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TOP MANAGEMENT TEAMS AND ORGANIZATIONAL RENEWAL

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Increasingly the makeup of the top management group is believed to affect the development, identification and exploitation of strategic opportunities. This paper explains a creative management model, which goes beyond conventional strategic management, and identifies the behaviors of top managers needed for the ongoing renewal of their business. It is proposed these behaviors cluster and can be aligned with different and distinct cognitive styles or types. The implication is that top management groups should be composed of a mix of types. This paper posits a mix of Jungian types, Intuitives, Feelers, Thinkers and Sensors. This diversity can yield great strength if the differences can be focused and unified. Propositions and suggestions for further empirical research are developed.

The strategic management (SM) framework which has evolved over the past 40 years and has come to dominate North American thinking about the principal functions of senior managers has, more recently, been the subject of a good deal of criticism, both from practitioners (Peters and Waterman, 1983) and theoreticians (Weick, 1979; Pascale, 1984). It seems that while the conventional SM process allows managers to maintain, direct and improve existing activities, it is less able to promote and accommodate the radical ideas and innovative behaviors needed to renew established businesses. Indeed it may be counterproductive in this regard.

With its emphasis on problem-solving, the SM framework implicitly stresses the role of the senior, synoptic, singular executive: one individual, or group with an established understanding of how the business functions. Within this group there exists a shared 'cause map' (Weick, 1979) or a 'dominant logic' (Prahalad and Bettis, 1986): a structure of knowledge about their business, which for them defines 'rationality'. Facts which can be plotted onto this map of the business are accepted; data which cannot be assigned coordinates are not perceived, are ignored if they are perceived or are treated as an aberration.

For the top management group, behaviors consistent with rational thought are implied. Individuals predisposed to plan, act and evaluate would fit; others, with different behavioral predispositions, would not. Intuition, insight and feelings are suppressed because they do not fit within the accepted SM process. Individuals openly exhibiting these types of behaviors cannot be accommodated within the conventional SM framework and are often excluded from the process, even though their contributions may be valuable. SM fits the people within its rational-analytic procedures, rather than expanding the process to fit the people, and their different abilities, predispositions and preferences.

For these reasons dissatisfaction with the SM framework has increased, resulting in a renewed focus on the top management group, the dominant coalition (Cyert and March, 1963), as it impacts firm strategy and organizational performance. As Hambrick (1987: 88) explains, 'This view contends that performance of an organization is ultimately a reflection of its top managers.' Implicitly this view holds that when it comes to understanding strategy and performance, the people are equally as important, and perhaps more important, than the process. But neither is this view entirely

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satisfactory, for it ignores the processes needed by any large organization to make decisions and take concerted action. Even more importantly, it lacks a sense for the role and function of the executive group.

The composition, or form of the top management group needs to be related to its function. Barnard (1938: 215) contends 'Executive work is not that *of* the organization, but the specialized work of *maintaining* the organization in operation.' When narrowly interpreted, this view can be construed as supporting the limited plan–act–evaluate functions for the executive implicit in the SM model. However, in any changing, competitive environment, long-term maintenance/existence of the business requires the ongoing (re)creation of the business and the logic by which it is managed. This renewal, too, is a critical executive function.

Large organizations require a process for taking concerted actions. The broad-based adoption of SM technology suggests it has fulfilled a need in this regard. We must be careful not to discard, out of hand, even a partially useful process. The SM model is powerful because it prescribes a process, as well as a function (or functions) for the top management group within that process. However, the process and prescribed functions are limited and do not take advantage of the full range of human cognitive abilities. The SM framework is not so much incorrect as it is incomplete. A broader perspective on the top management process, an enhanced model, taking more complete advantage of the human potential, could help bridge the gap between the appropriate function of the executive and the makeup of the top management group.

BEYOND STRATEGIC MANAGEMENT

Stepping back and viewing the question from a philosophical perspective, the SM framework's principal shortcoming is its base in a naive realism. It tacitly assumes that reality is a given which exists 'out there' and is accessible through our senses. These sensations, these supposed objective perceptions or facts, can then be subjected to rational thought. Although the need for action is recognized, it is regarded largely as the servant of thought. Facts evaluated by a rational analytic thinking process are regarded as more important than insight, feelings and even empirical experience! The classic SM framework emphasizes the use of conscious, analytic thought processes to the exclusion of any other; even though non-rational or, to use Barnard's word, 'non-logical' processes and their importance have long been recognized (Barnard, 1938; McKenney and Keen, 1974; Mintzberg, 1976).

In a recent article, Hurst (1986) suggested that the emphasis of the SM framework on logic and rationality precludes it from being helpful in the innovative, creative processes which allow organizations to enact fundamental change, to renew themselves. Logic and rationality depend upon normative structures based in the past, and methodologies such as SM which appeal to norms of rationality—measurability, efficiency, consistency—perpetuate the past. In short, because SM is based on a logic developed from past experiences, it is an appropriate methodology for defending an established business, but is less able to prospect. It cannot deal well with novelty and ambiguity; it cannot bring into being those new activities which lie outside the structure of the managers' current understanding of their existing business, but which may well be required as part of tomorrow's business.

A classic example of a flawed logic based upon past experiences is illustrated by the actions of Sewell Avery, CEO of Montgomery Ward following World War II. Avery convinced himself, based upon a study of economic history and his own experiences after World War I, that economic depressions followed wars. Based on this logic, Montgomery Ward, in the years following 1945, did not expand, and even deferred basic maintenance expenditures in order to preserve cash for the anticipated depression. Meanwhile Robert Wood at Sears correctly perceived the 'tremendous foundation of purchasing power that had been held back by the war'. Sears expanded aggressively to become the dominant U.S. department store chain. Avery was forced to depart Wards in 1955 (Worthy, 1984: 219).

The Avery story provides a simple, yet dramatic, example of a flawed logic retrospectively derived from past experiences. The complex of logics and their relationships underlying a sophisticated SM approach in any large organization are many, subtle and difficult to surface. However, business redefinition requires a shift in the logic that is imbedded in any well-developed

SM process. Conventional SM incorporates no means to unlearn what has been learnt, although there have been developments in this direction (DeGeus, 1988). To deal conceptually with this shortcoming, Hurst (1986) has extended the SM framework to encompass what he calls the creative management model.

The creative management model

The creative management (CM) model is built on the philosophical assumption that the real world which surrounds the organization is a dynamic construct enacted by the members of the organization over time. This view is shared by Weick (1979: 228), as he explains, 'the environment is viewed as an output rather than an input. On the basis of enactments and interpretations people construct a belated picture of some environment that could have produced these actions.' Organizational realities, like personal realities, consist of complex interactions of the objective, tangible ('out there') and the subjective cognitive ('in here') elements.

