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Specialization and Values as Inputs to Decision-Making Mining Managers
Valeurs motivant les dirigeants de l'industrie minière : une étude de cas

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Résumé de l'article

L'objet du présent article est de découvrir ce que les dirigeants de l'industrie minière au Canada considèrent comme le plus important pour la direction de leurs entreprises. En d'autres termes, à quel système de valeurs se réfèrent-ils? S'intéressent-ils davantage aux personnes qu'aux choses matérielles?

Pour tenter de répondre à ces questions, l'auteur s'est inspiré de deux modèles d'analyse de comportement: l'un mis au point par England et ses collègues, fondé sur les valeurs de jugement personnel, l'autre appuyé sur la théorie de Frost et de Barnowe où il s'agit de savoir si les intéressés sont portés plutôt vers les choses que les personnes.

L'enquête fut faite à partir d'une liste de 594 membres de l'Institut canadien des mines et de la métallurgie en Colombie Britannique en Alberta et dans le territoire du Yukon. Il faut aussi noter que l'enquête porte sur les dirigeants d'entreprises situées dans des petits centres miniers. On a transmis par la poste à ces gens un questionnaire se rapportant à 66 concepts et 189 ont effectivement répondu.

Lorsque les données de cette enquête furent compilées, elles ont donné le résultat suivant: selon le système mis au point par England, 76 des 189 répondants ou 38% pouvaient être considérés comme essentiellement pragmatiques, 65 ou 35% de ces dirigeants fondaient leurs attitudes sur un corps d'idées arrêtées, 4% étaient plutôt de type affectif et 22% avaient une orientation plutôt mélangée. D'autre part, suivant la théorie de Frost et Barnowe, ces dirigeants se partageaient en deux groupes principaux. On pouvait classer 67 d'entre eux parmi les « généralistes », c'est-à-dire qu'ils portaient autant d'attention aux personnes qu'aux choses; 79 d'entre eux s'intéressaient strictement aux questions d'ordre matériel; 13 mettaient l'accent sur la personne et 22 pouvaient être rangés dans une catégorie que l'auteur désigne sous le nom de « non-spécialistes ».

De l'étude ci-dessus, on peut tirer deux conclusions:

En premier lieu, les gérants de sociétés minières canadiennes, dans les petits centres, se préoccupent principalement du fonctionnement de l'entreprise et ils ne s'intéressent guère aux valeurs sociales d'ensemble, bien-être des travailleurs, environnement, etc.. Ce sont des technologues intéressés à leur travail pour qui l'exercice de leur tâche est d'importance primordiale.

Deuxièmement, les différences d'orientation entre eux reposent sur la perception qu'ils se font du travail humain. Ceci se vérifie davantage chez ceux qui ont été obligés de prendre des décisions majeures se rapportant aux travailleurs et au rôle que ceux-ci tiennent dans l'entreprise.

Specialization and Values as Inputs to Decision Making of Mining Managers

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This thrust of this paper is to explore the objectives which mining managers perceive as important for effective organizational functioning in terms of their values, of the sense they make of the world around them in two specific, fundamental areas, orientation toward people and toward things, and of the interaction between managerial values and this orientation.

Most decision theory models addressing the issue of how managers and administrators develop normative objectives for organizational action include as important variables the external and internal environment of the organization, the sense which individuals make of that environment and the values which individuals bring to the process of objective formulation (Christensen, Andrews and Bower, 1973). The thrust of this paper[1] is to explore the objectives which mining managers perceive as important for effective organizational functioning in terms of their values, of the sense they make of the world around them in two specific, fundamental areas, orientation toward people and toward things, and of the interaction between managerial values and this orientation.

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A few years ago mining was considered a national "good" in many countries including Canada, and private mining firms were leaders in international mining. Today, conservation concerns cast doubt on the relative usefulness of the industry and in many locations, government is a participant in the industry primarily as a controller of consumption rather than as a source of supply. Managers now set objectives and make decisions in a changed and changing environment. It becomes important to know something of the values they bring to this process. Similarly, it is useful to assess the orientations which managers have toward their world, given that mining enterprises exist in an environment which once was preoccupied primarily with technical issues, with "things", but which now also contains a complex mix of "people-related" stimuli, including those stemming from environmental protection groups, governmental agencies, unions, and the individual workers.

