group process derives from the assumption that group process provides the explanations for how and why the compositions of groups influence their performance.

Internal Group Processes

Group cohesiveness and group conflict have been the internal group processes most often studied. In the psychological literature, cohesiveness refers to the degree of interpersonal attraction and liking among group members. To assess cohesiveness, researchers almost always ask group members to indicate their personal feelings about other members of the group and/or their liking of the group as a whole. Several early studies found that interpersonal compatibility among members of a group enhanced performance. For example, when Air Force students worked in groups composed of mutually acceptable pairs, as determined by their sociometric choices, they performed better than when groups were created to avoid mutual compatibility (Stafford, Moore, Adams, & Hoehn, 1955). And when construction crews of carpenters and bricklayers were assembled on the basis of sociometric preferences, material and labor costs as well as turnover decreased significantly relative to when groups were assembled without regard for compatibility (Van Zelst, 1952).

Group cohesiveness does not guarantee high performance, however; if the group's attention and energies are not directed toward high performance, then cohesiveness may negatively impact performance or be unrelated to performance (Berkowitz & Levy, 1956; Festinger, Back, Schachter, Kelley, & Thibaut, 1952; Schachter, Ellertson, McBridge, & Gregory, 1951; Seashore, 1954; Terborg, Castore, & DeNinno, 1976). Reviews of research relating cohesiveness and performance conclude that the findings are inconsistent: positive associations have been reported in many studies, but negative associations and nonsignificant results have been reported also (Levine & Moreland, 1990; Lott & Lott, 1965; Stogdill, 1972). Some reviewers have concluded that the relationship between cohesiveness and performance is complex and depends on factors such as members' abilities, the leader's style, and task type (Levine & Moreland, 1990). Others have concluded that if the caveat is made that a group must view high productivity as a desirable goal, then the evidence generally supports the assumption that cohesive groups are likely to perform better than, or at least equal to, noncohesive groups (Shaw, 1971; McGrath, 1984). Thus, a reasonable proposition may be:

> *The performance of strategic issue processing groups will be debilitated by the presence of members who personally dislike each other.*

Group composition seems to play an important role in determining cohesiveness, but specifying the nature of that role has proved difficult. Haythorn (1968) reviewed numerous studies showing links between group composition and group cohesiveness or related variables. Many of those studies focused on personality variables. The conclusion from this research was that the effects of personality heterogeneity depend upon a number of factors, including the personality characteristics of interest, the task characteristics, and the extent of interpersonal contact. This complexity plus the methodological and theoretical questioning that arose among personality researchers and their critics during the 1970s has apparently stifled progress on this topic (see Driskell, Hogan, & Salas, 1987), however, so no clear conclusions can be drawn about the relationship between personality composition and cohesiveness.

Research relating group members' attitudes to cohesiveness is, fortunately, more easily interpreted. One of the most robust psychological principles is that people are attracted to others with similar attitudes (Byrne,1971; Heider, 1958). Given that cohesiveness is defined as attraction to other members in one's group (Shaw, 1981), it follows that groups homogeneous with respect to attitudes should be more cohesive. Because group members tend to become more similar in their attitudes as they interact over time (Newcomb, 1956), long-standing groups are especially likely to be characterized by attitude homogeneity and cohesiveness. Thus, the following proposition can be formulated:

*Strategic issue processing groups that are ad hoc collections of people drawn together temporarily around a specific issue (e.g., task forces) will have more dissimilar attitudes and be less cohesive than long-standing strategic issue processing groups that exist intact in the organization (e.g., top management teams). Consequently, ad hoc strategic issue processing groups may be less effective when performing issue processing activities that are facilitated by **personal attribute homogeneity (e.g., implementation tasks).***