Implicit in the CM model is the assertion that organizations capable of creating tomorrow's businesses while maintaining today's will require a diverse group of senior managers, able to perceive the world differently, yet able to participate in a process that transcends these different views to enact a complex organizational reality. In the CM framework the emphasis is on top management teams which can envision, or recognize and frame, new opportunities, as well as solve or exploit them (Bower, 1982). By embracing recognition, opportunity-framing and problem-solving, the CM model subsumes strategic management and provides additional insights into the composition, leadership and processes of top management teams.

As illustrated in Figure 1, the CM process is conceived of as passing through four levels or modes of cognition. When (subjective) time is considered, the model incorporates seven recursive and not necessarily completely sequential stages whereby an original idea is transformed from an intuitive insight, a vision, into action—eventually to become a remembered 'reality'. Tracking the progress of an idea from its original conception to its final realization helps to explain the model. The classic SM model deals explicitly with only Stages 3 through 5, the 'plan–act–evaluate' stages. Because it does not consider the cognitive levels of intuition and feeling, the SM framework is unable to supply insight into the nature of recognition by organizations. How do organizations come to fundamentally new approaches to the way they go about their business? How do they learn? By ignoring the other stages in the process and overemphasizing the linear, in what is in fact a recursive process, the SM paradigm misses key aspects of the creative learning process.

The CM model makes it clear that strategic thinking (Stage 3) does not take place without antecedents. It is based heavily upon earlier expectations and past experiences (Stages 4 through 7), modified by what happens in Stages 1 and 2. In addition, rationality depends on logic structures developed after action. People, and especially organizations, truly understand (Stage 5) only after they act (Stage 4), not before. Anything else is speculation. The model makes it clear that radical innovation (Stage 1) represents a break with the thought structures, the logic of the past. Initially, an innovation will not be based on rationality and logic because the supporting conceptual structures are not yet in place. Conversely, highly structured thought, as well as tradition, can interfere with, and inhibit, insight and innovation.

Thus, in the CM model a strategy is initially a *post-hoc* rationalization of a successful activity. As Weick (1979: 188) explains:

> The only thing that can be selected and preserved is something that is already there. This simple reality keeps getting lost amidst the preoccupation of people in organizations with planning, forecasting, anticipating and predicting. . . . Organizations formulate strategy *after* they implement it, not before. . . . The more common (and misleading) way to look at this sequence in organizations is to say that first comes strategy and then comes implementation. That commonplace recipe ignores the fact that meaning is always imposed after elapsed actions are available for review.

As the activity becomes standardized, feedback from Stage 5 to Stage 3 occurs. Successful behaviors are interpreted into a causal model which drives the organization's routines and corrects deviations from course.

By making explicit the dimension of time the CM model allows the renewal function to be

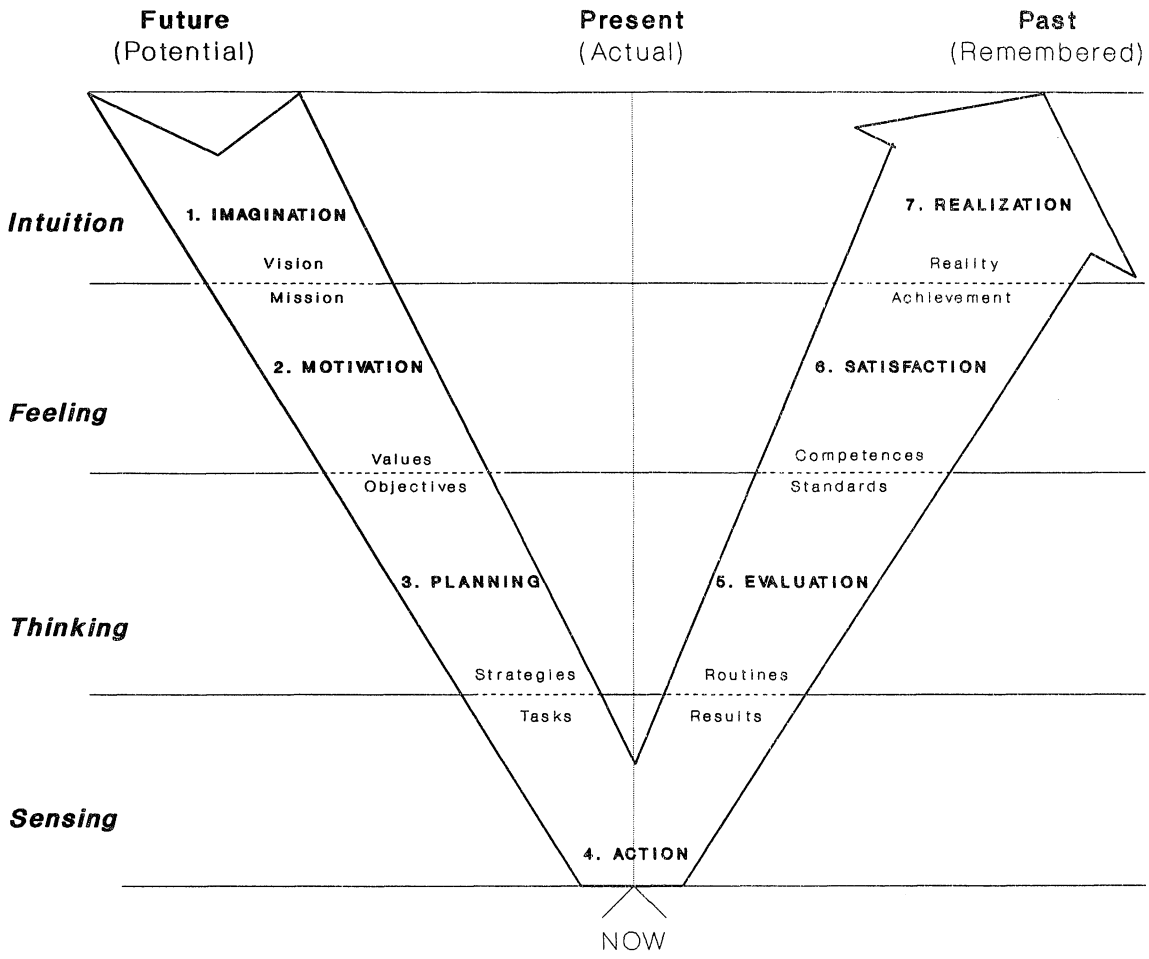

Figure 1. The creative management model

seen as a learning process. The time dimension in Figure 1 is not the objective time of physics but subjective time, views of the future and memories of the past as seen from the perpetual 'now' in which all human cognitive systems function (Jaques, 1982). With subjective time the creative process can be seen to be a learning process whereby successful innovations within an organization, new logics for doing business, are institutionalized and made routine. Not all organizations, and more particularly not all top management groups, are necessarily equally adept at, and receptive to, the development of new logics. These biases may be reflected in the organization's pattern of actions, its strategy.

There is more to the CM model than the capacity for prospective or retrospective thought. The model, as shown in Figure 1, contends that different modes of cognition are dominant at different levels in the process. These different modes are believed to have an underlying relationship with subjective time orientation; sensing may be associated more with the present, intuition more with the future (Mann, Siegler and Osmond, 1971) and one might also suspect with the remembered past (in contrast to the experience of the present). But, more fundamentally, these different modes are believed to represent distinct cognitive preferences.