As a first step toward describing and examining such relationships, mining managers in relatively homogeneous and buffered environments were studied. The study reported here concentrates on mining managers in small mining communities in Canada. Subsequent studies are planned to explore these variables in more complex settings.

CONCEPTUALIZING MANAGERIAL VALUES AND ORIENTATIONS

Managerial Values

The importance of values in managers' objective setting has been stressed by England (1975). England asserts that values influence managers' perceptions of situations and the problems they face, their decisions and problem solutions, their perceptions of other individuals and groups, their perceptions of what constitutes success, what they consider ethical, and their readiness to accept or reject organizational pressures and goals.

According to England, values are similar to attitudes but more ingrained, stable and permanent. Thus, it might be expected that over time, values may exert a substantial influence on managers' decision processes and the ways in which they implement actions. The decision processes and actions clearly have implications for employees, as well as for others associated with organizations. With England's conceptual framework managers can be characterized as having either a pragmatic value orientation, a moralistic value orientation, or an affect or feeling value orientation. Managers with a pragmatic value orientation perceive values they assess as important in terms of success, managers with a moralistic value orientation perceive their

important values in terms of "rightness", and managers with an affect or feeling value orientation think of their important values in terms of "pleasantness". Clearly, some managers may have a mixed orientation, being characterized by two or by all three of the pure modes. However, it is conceptually useful to examine values in terms of the three categories, and England has demonstrated empirically the existence of these value types. The conceptual development, operationalization and empirical testing of this framework is described fully elsewhere (England and Keaveny 1969, England 1975) and is discussed briefly, later in the paper.

Person/Thing Orientation

The importance of person/thing orientation as an influence on perceptions and behavior has been stressed by Little (1976, 1972). According to Little, individuals construe the world around them most fundamentally in terms of persons and things (including as things: physical objects, numerical data, and ideas unrelated to persons). In his investigations of patterns of person/thing orientation, Little (1972) has found individuals' cognitive-affective predispositions toward persons and things consistently to be uncorrelated, and has found behavioral connections with career choice: students majoring in natural sciences had predominantly low person/high thing orientation patterns, while students majoring in humanities and social sciences tended to have high person/low thing orientations. Our own research has shown that natural resource scientists predominantly have low person/high thing patterns, that male undergraduate university students in Commerce are normally distributed with respect to person and thing orientation, and that persons with high person orientation are more extraverted and more tolerant of ambiguity (Frost and Barnowe, 1977). Given the conceptual independence of orientation toward persons and orientation toward things, and the extremely low empirical correlations (ranging from .00 to .12) between person and thing orientation scales developed independently by Little (1972) and Frost and Barnowe (1977), it becomes possible to apply a four-category classification to subjects. Those who score high in person and things orientation are termed Generalists, high person/low things orientation subjects are Person Specialists, low person/high things subjects are Thing Specialists, and low person/low things subjects are Nonspecialists (see Little, 1972).

Mining managers in small communities typically operate at some considerable distance from centers where decisions are made by individuals and groups outside the organization (e.g., environmentalists, politicians) con-

cerned with curbing or altering managerial actions, and where proximity to the media makes for high visibility when organization objectives and outcomes are deemed controversial. Such managers and the mines in which they function, therefore, are likely to be somewhat protected, though not entirely immume from the forces of change described early in the paper. It was anticipated that the values of such managers and the objectives they formulated or considered as important would reflect primarily traditional organizational concerns, such as those associated with success. Managers in the sample thus were expected to have primarily a pragmatic orientation.