Conceptually, it is possible to distinguish conflict from cohesiveness. Often when conflict is referred to, the reference is to verbal disagreement. Presumably, such disagreements need not be charged with negative emotions, but can occur in a neutral environment or may even be charged with positive emotion (see Sessa, 1991). For complex decision-making problems, the expression and discussion of conflicting opinions and perspectives ensures thorough discussion of a wide range of interpretations, possible solutions, and alternative consequences that might follow the acceptance of a solution (see Cosier, 1981; Janis, 1972; Schweiger, Sandberg, & Recliner 1989; Schwenk, 1983). Exposure to alternative views may improve the quality of thinking about the issue at hand and also stimulate learning, which may have some longer-term benefits (Nemeth, 1986). Unfortunately, however, dissent and disagreement often arouse negative emotional reactions, also (Nemeth & Staw, 1989; Schmidt, 1974), suggesting the following proposition:

The performance of strategic issue processing groups working on complex issues is facilitated by the open expression of conflicting views; however, such groups are likely to be characterized by relatively low cohesiveness.

With respect to internal group functioning, cohesiveness and conflict both appear to facilitate performance in some ways. This creates a dilemma because conflict tends to destroy cohesiveness. Use of task forces and other temporary groups may be one way organizations deal with this dilemma. Using temporary task forces does nothing to resolve a second dilemma, however, which is that some tasks may be performed best when conflict and cohesiveness coexist. The resolution of this dilemma requires differentiating between conflicts that arise out of personal attribute dissimilarity and those that arise due to dissimilarity of task-related skills and knowledges. The research literature suggests that when heterogeneity of expertise is required for task performance, the potentially damaging impact of the desired conflict may be moderated by composing groups of members who are known to be personal friends or who share similar attitudes, values, and interests in life domains not related to the task.

Group Stability

There is considerable empirical evidence showing that attitudes are, not randomly distributed throughout the population. Instead personality, attitudes, values, and beliefs vary systematically with several demographic variables, including age cohort (Bengston & Lovejoy, 1973; Elder, 1974, 1975; Thernstrom, 1973; Vroom & Pahl, 1971), sex (Eagly, 1987; Wood, 1987), education level (Kimberly & Evanisko, 1981; Rogers & Shoemaker, 1971), and curriculum choices (Holland, 1976). The correlations between demographic characteristics and attitudes and values provide the explanation for the finding that demographic homogeneity predicts cohesiveness (see Lott & Lott, 1965; Zander, 1979).

Recently, several studies have extended this logic, testing the hypothesis that group composition with respect to demographic characteristics predict group turnover rates. Given that homogeneity of attitudes and experience facilitates the development of group cohesiveness, and assuming conflict arises when heterogeneity is present, then two forces are likely to operate to create turnover: group conflict may lead some members to voluntarily withdraw from the group and/ or the group may pressure some members into leaving (McCain, O'Reilly, & Pfeffer, 1983; Schneider, 1987).

Several studies support the hypothesis that demographic heterogeneity is a useful predictor of group turnover rates for university faculty, nurses, top-level managers, and convenience-store field representatives (Jackson et al., 1991; McCain et al., 1984; Pfeffer & O'Reilly, 1987; Wagner et al., 1984). Studies that extended the analysis to the individual level found some support for the hypothesis that the higher group turnover rates in heterogeneous groups were due to turnover among those who are most dissimilar to the other group members (Jackson et al., 1991; O'Reilly, Caldwell, & Barnett, 1989; Wagner et al., 1984). What is much less clear, however, is which particular demographic characteristics are most relevant to predicting group turnover rates or to predicting which individuals will leave the group.

Until very recently (see Finkelstein & Hambrick, 1990), there had been little cross-fertilization between upper echelons research and organization behavior research on demographic composition as a determinant of turnover. The linkage is inevitable, however, given the considerable interest in relating CEO turnover to strategic reorientation and change (e.g., Greiner & Bhambri, 1989; Helmich & Brown, 1972; Tushman, Virany, & Romanelli, 1985). This literature indicates that strategic change often follows installation of a new, externally recruited CEO. Major strategic changes are believed to be more difficult when attempted by a long-tenured incumbent CEO.