Cognitive modes

The different levels in the CM model are related to and emphasize different modes of cognition corresponding to the four fundamental psychological functions outlined by Jung (1960). These

Table. 1. Level in the CMM and Cognitive Model

CM Level	Function: Information Gathering	Function: Information Evaluation
I	INTUITION	
II		FEELING
III		THINKING
IV	SENSATION	

processes are arranged by CM level and function in Table 1. Jung contends that while all individuals have the capacity for, and make use of, all four modes, each has a dominant function. The Myers Briggs Type Indicator (MBTI) (Myers, 1962) has been used extensively as a measure of an individual's preference on each of these four functions.

The two information gathering modes are *Sensation* (S) and *Intuition* (N). *Sensation* mediates the perception of physical stimuli via the five senses. Through *Sensation* an individual becomes conscious that something exists physically. *Intuition*, on the other hand, mediates perception via what is thought to be an unconscious patterning process—the individual goes beyond the differentiations yielded by the *Sensation* process to see whole relationships and patterns, either in the world of physical phenomena (Extrovert preference), or in the world of ideas (Introvert preference).[1] By allowing the detection of gaps between perceived parts this mode gives individuals the ability to see unrealized potential within the stream of events which surround them. *Sensation* and *Intuition* then are opposite but complementary mental processes used to gather information about the world.

The two information evaluation modes are *Thinking* (T) and *Feeling* (F). Each mode appeals to a different type of evaluative process. *Thinking* links ideas impersonally using logic and notions of cause and effect. *Feeling*, on the other hand, bases evaluation on personal and group values. As Jung makes clear, *Thinking* and *Feeling* are complementary functions for the *evaluation* of information, just as *Sensing* and *Intuition* are complementary processes used in the *gathering* of information. Each process within a pair is in tension with the other, but it can be a creative tension. Subjective time is the dimension which mediates the tension. It is these functions or layers which creative management must transcend.

The levels in the CM process are layered to reflect the renewal function of the executive as it relates to Jung's cognitive functions. Sensing deals with physical stimuli, action and reaction, in the here and now. Behaviors based simply on sensation can be thought of as reflexive; a stimulus evokes an instinctive or reflex response. Actions, other than reflex responses, have input from the higher levels. For example, the thinking–planning level will, based upon accepted logics, delineate tasks to guide action. The results of actions taken also feed back into the thinking/evaluation activity. Sensing and thinking are adjacent layers in the model because, prescriptively, prospective thinking precedes, and retrospective analysis, or sensemaking, follows action.

At the intuitive level a vision or insight into a new way of doing business does not by itself result in action. Because it is outside the established logic of the business, it cannot be evaluated by the thinking process. Therefore its worth, whether positive or negative, cannot be logically derived and must be based upon personal or group values. A positive feeling must be created for the idea if it is to overcome the established logic, result in action and thus change the understanding of the business. Accordingly, the feeling mode is positioned between the intuition and thinking layers in the model.

The layering in the CM model is based upon Jung's conception of the 'psychological functions' for several reasons. This conception may be related to basic human physiology. As Taggart and Robey (1981: 189) point out, 'Jung's theory of personality identifies two dimensions of human information processing that seem directly related to right and left brain activity.' Typically, *Sensing* and *Thinking* are left hemisphere related and *Intuition* and *Feeling* right hemisphere related. This duality and Jung's conception may have deep and perhaps related roots in human information processing, psychology and philosophy. Although there are other cognitive typologies (Hampden-Turner, 1982; Gardener, 1985) on which a model of creative management could be built, in our

[1] Jung described Extroversion and Introversion as orientations in attitudes of personality. This distinction can be helpful in a detailed understanding of the CMM and management teams, but will not be developed in this paper.

estimation none has as strong a conceptual and philosophical base for this application. However, in the last analysis this model will be judged by its utility; the meaningful implications it has for the practice of management.

Top managers' behaviours and cognitive preference

The conceptual linkages between the creative management process, cognitive mode and behaviors are sketched in Table 2. Although the empirical relationships require further validation, the table is adapted from existing empirical evidence (Myers, 1962; Keirsey and Bates, 1978; Macdaid, McCaulley and Kainz, 1986). There are other possible arrangement of type (Mitroff and Kilmann, 1975; Keirsey and Bates, 1978). However they tend to be finer-grained, employing more, mixed preferences than the four utilized in Table 2. Given our current understanding, the arrangement in Table 2 seems to depict the most natural flow through the stages of the creative management process.

The cognitive preferences, or types, outlined above cover the spectrum of ways in which information is gathered and evaluated by individuals. In Table 2 each type has been associated with particular cluster of behaviors and positioned within the layers of the CM model. The implication is that to effectively handle a creative process a management group needs these different

Table 2. Relationship between cognitive preference and behaviors

Level in CM process	Cognitive preference	Concerned with	Handle these with	Tends to be	Examples of behaviors
I	Intuition	Possibilities and patterns, ideas	Metaphors and symbols	Ingenious and integrative	Sees what others do not. Espouses new ways of working at things. Proposes new ideas. Disregards practical details. Describes with metaphors and symbols. Creates organizational stories and myths.
II	Feeling	People and values	Force of personality	Enthusiastic and insightful	Inspires peers and subordinates. Responds to a challenge. Sponsors new ideas. Shares information, power and resources. Brings people together. Rewards with recognition and praise. Promulgates organizational stories and myths.
III	Thinking	Cause and effect things	Regulations and language	Reliable and orderly	Matches goals to resources to results (i.e. plans). Organizes people; coordinates. Balances novel with routine. Rewards when outcome exceeds plan.
IV	Sensation	Activities, events	Spontaneity and action	Adaptable and practical	Matches skills to tasks. Attention to practical details. Makes things work. Describes what has occurred in concrete terms. Results are their own reward.

Source: Adapted from Myers (1962) and Keirsey and Bates (1978).

behaviors, and accordingly should be composed of individuals with the different cognitive preferences. Although individuals may be able to exhibit a variety of behaviors it is unlikely they will be equally able at each set of behaviors, or indifferent amongst them. They will have a preference.

Of course, cognitive preference is not the only factor to consider in forming a top management team. The model does not indicate the sources of the raw material for cognition, what information is gathered (and evaluated). However, it is reasonable to expect that, within limits, variety in output (actions) is related to variety of input (information). Much of the information available to a top management group will be directly related to the personal background and experience of team members. Simon (1988: 16) contends that 'expertness is the prerequisite to creativity'. He suggests that experts have 50,000 'chunks' of knowledge in their area of expertise which it takes at least 10 years of experience to acquire. But not every expert (with 50,000 chunks of knowledge in a given area) can necessarily use that knowledge creatively.