It was assumed also, that pressing concerns in rural mining organizations would still be predominantly though not exclusively technical. Managers in the sample were expected to have a "Thing Specialist" rather than a "Person Specialist" orientation and to associate themselves with objectives having a technical focus. Where managing people is emphasized in such settings it was assumed that people would be viewed as a resource for, or as a means to technical ends. Concern for people in such organizations would likely be coupled, therefore, with a high concern toward things. Thus, managers with an orientation toward people in the sample studied were expected to be "Generalists" rather than "Person Specialists". Objectives developed by, or seen as important by Generalists were expected to differ from those of Thing Specialists.[2]

Finally, it was anticipated that interactions of value orientation and of orientation to persons and things would provide a description of groups of managers who while primarily pragmatic in values differed in terms of being Generalists or Thing Specialists and differed also in the managerial objectives they perceived as important.

METHODOLOGY

A list of 594 members of the Canadian Institute of Mining and Metallurgy within British Columbia, Yukon Territory, and Alberta was compiled from the institute's 1975 Directory. Personal listing addresses in the cities of Vancouver, Calgary, and Edmonton were excluded because the study concentrates on the values of mining managers residing in small min-

2 A different composition or mix of managerial values and orientation to persons and things would be expected in mining organizations in large, relatively urban settings, leading to a higher proportion of managers with moralist values, and a more even mix of Person Specialists, Thing Specialists, Generalists and Non-Specialists. These assumptions remain speculative at this point. They are not adressed in this paper.

ing communities. The managers were asked to respond by mail to England's (1975) Personal Value Questionnaire (PVQ) and to an instrument developed by Frost and Barnowe (1977) to measure preferences for dealing with people and with technical, thing-related, impersonal matters. 189 managers responded to the survey (31.8% Response Rate).

England's PVQ is based on the rationale that the meanings attached by an individual to a carefully selected set of concepts will provide a useful description of his personal value system. The PVQ contains 66 concepts which fall into five major groups as shown in Table 1. Each manager is asked to rate each concept on an importance scale (high, average, low) and on a primary meaning scale ("successful", "right", or "pleasant"). Then the manager's primary value orientation is calculated by considering his patterns of responses to the entire set of 66 concepts (i.e., by counting the numbers of concepts rated as high, average or low in importance and as successful, right, or pleasant in connotation). A manager who most frequently characterizes concepts he rates as high in importance as "successful" in meaning is considered to have a pragmatic value orientation. In parallel fashion, a moralistically oriented manager is one who sees concepts he considers highly important as meaning "right". An affect-oriented manager is one who attaches the meaning "pleasant" to concepts judged to be of high importance.

Once a manager's primary value orientation has been calculated, it is possible to make judgments about the extent to which each of the 66 concepts may influence that manager's behavior. A concept is termed an *operative* value - has a high probability of being transferred from an intentional state into actual behavior - if a manager considers it to be of high importance and attributes to it a meaning consistent with his value orientation. For example, the concept "high productivity" is operative if a manager with a pragmatic orientation rates it as having high importance and as meaning "successful"; or if a moralistic manager rates it as highly important and "right". A concept is an *adopted* value - less a part of a manager's personality, but likely to influence behavior when circumstances permit - if it has a meaning consistent with the manager's value orientation but is rated as not high in importance. A concept is an *intented* value - not likely to influence behavior except under special circumstances - if it is seen as important but has a meaning that is inconsistent with the manager's value orientation. A concept is a *weak* value - very unlikely to have any impact on behavior - if it is unimportant and has a meaning inconsistent with the manager's value orientation.

TABLE 1

Concepts Used to Measure Manager's Values

Goals of Business Organizations	*Personal Goals of Individuals*	*Groups of People*	*Ideas Associated with People*	*Ideas About General Topics*
High Productivity	Leisure	Employees	Ambition	Authority
Industry Leadership	Dignity	Customers	Ability	Caution
Employee Welfare	Achievement	My Co-workers	Obedience	Change
Organizational Stability	Autonomy	Craftsmen	Trust	Competition
Profit Maximization	Money	My Boss	Aggressiveness	Compromise
Organizational Efficiency	Individuality	Managers	Loyalty	Conflict
Social Welfare	Job Satisfaction	Owners	Prejudice	Conservatism
Organizational Growth	Influence	My Subordinates	Compassion	Emotions
	Security	Laborers	Skill	Equality
	Power	My Company	Cooperation	Force
	Creativity	Blue Collar Workers	Tolerance	Liberalism
	Success	Government	Conformity	Property
	Prestige	Stockholders	Honor	Rationale
		Technical Employees		Religion
		Me		Risk
		Labor Unions		
		White Collar Employees		