Explanations for why strategic change and CEO turnover may go hand-in-hand generally emphasize individual cognitive factors. For example, tenure is thought to inhibit creative thinking because it creates strong commitment to

the status quo (Salancik, 1977), is associated with more conservative attitudes toward risk taking (Staw & Ross, 1987), and narrows the range of information sources brought to bear on strategic thinking (Katz, 1982). However, it is unlikely that these individual cognitive factors alone account for whether a CEO-with either long or short tenure-effects major strategic change.

Differences between long- and short-tenured CEOs may extend to the compositions of the strategic issue processing groups they activate, and these composition factors may partly explain any association between CEO tenure and strategic change. There are two reasons to expect that strategic issue processing groups are likely to be more heterogeneous early in a CEO's tenure and more homogeneous later in his or her tenure. Often turnover of the CEO is accompanied by turnover throughout the management ranks. This turnover alone should create a population of managers that is relatively more heterogeneous, compared to a population of managers that has already experienced the attrition of the more dissimilar members (see Jackson et al., 1991). Consequently, when strategic issue processing groups are created from this relatively heterogeneous population, they will mirror the heightened level of heterogeneity. In addition, it is reasonable to expect the emergence of relatively stable patterns of memberships in strategic issue processing groups over the course of a CEO's tenure. People who have dealt successfully with strategic issues in the past will be repeatedly called upon. The result, over time, is that the repeated exposure of strategic issue processing group members to each other gradually results in the homogenization of their attitudes, perspectives, and cognitive schemas; in the process, their creative capacity diminishes also. This line of reasoning is summarized in the following proposition:

> *The strategic issue processing groups activated early in a CEO's tenure are more heterogeneous than those activated later in a CEO's tenure, and as a result, strategic issue processing groups activated early in a CEO's tenure are more likely to resolve strategic issues creatively.*

Adoption of the strategic issue processing perspective may facilitate the development of insights into the processes through which change is created. For example, new insights might be gained by comparing the compositions of issue processing groups that stimulate major organizational changes (if not full-scale strategic change) with the compositions of issue processing groups that do not stimulate major changes. Such studies could also determine whether the issue processing activities that lead to change differ with respect to factors such as comprehensiveness (see Fredrickson, 1984); involvement of constituencies beyond the boundary of the primary issue processing group (Ancona, 1987, 1990); and, time spent exchanging information (see Stasser & Titus, 1985) and developing consensus and shared cognitive maps (Ginsberg,

1990; Walsh, Henderson, & Deighton, 1988), rather than using compromises to resolve disputes.

External Liaison Activities

As Ancona (1987) pointed out, psychologists have traditionally adopted an internal perspective for studying groups. Therefore, little of what is known about group composition effects relates to how group composition impacts performance on those tasks for which executives must adopt an external perspective. An external perspective is adopted whenever group members interface with their constituencies outside the group, including constituencies within the organization and those in the organization's external environment.

Consideration of the externally-oriented tasks of strategic issue processing groups reveals several topics to be studied. For example, it suggests the need to study how group composition influences another basic issue processing activity, namely persuasion. Persuasion activities include winning the support and commitment of those inside the organization, image management, resource acquisition, and all activities designed to shape the environment within which the organization operates. Thus, persuasion activities may be especially relevant to the successful implementation of decisions-a large, and largely ignored, aspect of strategic issue processing. Also, because the external perspective moves us from intragroup analyses to intergroup analyses, it raises the issue of the role of group composition for the second group that enters the picture, namely the constituency group. The composition of the constituency group may be important in and of itself in affecting how the strategic issue processing group relates to it. For example, groups may use different tactics when they interact with a constituency group that is homogeneous, compared to a heterogeneous one. Or, composition effects may be more complex. For example, issue processing groups may interact differently with constituencies whose compositions mirror their own group's composition than they do with constituencies made up of people who are dissimilar to the issue processors. Conversely, the trust constituencies have in an issue processing group may be partly influenced by whether the constituency feels its views are represented within the group, which they may infer from the demographic composition of the group.