Indeed, as Koestler (1976) reports, often the insight occurs after the idea generators have disassociated themselves from the specifics of the puzzle they are attempting to solve. James Watson, whose insight uncovered the double-helix structure of DNA, recounts his need to remove himself from data derived from months of chemical and X-ray experiments, while Francis Crick, his co-researcher, felt a need to remain immersed in the data. (Sensation-Thinking preference versus Intuition–Thinking preference?)

> The next few days saw Francis becoming increasingly agitated by my failure to stick close to the molecular models. . . . Almost every afternoon, knowing that I was on the tennis court, he would fretfully twist his head away from his work to see the polynucleotide backbone unattended. . . . Francis' grumbles did not disturb me, however, because further refining of our latest backbone without a solution to the bases would not represent a real step forward (Watson, 1969: 114).

None of this is to diminish the importance of expertise acquired through diligence and hard work, but rather to suggest other factors are also at work. We would argue that individual cognitive preference merits consideration. The involvement of different cognitive preferences at different stages in the process and linking the stages together over time has not received the attention it deserves, either in theory or in practice.

Creative management: a need for integration

The argument has been made above that an effective CM process requires different behaviors, and therefore cognitive styles consistent with the roles implicit in the different layers of the CM model. With such differentiation in cognitive orientations comes a need for integration (Lawrence and Lorsch, 1969)—a way of allowing for, or facilitating, the exchanges necessary to bring about coherent action. The most efficient means of achieving the required integration depends on the type of interdependence (Thompson, 1967; Galbraith, 1973). As illustrated in Table 3, the CM process presents different types of interdependences between its different levels.

Table 3. Integrating cognitive types and levels within the creative management process

Level	Cognitive type	Concern	Integrative mechanism	Type of interdependence
I	Intuitive	Patterns and possibilities, ideas	Individual's perceptive abilities	Independent
			Informal, face-to-face	Reciprocal
II	Feeler	People	Task forces	Reciprocal/ sequential
III	Thinker	Cause and effect, plans	Policies, procedures, rules, hierarchy	Sequential
IV	Sensor	Activities, events		

In explaining the interdependences it is helpful to make the simplifying assumption of a different individual at each level. Even though radically new ideas may be stimulated by certain antecedent conditions, they seem to be the independent creation of a single mind (with intuitive preferences and abilities) (Koestler, 1976). Generating new insights is not thought to be a group activity. Once discerned the exchange between the intuitive, idea generator, and the feeler would appear to be reciprocal. If the feeler is to inspire and energize the organization, the feeler and idea generator must talk face-to-face. (They can, of course, be one and the same person.) The feeler must appreciate the idea sufficiently well to move it forward. This requires the feeler to listen to, and question, the idea generator. Also it is likely that articulating the idea causes the idea generator to better define his 'vision'.

Because the idea cannot be evaluated logically the feeler must not only communicate it to the thinker, but also create a sense of energy and excitement about the idea. The thinker can then prepare for implementation. This relationship is also a reciprocal type of interdependence, but may tend towards the sequential as the link between idea generator and feeler may need to be richer interpersonally than the link between feeler and thinker. Given the nature of the task, and their concern for people, feelers are likely to use task forces to accomplish the necessary integration.

The link between thinkers and sensors can be more sequential. Once the thinker has 'planned' for implementation the sensor's role (doing) can be communicated by policy, procedures, rules and specification of tasks (hierarchy). However, to the extent the new idea requires new tasks which are in conflict with established and accepted routines it will be important for the sensor to also have enthusiasm for the initiative.

Such sequencing of interdependent activities may represent a normative ideal; it is not necessarily descriptive of practice. For example, feelers may bypass thinkers, interacting directly with sensors, 'bootlegging' the initial implementation of the creative idea. At the thinking level plans may be developed only after early implementation, not before. Of course, this is more likely to happen when the thinkers in the top management group are wedded to their established plans based upon existing logics and are unwilling to experiment with novel approaches.

This sequence also recognizes that the dominant coalition may not be a group in the social-psychological sense, where all members have frequent face-to-face interactions. Rather, it may be a series of interchanges over (objective) time between individuals, each with a predisposition for certain behaviors. These interchanges are the result of complex stimuli, and detailed consideration of them is beyond the scope of this paper. However, evidence from Belbin's (1981) work with groups of managers in a business simulation suggests that effective groups had members (Belbin called them Chairman and Teamworker) concerned with transcending individual differences and facilitating the process. In our framework such individuals would be oriented towards integrating the levels of the CM process amongst people and organizational units, and over time.

Power and influence in the creative management process

The CM model has significant implications for the study and practice of the processes through which power and influence are exercised within organizations. In the SM model the communication channels and relationships considered important in the exercise of power are those of the formal organization hierarchy. This is consonant with the framework's underlying philosophy—if reality exists objectively and is accessible to rational instruments, then where else can the many partial views be integrated except in the synoptic mind of the CEO/strategist? For only he or she has the panoramic view of reality by virtue of a superior position at the apex of the organization. Information flows up, directives down. In contrast the CM model stresses rich and fluid communication channels and relationships making up the 'neural' network, a cognitive framework within which the organization will scan, describe and develop its version of 'reality'.

How then should an organization in search of renewal proceed? The interaction patterns required for renewal assume a broad distribution of influence within the management team, and

that all cognitive types are represented. No single cognitive mode dominates the ongoing negotiation process. In support of this view Friedlander (1983: 200) states that sustained 'power imbalances diminish [the benefits of] heterogeneity and contact and thereby diminish system learning'.

This does not necessarily mean power should, or will, be uniformly and statically distributed. Rather, power must shift according to the 'authority of the situation' (Follett, 1941). At the outset, when the issue is highly ambiguous, the intuitive mode is required and those individuals with significant capacity in this area should assume more influence, regardless of their hierarchical level within the formal organization. As the renewal process moves to the feeling dimension the motivation of the team becomes critical. Individuals capable of evoking and expressing shared values should now have more influence. The intuitives, while still involved, would exhibit less influence. Subsequently as the task shifts to planning and action, the process requires that thinkers and sensors become predominant. Thus, in an ideal process, each cognitive type asumes influence as determined by the needs of the evolving renewal process. The relationships between the individual in the (temporarily) dominant role and the rest of the team has been described by Greenleaf (1977) as *primus inter pares*, first amongst equals. Like strands in a tapestry, now in the front, now in the back, individuals on the team together weave a cognitive fabric, the pattern of which will express their version of a renewed organizational reality.

What happens when a cognitive type is not available on the team? Theoretically, a cognitive (and therefore behavioral) void exists. There is no-one with the cognitive preference needed to influence the renewal process in the desired way at a particular stage. If, however, there exists within the group an awareness of the need for different types of cognition and behavior, as well as some capacity to perform the role, then it is possible that one or more members of the team may spontaneously assume the 'vacant' role. In this process of self-organization the renewal process proceeds by evoking the needed but less preferred cognitive processes from members of the management team. Organizational adaptation and individual learning are combined.