The Frost-Barnowe (1977) measure of person/thing orientation consists of two 12-item scales developed from the Strong-Campbell Interest Inventory. Each scale consists of activities, amusements, and occupations previously scaled for person/things involvement by a panel of judges. Managers registered their like/dislike for each item on a five-point scale. Reliabilities of the person (P) and things (T) orientation scales (coefficient alpha) have been established as .81 and .76, respectively, and the P and T scales have been found to correlate .65 and .55 with analogous measures developed by Little (1972). In five previous studies, the Frost-Barnowe P and T scale intercorrelations ranged from .00 to .12. The scales intercorrelated .13 for subjects in the present study, justifying their combination into a four-category pattern variable with mining managers classified as Generalists (high P, high T scores), Person Specialists (high P, low T), Things Specialists (low P, high T), or Nonspecialists (low P, low T).

Results and discussion

From a purely descriptive standpoint, it is important to see first how Canadian mining managers as a group responded to the PVQ's 66 value concepts. Table 2, the Managerial Value Matrix, shows the frequency distribution of PVQ concepts and how the group of managers tends to attribute meaning to the concepts.

Each concept was assigned to the cell in the table that represents managers' most frequent importance/meaning judgment combination. For example, more managers responded to the concept of "conflict" in terms of its having low importance and a connotation of right than in terms of any other combination of importance and meaning. The "successful" category accounts for 30 of the 66 concepts, or 45 percent. The "right" category accounts for 28 concepts, or 42 percent. The "pleasant" category accounts for 15 percent of the 66 concepts. This is a first indication that small community Canadian mining managers as a group tend to hold both pragmatic and moralistic values.

When each manager's primary value orientation was calculated using formulas developed by England, 76 of 189 managers (38%) had a pragmatic orientation, 67 (35%) had a moralistic orientation, 4 percent had an effective orientation, and 22 percent had a mixed orientation (did not favor any one orientation). Thus, managers fell chiefly into two main value orientation groups, with very different likely consequences for policy formulation. The initial hypothesis in the study had been the existence of predominantly pragmatic oriented managers.

TABLE 2

Managerial Value Matrix

Primary Meaning Scale		*Importance Scale*				
		High	*Average*	*Low*		
Successful		High productivity	Org. growth	Prejudice*		
		Ind. leadership	Aggressiveness	Force		
		Org. stability	Loyalty			
		Profit maximization	Influence			
		Org. efficiency	Authority*			
		Customers	Change			
		Craftsmen	Competition			
		Managers	Risk			
		Company				
		Technical employees				
		Me				
		Ambition				
		Ability				
		Skill				
		Co-operation				
		Job satisfaction				
		Creativity				
		Success				
		Achievement (19)	(9)	(2)		30
Right		Employee welfare	Social welfare	Conflict		
		Employees	Owners			
		Boss	Laborers			
		Subordinates	Blue collar workers			
		Trust	Stockholders			
		Tolerance	Labor Unions			
		Honor	White collar employees			
		Dignity	Obedience			
		Individuality	Compassion			
		Equality	Authority*			
		Property	Caution			
		Rational	Compromise			
			Conservation			
			Government			
		(12)	Liberalism (15)	(1)		28
Pleasant		Co-workers	Leisure	Prejudice*		
			Autonomy	Conformity		
			Money	Religion		
			Security			
			Prestige			
			Emotions			
		(1)	(6)	(3)		10

* Denotes Tie. Because of two ties, the total number of concepts in this figure is 68.

In terms of person/thing orientation, the managers in the study also fell into two main groups. 67 managers were classified as Generalists, and 79 were Thing Specialists. Of the remaining managers, only 13 were Person Specialists and 22 were Nonspecialists. The vast majority of managers were thus high in orientation toward things, as expected. The principal contrast was therefore between managers high in thing orientation and low in person orientation versus managers high in thing and person orientation, with likely different consequences for policy formulation. It is interesting to note that there was a statistically significant tendency ($\chi^2 = 3.87$, $p < .05$) for line managers with responsibility for managing people to be Generalists and for staff managers (chiefly engineering/technical assistants without responsibility for people) to be Thing Specialists.