Summary and Implications

The literature reviewed to this point demonstrates that simple conclusions about the effects of group composition on issue processing activities are not justified. A fine-grained look at the studies reveals that the effects of composition vary across different types of outcomes, as well as for the technical and personal domains of attributes (cf. Filley et al., 1976; Ziller, 1972). If a

strategic issue processing group is responsible for all the activities considered above, then it is quite difficult to predict what type of group composition would be optimal, for composition characteristics that facilitate some performance outcomes may hinder other aspects of performance.

If we assume that over time, strategic issue processing groups engage in a variety of tasks, then results showing that conflict facilitates performance on some tasks and cohesiveness facilitates performance on many tasks creates a serious dilemma. The dilemma arises because cohesiveness and conflict appear to be incompatible, yet the evidence indicates that both can be beneficial. This dilemma is exacerbated when researchers adopt top management teams as their units of analysis because their hypotheses make predictions about effects that must be upheld across aggregated issues. The aggregation occurs across issues processed at different times and across issues that are being processed simultaneously by (presumably) the same team. To realize the problems inherent in such aggregation, consider the case where a particular top management team's composition suggests it would experience conflict due to the presence of alternative perspectives. For processing issues that require creativity, this may be beneficial, but if the conflict lowers cohesiveness, there may be negative consequences for the processing of issues that require efficiently executing an action plan. When the consequences of composition are aggregated across all issues, the erroneous conclusion of "no composition effect" might be viewed as fitting the data best.

The strategic issue processing perspective avoids the aggregation problem because strategic issues are examined singly. Furthermore, by focusing more attention on behavior, a strategic issue processing perspective should shed light on the question of how issue processing can be effectively managed when both conflict and cohesiveness are valued. Carefully composed groups plus the selective use of ad hoc issue processing groups may be among the keys to this delicate management act. Temporary task forces would permit top management teams to easily change the composition of the issue processing group as needed to fit the requirements of the task at hand. In addition, the temporary nature of task forces may minimize any negative long-term consequences (e.g., turnover) of the conflict heterogeneous groups experience. Interestingly, recognition of the fact that no single group is ideally suited to all possible situations also underlies the growing interest in new work force management methods such as the stable core/flexible ring design described by DeLuca (1988).

A somewhat radical interpretation of the literature reviewed so far is that no single group *should* be completely responsible for the processing of any complex issue. Instead, various subtasks, such as fact finding and problem solving, creative thinking, and program implementation, should be assumed by subgroups whose compositions match the needs of the activities they are to perform. Applying this conclusion to upper echelons paradigm, which

assumes that the top management team is the core issue processing group for most strategic issues, leads to the following proposition: In general, the most effective top management teams will be those that (a) are diverse with respect to both personal attributes and abilities, and (b) assign subgroups of group members to issue processing tasks in accordance with the requirements of the tasks. Specifically, (b) would require that creative and judgmental tasks be carried out by subgroups that are heterogeneous in both personal attributes and technical skills, that fact finding and problem-solving tasks be carried out by subgroups composed of both technical experts and hovices, and that implementation activities be carried out by subgroups that are homogeneous with respect to personal attributes and heterogeneous with respect to technical skills.

The above proposition is complex and virtually untestable. The purpose for stating it is not to challenge researchers to conduct the disconfirming studies, it is simply to highlight the potential complexity of group composition effects and the difficulties they create for testing hypotheses formulated to treat top management teams as the units of analysis.

Progress in theory development would undoubtedly be speeded by descriptive research designed to document the extent to which the strategic leadership task involves processing various types of issues (e.g., those requiring primarily creative thinking, fact finding, problem solving, and implementation). In addition, descriptive information is needed regarding if and how strategic issue processing activities differ at the various levels of the firm. Such descriptive research is needed in order to build a grounded theory for predicting *a priori* how top management team composition impacts firm performance. Adoption of a strategic issue processing perspective should facilitate the accumulation of the needed descriptive data.