Implications for top management groups

The CM model generates a number of insights into the composition of, and processes within, top management teams. From a *prescriptive* point of view, the CM model suggests that an 'ideal' top management group would be made up of individuals capable of functioning in each of the four cognitive modes. Since individuals seem to have stable cognitive preferences (Myers and McCaulley, 1985), an 'ideal' team needs several different 'types' of individuals to assume the variety of roles required. The general implication is that in addition to the *Sensing* and *Thinking* modes implied by the SM model, *Intuition* and *Feeling* modes are required by the CM model. All four modes need to be represented within the effective top management group and utilized in the management process.

From a *descriptive* point of view, cognitive composition might be expected to evolve as an organization matures. One would expect founders of organizations to be predominantly intuitive in their gathering of information, and to evaluate information using the feeling mode. As organizations mature, intuition and feeling would be expected to give way to sensation and thinking. Although it need not necessarily be the case, the latter style can easily drive out the former. This occurs most dramatically when founders leave (or are forced out) and replaced by 'professional managers', those trained in the SM methodology. More generally, differences in composition within the top management group can be expected to change as an organization develops, and these differences are expected to yield different patterns of behavior. However, the actions of an organization are not directly impacted by the cognitive preferences of its top managers. It is the behaviors of this group and the integration of these behaviors into a pattern of organizational actions which impacts strategy and performance.

BUSINESS STRATEGY AND THE CREATIVE MANAGEMENT MODEL

The CM model is basically an adaptive process and, as such, relates best to strategy concepts, which share this perspective. For example, Miles and Snow (1978: 21) recognized that 'The strategic-choice approach essentially argues that

the effectiveness of organizational adaptation hinges on *the dominant coalition's perceptions* of environmental conditions and the decisions it makes concerning how the organization will cope with these conditions' (emphasis added). Based upon their empirical observations, Miles and Snow (1978: 14) identified four patterns of behavior which they reduced to four strategic archetypes, 'representing alternative ways of moving through the adaptive cycle'. These are defender, prospector, analyzer and reactor. Unfortunately, Miles and Snow do not link these types to their underlying concern with the perceptual abilities of the dominant coalition. And while they recognize prospectors as more innovative and willing to experiment with new ideas than their other strategy types, they do not provide much insight into how perceptions impact this process. Furthermore, there is little sense for how established business logics are changed, how unconventional ideas are incorporated into established business strategies. They do not directly address the question of renewal.

In our view, truly *prospecting* organizations have dominant coalitions which search for new ways of doing business and continually use visions of possible futures, ideas about new and different ways of doing business, to feed forward into present behavior and actions. By contrast, in *preserving* organizations past norms and traditions feed back to dominate present behavior. As shown in Figure 2, when viewed in this way, the CM model can be used to distinguish between organizations with a preference for either prospecting or preserving strategies.

The management groups in both prospecting

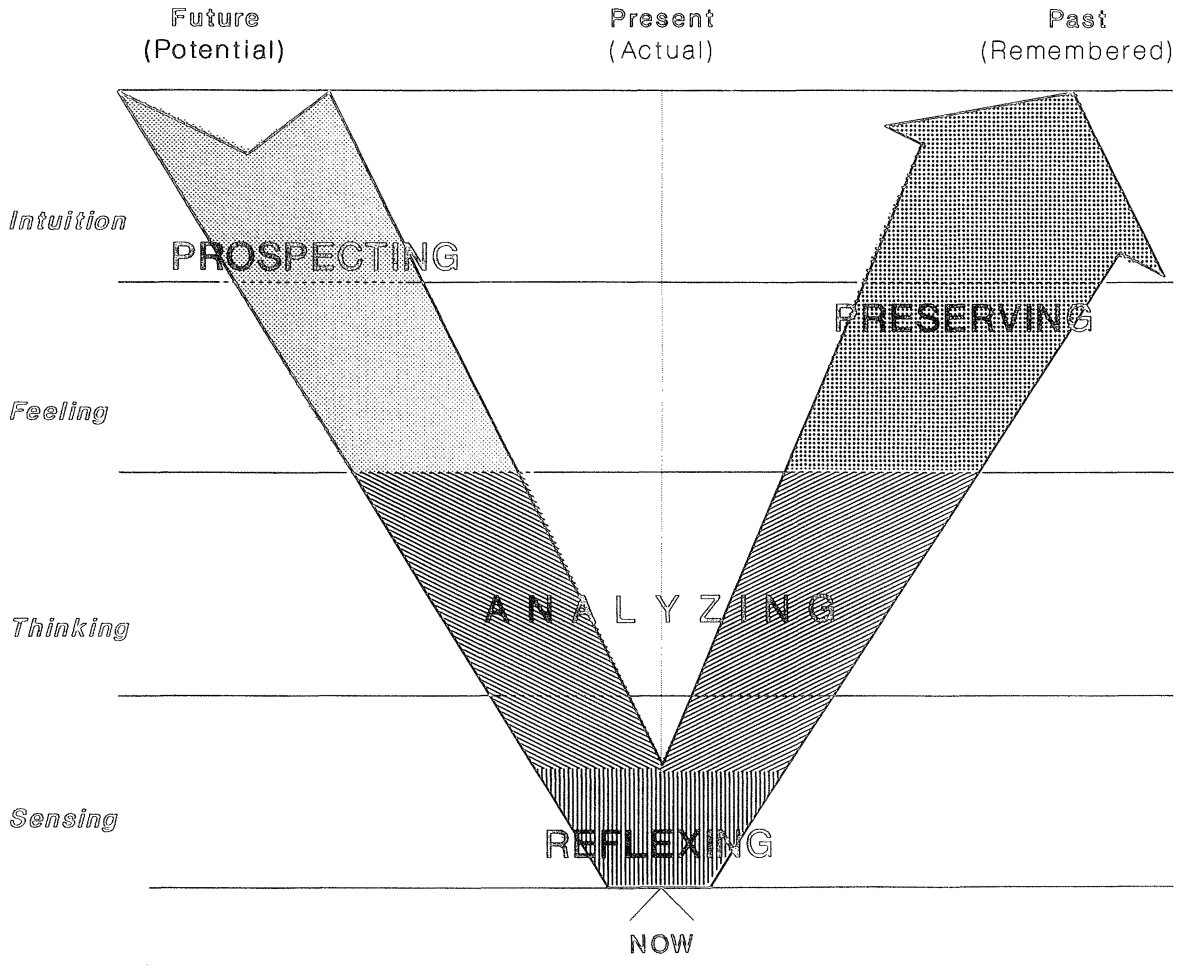

Figure 2. Strategy and the creative management model

and preserving organizations are oriented towards the intuition and feeling levels of the CM model. Preserving managements are able, with their intuitive ability, to perceive patterns in past decisions, actions and events; and by way of their feeling level they extract and express meaning from their firm's past. They have a strong sense of history and tradition; 'what we have been'. Their orientation is towards the past. Prospective managements use the same cognitive abilities (intuition and feeling) but focus them on the future; 'what we might become'. Although both types of organization must function in the perpetual 'now', they do so with different (subjective) time orientations; the managements of prospecting organizations are oriented towards the potential of what might be, the future; in preserving organizations the orientation is towards the remembrance of what has been, the realized vision, the past.