There was no significant association between person/thing orientation and value orientation. When person/thing pattern and primary value orientation were crosstabulated, four groups were thus of interest: Pragmatist-Generalists (N = 24), Pragmatist-Thing Specialists (N = 35), Moralist-Generalists (N = 24), and Moralist-Thing Specialists (N = 25); there were insufficient numbers of mining managers in other combinations for meaningful comparisons.

Table 3 shows the similarities and differences between these four person/thing orientation-value orientation groups with respect to the likelihood that each of England's 66 specific values will be translated into behavior. Three types of effects are seen in the table: value orientation main effects, apparent when differences between Pragmatists and Moralists are observed regardless of person/thing orientation; person/thing orientation main effects, apparent when differences are observed between Generalists and Thing Specialists regardless of primary value orientation; and interaction effects, indicated when unique combinations of person/thing orientation and value orientation produce differences from other groups concerning a specific concept.

It is apparent from Table 3 that there are no differences between groups in the behavioral relevance of 18 specific values: high productivity, organizational efficiency, employees, subordinates, technical employees, managers themselves, managers' own company, skill, cooperation (all operative values, and likely to influence behavior); and conformity, autonomy, security, prestige, change, conservatism, liberalism, leisure, and emotion (all weak values, and unlikely to influence behavior). Note, however, that much lower proportions (though still a majority) of moralists than pragmatists held high productivity as an operative value.

TABLE 3

Behavioral Relevance of England's 66 Value Concepts for Four Groups of Mining Managers: Pragmatist-Generalists, Pragmatist-Thing Specialists, Moralist-Generalists, and Moralist-Thing Specialists

Concept	*Pragmatist-Generalists (N = 24)*	*Pragmatist-Thing Specialists (N = 35)*	*Moralist-Generalists (N = 24)*	*Moralist-Thing Specialists (N = 25)*
Goals of Business Organizations:				
High productivity	O(96%)	O(80%)	O(46%)	OI(44%)
Industry leadership	O(67)	A(40)	OW(35)	OIW(32)
Employee welfare	O(58)	I(51)	O(83)	O(76)
Organizational stability	O(58)	O(46)	I(43)	W(44)
Profit maximization	O(67)	O(69)	W(35)	I(36)
Organizational efficiency	O(71)	O(77)	O(42)	O(52)
Social welfare	W(75)	W(91)	A(38)	OA(38)
Organizational growth	O(38)	A(54)	W(54)	W(40)
Groups of People:				
Employees	O(58)	O(51)	O(56)	O(44)
Customers	O(50)	O(31)	O(39)	W(52)
Coworkers	O(50)	I(41)	O(52)	I(48)
Craftsmen	O(61)	O(63)	IW(35)	OW(32)
My Boss	O(42)	O(40)	W(39)	O(33)
Managers	O(67)	O(41)	I(39)	A(28)
Owners	O(39)	W(37)	A(39)	W(40)
My subordinates	O(62)	O(40)	O(52)	O(48)
Laborers	W(46)	W(54)	A(36)	O(40)
My company	O(58)	O(54)	OI(35)	O(40)
Blue collar workers	W(39)	W(40)	O(39)	OA(32)
Technical employees	O(70)	O(57)	O(44)	O(48)
Me	O(62)	O(47)	O(36)	O(48)
Unions	AW(39)	W(65)	A(48)	W(44)
White collar employees	OA(33)	W(37)	O(35)	O(40)
Ideas About People:				
Ambition	O(61)	O(49)	I(33)	IW(28)
Ability	O(65)	O(86)	I(46)	O(44)
Obedience	W(56)	W(50)	W(39)	A(56)
Trust	OI(48)	I(57)	O(88)	O(92)
Aggressiveness	O(44)	OA(40)	W(61)	W(56)
Loyalty	I(52)	I(47)	O(78)	O(68)
Prejudice	W(56)	W(48)	A(46)	W(68)
Compassion	W(61)	W(80)	O(44)	O(40)
Skill	O(74)	O(83)	O(56)	O(60)
Cooperation	O(70)	O(65)	O(75)	O(60)
Tolerance	O(35)	W(53)	O(56)	O(56)
Conformity	W(82)	W(63)	W(64)	W(79)
Honor	I(52)	I(63)	O(70)	O(68)