WHICH ASECTS OF GROUP COMPOSITION SHOULD BE STUDIED?

In the context of theory, reference to the general construct of composition may be useful, but when conducting empirical research or applying theory to the process of appointing members to task forces, the construct of composition must be decomposed to the level of single attributes. People can then be assessed with respect to each attribute of interest. This raises the question, "Which of the dozens of possible attributes that can be used to describe individuals are the most important ones?"

This may be one of the first questions anyone would ask if they were faced with the task of applying research results in an organizational context. For example, this question must be answered by those who wish to provide prescriptive advice about how to select members of a strategic issue processing

group and it must be answered by those who attempt to predict the likely behaviors and performance of existing top management teams.

In this paper, attributes have been grouped into two broad categories: (1) personal attributes, which include demographic characteristics such as sex and race as well as psychological characteristics such as values, personality and attitudes, and (2) task-related attributes, such as specific skills and abilities needed to perform the job at hand. When considering the likely consequences of group composition for strategic issue processing, the distributions of both categories of attributes must be taken into account simultaneously. Furthermore, within each category, several specific attributes should be considered simultaneously. Unfortunately, laboratory research on group composition has been univariate in design; several recent field studies of group composition have also focused on only a small subset of attributes (e.g., age and tenure). Consequently, we do not know whether the effects of skills and ability composition are relatively strong or weak in comparison to the effects of personal attribute composition. Nor do we know whether the effects of ability and skill composition differ for groups that are homogeneous versus heterogeneous with respect to personal attributes.

Given the paucity of both empirical evidence and theoretical arguments to decide the question of which attributes to study, practical considerations are likely to drive the choices researchers make. Among the practical considerations worthy of contemplation is, "What attributes are managers and executives likely to be concerned about?" This question is easily answered. A barrage of statistics describing the changing demographics of the U.S. work force have alerted most of the business community to the increasing levels of diversity with respect to sex, ethnicity, age, and family status, so concern about how the increasing demographic diversity of our work force will affect interpersonal relations at work is mounting rapidly (Jackson, 1991; 1992). Within a decade, even the upper echelons may reflect the changing demographics. Until then, there is little doubt that this diversity will be reflected on strategic issue processing groups formed by selecting needed talent throughout the organization. In addition, there is evidence of increasing executive mobility across corporations and industries, suggesting that job-related diversity is also on the rise. Add to this scenario the rapid globalization of many businesses, and the list of attributes that have great practical relevance is easy to generate. Hopefully, researchers will consider how environmental events are likely to impact the composition of issue processing groups and use identifiable environmental trends as harbingers of information relevant to deciding which aspects of composition need to be better understood before prescriptive statements are justifiable.

THE ROLE OF THE LEADER IN STRATEGIC ISSUE PROCESSING GROUPS

The upper echelons paradigm is one of several perspectives within the reemerging field of strategic leadership. As already described, the strategic leadership perspective arises from the conviction that leaders are important causal forces in the lives of organizations. It is distinguished from other perspectives based in part by its choice of top management teams as the unit of analysis, in contrast to the more traditional focus on CEOs.

In the upper echelons research to date, CEOs have been given status equivalent to the status of all other top-level managers. Their unique role within the top management team has been downplayed. Paradoxically, the unintended message seems to be: "leadership is important to the organization, but leadership is not important to the top management team." Yet, the influence of the leader within a strategic issue processing group is likely to be pervasive. The influence may be intentional or unintentional, positive or negative, instrumental or political, cause or consequence. Furthermore, the nature of the CEO's influence may change across the seasons of his or her tenure (see Hambrick & Fukotomi, 199 1). Regardless of its nature, if the leader is the CEO, his or her influence is likely to be substantial.