Prospecting organizations can be expected to be radical innovators, willing to experiment with new ideas that do not fit within the accepted logic for the business. In preserving organization realized vision and tradition guide action, resulting in an adherence to past strategies; even incremental adjustments may be difficult because intentions and results are evaluated against values (at the feeling level) not standards derived from a logic (at the thinking level). Both of these strategies, because vision and values drive behaviors, often lack the coherence to their actions provided by the thinking–planning level. Furthermore, these organizations are not highly responsive to direct environmental stimuli.

Within the context of the CM model, the dominant coalition of an *analyzing* organization can be seen as more oriented towards the present than either their preserving or prospecting counterparts. It also functions more at the thinking and sensing levels; less so at the intuition and feeling levels. As a consequence the management of an analyzing organization is less accepting of radical, unproven ideas than the pure prospecting organization, but also less bound by tradition than the preserving organization. Accordingly, the analyzing organization is less likely to be first with a radical innovation, although it may follow an initiative of a prospecting firm once it can be rationalized. It is not just the (subjective) time orientation of the management of an analyzing organization that prevents it from pursuing radical innovations. This inability is also bound up in the interrelated issue of their preferred or dominant cognitive functions, thinking and sensing. The management of an analyzing organization functions more at the thinking and sensing levels, and therefore needs to develop a plausible logic before action. However, the actions they do take are well planned and coherent extension of the established logic.

The remaining strategy orientation outlined in Figure 2 is the reflexing organization. Reflexing organizations (and their managers) exist only in here and now. They have no view of their firm's future, nor sense for its past. Their behaviors are guided by instinctive or reflex responses to given stimuli. They do not attempt to understand their behaviors and actions, either before or after these actions occur. They function solely at the sensation level. Such organizations are highly responsive to a given set of environmental stimuli, but should the environment and the appropriate response pattern change these organizations are unable to adapt, to learn new behaviors.

Given the strategy types identified within the CM model—prospecting, analyzing, reflexing and preserving—what are the corresponding organizational attributes? Consistent with Miles and Snow's original observation about the importance of the dominant coalition's perceptions, the CM model links perception and cognitive preferences suggesting that the composition of the top management teams and their mix of cognitive and time orientations is key to understanding this conception of organization strategy.

Prescriptively it would appear organizations able to renew themselves need some of the attributes of each strategy orientation. The ideal management team needs both prospecting and preserving abilities; these combine a basis in its past with the ability to create its future. This is the problem of renewal: preserving the core of the business while allowing for the ongoing redefinition of that core. Like Janus, the Roman god of the threshold, truly adaptive organizations and their management teams simultaneously look forward, and create their future; and back, and appreciate their past. However, they also strive to understand their actions, and anticipate outcomes while being responsive to environmental stimuli. Even though a balance amongst all strategy orientations might be desirable, it seems likely

that most organizations, like most individuals, will have a distinct preference.

Strategy and the composition of top management

The composition and interactions of the top management group affect behaviors which are ultimately reflected in the decisions and actions of the organization. Therefore, differences in composition of the management group should be manifested in patterns of action, that is in strategies (Mintzberg, 1978). The behaviors of the dominant coalition derived from the CM model can be related to the different cognitive types. Accordingly, relationships between the makeup of a top management group and the strategic types of Preserving, Analyzing, Reflexing and Prospecting can be hypothesized (see Table 4). The assertions made are largely descriptive. Prescriptive statements require a link to behaviors, patterns of action and performance.

ON CAUSALITY

To this point the discussion has been largely conceptual, linking cognitive styles, behaviors, team composition and decisions and actions. However, it is recognized that other factors, like personal background and skills, influence managerial behaviors; as do organizational context factors, such as hierarchy, norms, rules, and decision-making style.

Empirical evidence

A complete review of the empirical work related to the CM model and top management team composition is beyond the scope of this paper. However, this section will examine some of the existing work, much of which indirectly supports aspects of the CM framework.

Much research has focused on the relationship between background characteristics of managers and firm performance. After an extensive review of this literature Hambrick and Mason (1984: 203) observed: 'It is doubtful that this research stream can progress far without greater attention to relevant literature in related fields, especially psychology and social psychology.' This article attempts to progress from a psychological base while forging the link to decisions and patterns of action (i.e. strategy) for the enterprise. For the sake of simplicity and brevity, the discussion of empirical support for the model will focus on key relationships.

Team composition ⇒ decisions/actions/performance

Miles and Snow (1978) observed patterns in action, strategies, consistent with the CM process. Moreover, their strategy typology has been found to be reasonably descriptive of observed strategic attributes (Hambrick, 1983a). However, their observations about the composition of the dominant coalition are limited to functional backgrounds. For Defenders they note that the dominant coalition was typically composed of the

Table 4. Hypothesized relationship between cognitive composition of the dominant coalition and business strategy

Dominant coalition's		
Cognitive composition	Time orientation	Strategy orientation
Mostly Intuitives with some Feelers	Future	Prospecting
Mostly Thinkers with some Sensors	Near Term Future and Past	Analyzing
Mostly Sensors	Now	Reflexing
Mostly Feelers with some Intuitives	Past	Preserving
Mix of Intuitives, Feelers, Thinkers and Sensors	Future⇔Past	Renewing

general manager, the controller, and the heads of production and sales. They go on to state, 'the Prospector's dominant coalition centers around the marketing and research and development functions. Moreover, the Prospector's dominant coalition is also larger, more diverse and more transitory than the Defender's'. Their rationale is based upon the fit between managerial skills and the technical task requirements of the strategy. Although relationships have been observed between functional background and cognitive preference (McKenny and Keen, 1974; Macdaid, McCaulley and Kainz, 1986) no link was made by Miles and Snow to underlying psychological or cognitive attributes of the top management group.

Individual differences within top management teams such as age (Child, 1974), functional track record, education (Kimberly and Evanisko, 1981) and job tenure (Carlson, 1972) have been studied. These variables are usually recognized as proxy for some underlying psychological dimension (e.g. cognitive style, time orientation, tolerance for ambiguity), and used because they are more easily measured. In reviewing the literature on the relationship between background characteristics of top managers and organizational actions and performance, Hambrick and Mason (1984) developed a list of propositions based on demonstrated associations. However, this approach has several problems. First and foremost the propositions lack a consistent conceptual view of the top management group and its role in moving the organization forward. Second, the variables are not clearly related to broader theories of personality, or behavior. Third, despite the observation that the group, and group heterogeneity, are significant factors, most of the work in this area seems to view the group as uniform. Most work employs either an average measure for attributes of the top management group, or selects one executive, usually the general manager, as singularly important.