Table 3 (cont'd)

Goals of Individuals:				
Leisure	I(42)	W(71)	W(58)	IW(28)
Dignity	I(42)	W(54)	O(50)	O(60)
Achievement	O(70)	O(74)	I(42)	I(56)
Autonomy	W(42)	W(34)	W(47)	W(48)
Money	W(46)	OW(37)	W(79)	W(44)
Individualism	I(42)	W(46)	O(39)	O(44)
Job satisfaction	O(44)	O(49)	I(61)	O(44)
Influence	W(46)	A(46)	W(65)	W(84)
Security	W(46)	W(46)	W(39)	W(44)
Power	AW(42)	A(46)	W(78)	W(80)
Creativity	O(39)	O(34)	I(46)	I(40)
Success	O(54)	O(46)	I(50)	I(44)
Prestige	W(61)	W(57)	W(75)	W(80)
Ideas About General Topics:				
Authority	O(30)	AW(38)	W(48)	W(44)
Caution	W(41)	W(63)	A(52)	W(60)
Change	W(39)	W(51)	W(48)	W(36)
Competition	O(44)	A(40)	W(30)	AW(33)
Compromise	W(56)	W(69)	A(35)	W(48)
Conflict	W(54)	A(47)	A(56)	W(52)
Conservatism	W(48)	W(77)	W(54)	W(60)
Emotion	W(56)	W(85)	W(56)	W(48)
Equality	I(42)	W(80)	O(44)	W(44)
Force	W(54)	A(59)	W(61)	W(76)
Government	W(58)	W(68)	O(36)	A(40)
Liberalism	W(74)	W(76)	W(54)	W(52)
Property	O(38)	OAI(26)	W(48)	W(44)
Rational	O(46)	W(46)	O(56)	O(40)
Religion	W(79)	W(86)	A(44)	W(58)
Risk	A(46)	A(34)	W(48)	W(56)

Note: Letters indicate modal behavioral relevance category.

Numbers in parentheses indicate percentage of managers falling in model O, A, I or W category listed.

Key: O = Operative value: very likely to affect behavior
A = Adopted value: likely to affect behavior when circumstances permit, (situationnaly influenced behavior)
I = Intended value: not likely to affect behavior because of situational factors, (behavior situationally inhibited)
W = Weak value: very unlikely to affect behavior

Value orientation main effects - differences among managers in the behavioral relevance of specific values that are chiefly associated with different value orientations - are evident in Table 3 for 22 specific value concepts. Pragmatists are much more likely than Moralists to translate values concerning the following concepts into actions: organizational stability, profit maximization, organizational growth, craftsmen, managers, ambition, aggressiveness, achievement, power, creativity, success, property, and risk. Moralists are much more likely than Pragmatists to take actions based on the following value concepts: social welfare, laborers, blue collar workers, loyalty, compassion, honor, dignity, individualism, and government. These differences in behavioral relevance of value concepts suggest very different styles of management in the two groups. Pragmatic managers in this sample probably make decisions which relate to getting things done, with both things and people dominating their thinking prior to making decisions. Moralistic managers in this sample reflect decisions which have more to do with human relations aspects of organization than with task accomplishment.

Person/thing orientation main effects are few in number in Table 3, but suggest substantial differences in managers' behavioral inclinations. Generalists are more likely than Thing Specialists to base actions on value concepts concerning coworkers, owners, and unions. In other words, Generalists may be expected to relate differently than Thing Specialists to these groups of people, chiefly because they consider them to be more important.