When one's purpose is understanding how group composition affects strategic issue processing, the actions of the leader cannot be ignored, for group members will most likely tailor their behavior based on cues from the leader in order to avoid jeopardizing their own personal status within the firm. This may be especially true when the leader is also the CEO. Thus leaders are in positions that allow them to shape group activities; in so doing, they may amplify, nullify, or moderate some of the natural consequences of composition.

A basic assumption of the strategic issue processing perspective as presented in this paper is that task assignment is one of the most powerful tools CEOs can use to nullify or take advantage of the effects of top management team composition. By delegating responsibility to a task force, which may simply be a subgroup of the top management team or may include others who are not members of the team, CEOs can control to a degree the compositions of groups responsible for dealing with various strategic issues. Experienced and astute CEOs may be particularly capable in their matching of group compositions to task demands (see Keck, 1990). (Note that a similar logic applies to the CEO's role in recruiting and selecting new top management team members.)

CEOs, or any other strategic issue processing group leaders, can also shape informal norms and structure the processes used for considering strategic issues. Inept leaders may squander the potential benefits of group diversity by not allowing adequate time for a full discussion to occur or by supporting norms that stifle the expression of disagreement in general, or the expression

of dissent by a minority faction in particular (e.g., see Bourgeois, 1980). Alternatively, they may be insensitive to the importance of moving from disagreement to consensus through the construction of new and genuinely shared understandings (Ginsberg, 1990), and instead encourage compromises to which no one feels committed.

Conversely, skillful leaders can use conflict-inducing decisions aids, such as devil's advocates and dialectical inquiry, to temporarily diversify a homogeneous group (Cosier & Schwenk, 1990; Quinn, 1980). And/or they can use conflict-reducing aids to uncover assumptions and values and to speed the learning process that is often needed before satisfying resolutions can be crafted (see Cook & Hammond, 1982). When conflict has been intense, regardless of whether it arose naturally or was induced, skillful leaders may attend more to the aftermath, ensuring that cohesiveness is restored.

Whether through skill or ineptitude, group leaders have the potential to neutralize both beneficial and debilitating composition effects, and for this reason, studies that attempt to link the composition of issue processing groups to the group's activities and outcomes should take the leader into account.

THE ROLE OF STRATEGY IN THE UPPER ECHELONS PARADIGM AND THE STRATEGIC ISSUE PROCESSING PERSPECTIVE

Within the upper echelons paradigm, the nature of the relationship between top management team composition and strategies, whether at the level of the corporation or the business, can be conceptualized in several alternative ways. Adopting a rational view of organizations, one might postulate that organizational strategy shapes the selection of top managers, so strategy can be treated as a determinant of top management team composition. Alternatively, if one views strategy as emergent, then the compositions of top management teams might be postulated to be partial determinants of organizational strategy. Or, adopting a contingency theory approach for explaining organizational performance, one might postulate that organizational performance is enhanced when the composition of top management teams fits the organization's strategic thrust. Such conceptualizations are possible within the upper echelons paradigm because strategy, top management team, and performance indicators correspond one-to-one for a target organization.

Despite the important differences among these three views of why and how top management team composition relates to strategy and performance, two common assumptions underlie the three types of propositions. These common assumptions are: (1) the leadership tasks of top management teams vary as a function of organizational strategy, and (2) some form of association exists

between a team's composition and their performance of these leadership tasks. For example, Michel and Hambrick (1992) assumed that when strategies required managing several diverse businesses, more diverse skills and knowledges would be needed for the leadership task, and therefore, top management teams would be characterized by greater heterogeneity of functional backgrounds. What they found instead was that top management teams in firms characterized by unrelated diversification strategies were relatively homogeneous with respect to functional background, with finance and legal expertise being dominant. These results suggest that Michel and Hambrick's assumptions about how strategy and leadership tasks correspond may have been incorrect.