A major empirical study associating underlying psychological variables and team performance was done by Belbin (1981). He administered a battery of psychological tests to executives taking part in a management training course. During the course, managers participated in business simulations. Team composition was varied and performance was measured. Evidence from this research suggests that:

1. The effectiveness of a team will be promoted by the extent to which members correctly recognize and adjust themselves to the relative strengths within the team, both in expertise and ability to engage in specific team-roles.
2. Personal qualities fit members for some team-roles while limiting the likelihood that they will succeed in others (Belbin, 1981: 132–133).

Belbin's work, although illuminating and highly descriptive, was not done in managerial settings. Neither was it a test, nor development of a theory of management team effectiveness.

Some work on team composition and effectiveness using Jungian types has been conducted. Blaylock (1983), employing a production simulation with business students, formed 17 groups, four of mixed or complementary types and 13 of compatible or relatively uniform types. Three of the four mixed groups finished in the top five, a significant relationship.

The assertion that heterogeneous groups are more effective than homogeneous groups is not new. Filley, House and Kerr (1976), surveyed the literature on group dynamics and concluded that novel problems are best handled by a heterogeneous group and routine problems most efficiently dealt with by a homogeneous group. A concurring note was stated by Ziller (1972). Reviewing studies from further afield, he too found that performance is enhanced in groups with heterogeneity in membership. Rather than differentiate on problem types, he suggested that short-term groups ought to have homogeneous membership while long-standing groups have heterogeneous membership. He concluded that heterogeneity on a wide variety of variables, including race, age, ability and personality and training in group dynamics, improved productivity.

Indeed, the outstanding question pertains not so much to the situational conditions favoring heterogeneity but rather to the appropriate dimensions for the heterogeneity, given the issues being addressed. Addressing this question requires a conceptual perspective. The perspective of the CM model links the executive function of business renewal to cognitive preferences to managerial behaviors and organizational action.

Cognitive modes ⇒ behaviors

The empirical link between the group composition based upon differences or similarities in cognitive preferences and outcomes from group activity is sparse. Evidence associating individual behaviors and cognitive preference is more prevalent.

Several studies have indicated a link between MBTI (Myers-Briggs Type Indicator) and behavioral patterns. Mitroff and Kilmann (1975), Mitroff, Barabba and Kilmann (1978), and Hellriegel and Slocum (1980) have researched how different types view ideal organizations and their heroes. Most of these support the relationships posited by Myers (1962). They found that Sensing–Thinking managers concentrated on specific, factual details, preferring situations in which there is certainty, specificity and control. Their heroes used others to get things done; they were problem-solvers. Intuitive–Thinking managers focused on broad, global issues, general concepts and ill-defined macro-level goals. Their heroes were broad conceptualizers and problem-framers. Sensing–Feeling managers were more concerned with specific people issues, not tasks. Their heroes created personal, warm climates and made organizations like 'home'. Finally Intuitive–Feeling managers focused on broad global themes serving mankind. Their heroes were able to envision new goals and create organizations with a personal sense.

Reporting on the validity of MBTI, Carlyn (1977) states that Intuitives are more likely to participate in imagined events and engage in possibilities while Sensors prefer a command of reality. Although validity studies have been done relating MBTI scores to other personality measures, very little evidence is available linking MBTI directly to managerial behaviors. To the extent that profession and position correlate to behaviors, the data presented in Table 5 tend to inferentially support the relationships posited in Table 3.

As a group, management consultants and high-level executives have a predominant thinking preference for evaluating information; as one would expect, consultants prefer to gather their information more broadly and look for whole relationships (intuition preference). Practicing managers, be they high-level executives, supervisors, accountants or small business managers, have a stronger preference for grounding their information gathering in the immediate representations of the world with which they must deal (sensation preference). Moreover, the proportions of cognitive types do appear to differ by level in the hierarchy. Roach (1986) distinguishes between supervisors–managers–executives and reports that 'over half the executives were Intuition–Thinking' while for supervisors Sensation–Thinking was the largest category. Sensation–Feeling declined dramatically in relation to increasing organizational level.

While intuitive preference appears to increase modestly with level in hierarchy, it varies more dramatically among professions. As shown in

Table 5. Cognitive style by profession and managerial position

	Information gathering		Information evaluation		
	Intuition	Sensing	Thinking	Feeling	*n*
Managerial					
Management consultants	58%	42%	92%	8%	71
High-level executives	43%	57%	90%	10%	136
Supervisors and managers	42%	58%	64%	36%	3678
Accountants	38%	62%	59%	41%	427
Small-business managers	14%	86%	81%	19%	150
Other professions					
Artists	91%	9%	30%	70%	114
Architects	82%	18%	56%	44%	124
Steelworkers	14%	86%	74%	26%	105
Teachers (grades 1–12)	26%	74%	31%	69%	281

Source: Adapted from Macdaid, McCaulley and Kainz (1986).

Table 5, professions requiring a high degree of creativity (artists and architects) have a strong intuition preference. Architects, however, deal with a technical subject and tend towards the thinking preference for evaluating the content of their intuitive insights. Artists, unconstrained by many technical requirements, evaluate their insights based upon feelings. Teachers and steelworkers, by way of further example, whose professions require them to deal with and respond to direct stimuli, have a stronger sensation preference. Dealing with children, most teachers (grades 1 through 12) evaluate stimuli using feeling; while steelworkers working with a process technology prefer thinking.

While these data are provocative, they do not directly address the question of whether or not cognitive preferences are associated with the behaviors expected at the different levels of the CM model. These questions need to be addressed by empirical research.

TOWARDS RESEARCH

Empirical work from other areas tends to support the general relationships implied by the CM model for the composition of top management groups. However, many linkages in the framework need empirical testing. Our global proposition is that the composition of the top management group will affect firm strategy and performance. More specifically, it is proposed that the task variety implied by the CM model requires cognitive style differences within the top management group. However, diversity alone does not ensure effectiveness. The organization must transcend this diversity. We suspect the patterns of interaction amongst the contributors to strategic actions, who interacts with whom and how they interact, will be a critical aspect of this transcendence.

Although conceptually appealing and with some empirical support, major questions remain to be resolved as the empirical study of top management groups proceeds. These include:

1. What is meant by top management teams? Is the team the management committee? Is membership determined by hierarchical position? Are they the sociometrically determined contributors to major decisions? Does membership vary by decision? Can a parsimonious classification of top management teams be determined?
2. Are effective top management teams composed of individuals exhibiting behavior required by the CM model? Are these behaviors distributed among team members as would be predicted on the basis of their cognitive style, or are they distributed on some other basis? Are the integrative/facilitative behaviors exhibited by those with other substantive contributions to the CM process or do they require specific individuals with different cognitive styles or personalities? Do behavioral patterns account for differences in firm performance or is it just sufficient to see the total set exhibited by the group?

Addressing these issues will require a variety of approaches and research methodologies.

Approaches to researching top management teams

There are two broad ways to approach answering the questions raised above. One is to take the theory to practice, the other is to bring practice to theory.

Theory to practice

This approach calls for the explicit statement of testable hypotheses, tight experimental designs and valid measuring tools. Because of the complexity of the phenomenon under study it is advisable first to conduct tests of these hypotheses under highly controlled conditions. We believe that well-developed behavioral simulations[2] provide many of the controls necessary, but recreate real life sufficiently well to be used as vehicles for such tests.

The following propositions could be tested through these simulations:

1. Individuals with certain cognitive styles exhibit specified behavior, or clusters of behaviors.
2. Exhibited behaviors cluster to reflect contributions to the *levels* of the CM process.

[2] Simulations developed by the Center for Creative Leadership, Greensboro, NC, and by the Management Simulations Project group, New York University, are examples.

3. Certain patterns of interaction are better able to transcend these differences than others.
4. The behaviors and interaction patterns result in the expected patterns in action.

A simple research design would involve assigning individuals to top management teams (TMTs) on the basis of their MBTI types to create both homogeneous and heterogeneous groups. All groups then participate in a behavioral simulation. Following the simulation, participants are asked to complete a behavioral checklist (who did what) and asked to indicate who played what role. Linkages in the logic can be tested. Additional studies can test the effectiveness of different interventions prior to the simulation.

Practice to theory

Generalizability is limited with the designs mentioned above. Simulations, no matter how well developed, cannot completely replicate real life. They may unduly force individuals into roles and behavior they would not otherwise exhibit, and they may impose norms on group behavior that do not reflect the real-life behavior of top management teams. Concurrent with highly controlled theory-to-practice designs, real-life top management teams should be observed.

Initially this research should be descriptive. It is hoped that intensive clinical studies of a sample of top management teams would provide the basis for a parsimonious classification of teams. The stability of team membership, who contributes to key decisions and actions, could be examined both over time and over situations. Behaviors exhibited by individuals in different roles can be observed. With a taxonomy of teams and a more detailed behavioral checklist developed, larger-scale research could be conducted to test hypotheses emanating from the theoretical framework. Structured interviews and data collection could be conducted with members of a variety of top management teams. Administered instruments would include measures of cognitive preferences and other behavioral predispositions, checklists of behavior to be completed on self and other top management team members. Performance of the teams could be measured, and effectiveness accounted for, on the basis of individual background and behavioral differences.

Although little has been said in this paper about patterns of interaction among team members, it is clear that performance cannot be thought of strictly as a function of team composition. The case studies and survey research would also be useful for observing, documenting and understanding patterns of interaction. For example, do heterogeneous teams which operate with low status and power differentials outperform those that operate on the basis of hierarchical positions? Does job context suppress or extinguish intrinsic cognitive preferences?

Both types of research should proceed concurrently. Much can be learned from one that is useful to the other. Through studies of managers in simulated settings, reliable measures of behavior could be developed. The validity of these measures could than be assessed in the field. Other intervening variables discovered in the field studies can be manipulated experimentally or statistically in subsequent laboratory studies.

TOWARDS PRACTICE

The ideas of teamwork at the top, cognitive style and innovation are not new to practicing managers (Rowan, 1979; Sherman, 1984; Moore, 1987). Furthermore, Jungian concepts and MBTI types are to a limited extent already being used to help managers better understand their organizations (Mitroff and Kilmann, 1975; Mason and Mitroff, 1981; Moore, 1987). The CM model synthesizes many of these ideas as they relate to the executive function of business renewal. It infers roles, behaviors and differences in cognitive type for the top management group.

The conceptual insights can still be of use to practitioners even though as yet unsupported by detailed direct evidence. The CM model provides managers with an understanding that can make them more aware of their own behaviors and tolerant of others, especially when they appreciate the individual differences in cognitive preference which underlie those behaviors, and that such behaviors may play an important role in the CM process. In other words, it can be hoped that a conceptual understanding will result in a behavioral awareness and modification.

If those responsible for the overall direction of the enterprise were aware of the behavioral requirements of its members as posited by the

CM model they could use that understanding in several ways. First, an examination of the members of the TMT may reveal that they are inclined to exhibit the required behaviors, but feel, because of organizational factors, they cannot do so. A further examination of the cultural norms, power relationships and the reward systems might reveal that those behaviors were discouraged or even punished. It might be a relatively easy step to legitimize those previously suppressed behaviors.

Often a change of context can help. The 'outward-bound' experience for managers, by providing a dramatic shift in context and in some respects tasks, presents an opportunity for latent preferences, suppressed in the normal organization context, to surface. It is well accepted that children learn through play. However, playful experiences for managers need not always occur outside the normal organizational context. It is now being suggested that certain organizational activities be conducted in a playful manner in order to facilitate institutional learning (Rutenburg, 1986; De Geus, 1988).

A second, and possibly a more controversial, use would be to employ the CM model for selection to, and development of, the TMT. With an understanding of the model those responsible for these activities might attend to, document and evaluate the behaviors of potential or current members of the TMT in terms of cognitive type. These behaviors, framed within the CM model, could be assessed and used as one criterion for selection. Development activities might also be suggested for some members who could most likely exhibit certain required behaviors. As a cautionary note we do not believe that use of the MBTI as a cognitive indicator is warranted at this time. The test was not developed, nor has sufficient evidence of reliability and predictive validity been shown, for use in selection or promotion decisions. However, we do feel that Jung's conception of cognitive types does provide a useful way for managers to appreciate observable, individual behaviors and their contribution to the process of organizational renewal.

Throughout these brief suggestions for practice, the emphasis has been on behavior. Managers attempting to employ the CM model should adopt a similar perspective. It is the insights into the behaviors of the TMT provided by the model that have the greatest utility.

SUMMARY/CONCLUSIONS

This paper attempts to build a model of the behavioral requirements for the top management team from two perspectives. First, from the perspective of the individual, it is posited that the behaviors relevant to the renewal function of the executive which need to be exhibited by top managers are at least partly a function of their cognitive preferences. It is argued that the Jungian/Myers Briggs typology is consistent with the model of renewal based upon the creative management (CM) model and an established framework for understanding and predicting these behaviors. Second, it has been asserted that organizations will evolve a pattern of actions, a strategy reflecting the cognitive composition of the top management team. As the cognitive preferences of the top management group vary so too will strategy.

It is suggested that research follow both a theory-to-practice and practice-to-theory approach, simultaneously developing theory and testing specific hypotheses about team composition and patterns of interaction.

This paper makes a case for a management process that utilizes the full range of human potential. The need for a CM model to replace the conventional strategic management framework has been argued on the basis of the latter's inability to utilize the full range of cognitive functions and accordingly its failure to promote new and innovative strategies. The CM model, however, has implications for the dominant coalition. Since theory and evidence suggest individuals have superior or dominant functions a mixture of cognitive types is implied. The CM process suggests that top management groups not only include the *Thinkers* and *Sensors* needed by the SM process but also embace the *Intuitives* and *Feelers* needed to generate and infuse unconventional insights and new ideas. But difference without synthesis is anarchy. The organization and its members must also have the ability to achieve unity from diversity, the ability to transcend.

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