The assumption that the leadership task differs across strategies is not unique to the upper echelons perspective-it is an assumption asserted and accepted by many authors and it is the basis for the growing literature on manager-strategy alignment (e.g., Ancona & Nadler, 1989; Gerstein & Reisman, 1983; Gupta, 1988; Gupta & Govindarajan, 1984; Guthrie & Olian, 1989; Hofer & Schendel, 1978). Importantly, however, the assumption is based mostly on scholarly logic, not empirical evidence. The finding of Hambrick and Michel warns that what seems like "obvious logic" (Kerr & Jackofsky, 1989, p. 157) may not be correct logic.

The logic of the scholars typically reflects beliefs about how executives *ought* to execute alternative strategies rather than observations of behaviors. Research carried out within a strategic issue processing perspective would begin to illuminate *actual* differences among leadership tasks associated with alternative organizational strategies (if any actually exist). Because the strategic issue processing perspective treats issues as the units of analysis, researchers need not assume that differing strategies are associated with different leadership tasks. Instead, their data can be examined to see whether and how strategy and leadership tasks covary.

Perhaps execution of the fundamental leadership task is actually quite similar across strategies. If so, strategy typologies may be red herrings, distracting researchers from noticing the commonalities. Alternatively, strategy and leadership tasks might covary, but in ways not anticipated. Or, the leadership task may vary largely as a consequence of features of the firm that are only loosely associated with strategy, such as structure and politics (e.g., see Shrivastava & Nachman, 1989).

Lack of specific and accurate information about how leadership tasks are related to strategies is a major obstacle facing researchers who hope to develop robust models of the linkages between strategy, top management team composition, and organizational performance. The large-scale, systematic job and task analyses required to document generalizable statements regarding how strategies relate to leadership tasks have not yet been conducted (Szilagyi & Schweiger, 1984).

The type of research generated by a strategic issue processing perspective could hasten the accumulation of information relevant to this problem. Why is this so? The reason relates to the fact that the strategic issue processing perspective decouples a firm's strategy from the strategic issues processed within the firm. Thus it encourages researchers to *empirically* address questions such as:

- **Do** the types of strategic issues processed within firms covary with the firms' strategies?
- Does the variety of strategic issues, or the speed with which issues must be processed, covary with strategy?
- Are strategic issues of different types handled by different types of issue processing groups-for example, are some types of issues more likely to engage the entire top management team rather than a subgroup from within the team?
- Are some types of issues more often delegated to a task force of "experts" while others are more often processed by a broadly representative and diverse task force?
- Are there some types of strategic issues that nearly all firms face and process similarly?

Answers to such questions, provided by studies born of a strategic issue processing perspective, should facilitate upper echelons research by providing evidence for checking assumptions concerning how strategy impacts the leadership task.

NEEDED: A TAXONOMY OF STRATEGIC ISSUE TYPES

Note that the preceding list of questions presumes the existence of a meaningful framework for categorizing strategic issues into "types." Research flowing from the upper echelons perspective does not distinguish between strategies and types of strategic issues. Implicitly, the two are treated as interchangeable. In contrast, process-oriented researchers have suggested numerous schemes for differentiating among types of strategic issues, including perceived differences based on the issue's relevance to functional domains (Walsh, 1988); source of origin, such as internal or external (Dutton & Ottensmeyer, 1987); and threats versus opportunities (Dutton & Jackson, 1987; Jackson & Dutton, 1988). Unfortunately, however, none of these categorizing schemes was intended to illuminate how corporate or business strategies influence the strategic issues that dominate the agenda of top managements. Furthermore, virtually no research has explored how these issue types might relate to the composition of the groups engaged by the issues.

CONCLUSION

Failure to fully specify the processes through which group composition is likely to impact strategy making and performance outcomes will impede the development of an accumulative body of useful empirical results. There is a striking resemblance between the current state of theory in the area of strategic leadership and the state of theory during the early years of psychologists' interest in group composition effects. Potentially important input variables have been suggested and outcomes likely to be affected have been identified. However, there is too little theory to guide researchers in predicting which particular inputs and outcomes are likely to be associated with each other, and under what conditions.

Associated with the early stage of theory development that characterizes research on how composition influences strategic leadership is the absence of taxonomies for categorizing independent and dependent variables. As this paper shows, when group composition is the independent variable of interest, it is useful to at least distinguish between composition with respect to task-irrelevant personal attributes and task-relevant technical skills and knowledges. Regarding dependent variables, a typology of strategic issue processing tasks that is based upon an analysis of the tasks performed by groups responsible for strategic issue management is clearly needed. Here the work of Mintzberg (1973) and Kotter (1982) may be of some help. However, similar analyses that treat the group rather than the individual as the unit of observation would be more useful. In other words, what is needed is an empirically derived taxonomy of the roles and tasks performed by management groups who are responsible for strategic issue processing.

In addition to improving our conceptualizations of task differences, there is room to expand our thinking about both the determinants of issue processing group compositions and other consequences of group composition. Those interested in predicting group composition will find several interesting hypotheses in a paper by Bantel and Finkelstein (1990). Concerning outcomes, one's approach to conceptualizing strategy will likely color one's judgment about which outcomes are relevant, but given the many schools of thought about strategic management (e.g., see Mintzberg, 1990), the possibilities for creative theorizing seem almost limitless.

As this creative theorizing begins, multiple models should be explored. To date, the causal model most often adopted treats composition as a determinant of group processes and outcomes. It is important to keep in mind that other causal models may operate in natural settings. For example, Bantel and Jackson (1989) suggested that the correlation they found between organization innovation and top management team composition might be explained by a very different causal model: Rather than composition being a determinant of innovation, it is possible that organizations that identified innovation as a

desired outcome intentionally selected top executives so as to construct top management teams that fit their intuitive theories about how composition and performance are related to each other (e.g., if innovation is the goal, be sure the top management team has executives from diverse backgrounds). Another causal model was suggested in a recent article by Eisenhardt and Bourgeios (1988). Based upon their observations of strategic decision makers, they speculated that when political activity among members was high, demographic composition would be used as a vehicle for the formation of coalitions. In their model, group composition was neither a determinant of outcomes nor a dependent variable of interest. Rather, it was an incidental structural feature that influenced the texture (not the probability of occurrence) of the political activity that occurred within groups.

This paper is intended to stimulate a second prong of research to complement the work already underway to test Hambrick and Mason's upper echelons perspective. But with research, as with garden tools, the advantages that accrue with the addition of a second prong are modest. It is only with the addition of the third and fourth prongs that the tool becomes truly functional for our many needs. Hopefully, those who read this paper and find it at odds with their own world views will soon take on the task of forging those third and fourth prongs.

ACKNOWLEDGMENT

NOTES

1. It should be noted that while top management teams are the leaders of interest, the upper echelons perspective treats organizations as the unit of primary interest. The choice of financial performance measures of outcomes reflects this.

2. Mintzberg (1990) provides an excellent review of the schools of thought in strategic management, and suggests ten categories that capture the dominant theoretical perspectives. Using his configural model of the field, the strategic issue processing perspective might best be considered a hybrid that incorporates elements of the cognitive, learning, and political schools. It is also consistent with Hickson's (1987) description of "dual rationality."

3. The upper echelons perspective generates primarily cross-level hypotheses: team characteristics are used to predict organizational outcomes (see Rousseau, 1985). However, these cross-level hypotheses are formulated within a particular strategy level-either within the level of business strategy or within the level of corporate strategy. Because the hypotheses are assumed to hold at both levels of strategy, the perspective is a multilevel perspective.

4. Importantly, the difference between these alternative configurations of represented expertise could not be easily detected by a measure such as Blau's (1977) heterogeneity index, which is often used to calibrate composition with respect to functional background.

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