The major impact of person/thing orientation appeared in its interaction with value orientation. Unique combinations of person-thing orientation and value orientation produced differences in the behavioral potency of 22 value concepts in Table 3. Pragmatist-Generalists, for example, are much more likely than other managers to base actions on values concerning stockholders and authority, concepts other groups of managers consider unimportant. Pragmatist-Thing Specialists are somewhat more likely to take actions based on the value concepts money, influence, and force, and are less likely than all others to base actions on values concerning employee welfare, white collar workers, trust, tolerance, and rational. Moralist-Generalists are more likely than all others to base actions on values relating to prejudice, caution, compromise, religion, and equality, and less likely to base actions on values relating to their immediate superiors, ability, job satisfaction, and competition. Moralist-Thing Specialists are more likely to base actions on the value obedience, and less likely to base actions on values relating to customers, whom they see as unimportant. Managers had mixed reactions to the value concepts industry leadership and conflict.

This discovery of a substantial proportion of managers in the mining organizations studied who hold values in relation to business, people, and ideas which are concerned with the "rightness of things" rather than with the success associated with them is in keeping with England's findings in studies of managers in the United States and Australia. These studies indicated that managers with pragmatic orientations occur most frequently, followed by managers with moralist orientations (England, 1975). Earlier it was argued that distance of mines in small communities from the centers of change and controversy might allow managers to concentrate exclusively on business-related goals of organization which are success related and therefore pragmatic in emphasis. The presence of moralist managers in this setting may reflect another component of the "distance from change centers" variable. Organizational survival in small communities requires stability and a degree of harmony in the work force. There is a significant role within mining management in isolated communities (mining camps) which has to do with responsibility for the welfare of employees and their families. Perhaps it is this requirement which leads to the existence of moralist managers in noticeable numbers in small community mines. Further study is needed in order to test such assumptions.

CONCLUSION

The study reports on the values and person/thing orientations of small community mining managers in Canada. The values, analyzed within the framework of England's PVQ model and methodology, provide a description of managers in terms of the values which are most likely to influence their decision-making behavior. Managers' orientations to persons and things, analyzed within the framework of Little's model and Frost and Barnowe's measures of that model, provide a description of managers in terms of two fundamental organizational components, people and technology. Taken together, these notions of values and person/thing orientation provide an interesting insight into the similarities and differences which managers display toward organizational objectives.

It must be emphasized that managers in the sample, whether Pragmatist, Moralist, Generalist or Thing Specialist, are in many respects similar, that is, they share many of the same values. In terms of policy formulation, managers in all groups are likely to set policies emphasizing high productivity, efficiency, use of skill and cooperation both for themselves and for employees. They are unlikely to set policies emphasizing autonomy, change, conformity, security, prestige, or emotion. It is the differences bet-

ween groups of managers that point to fruitful directions for further investigation

Because the study has dealt with general level values and has yet to link either values or person/thing orientation to measures of actual behavior, the investigation is clearly preliminary, a first step toward understanding the decision-making of mining managers in these communities. However, certain findings stand out as interesting and worthy of further exploration.

First, Canadian mining managers in small communities appear primarily concerned with the operations of the firm, and except for the notion of industry leadership are not concerned with broader social values. The managers are technologists, are concerned with their work, and their values suggest that task accomplished behavior is of central importance.

Second, where differences exist between pragmatist or moralist oriented managers, these differences seem related to perceptions of the importance of the human component of work. To the extent that the operative mode predicts actual behavior, we would expect differences in approach between pragmatist and moralist managers. This is especially likely when managers are faced with policy decisions relating to employees and their roles in the organization. A perception of people as means to an organizational task end (the pragmatic orientation) may lead to different priorities in allocation of resources and in other behavior, than is the case in which the perception is of people as individuals worthy of attention as ends in themselves (the moralist orientation).

Third, mining managers in charge of line functions incorporating management of people were predominantly Generalists. Staff managers, on the other hand, were Thing Specialists primarily concerned with technical matters. This finding is in agreement with the research of Little (1972), who suggests that persons self-select roles that are congruent with their fundamental cognitive-affective predispositions.

Fourth, taking into account interactions between values and global predispositions toward persons and toward things allows fairly specific predictions about manager's behavioral inclinations. Describing managers in terms of pragmatism and moralism as well as person/thing generalism and specialism brought into focus important similarities and differences in the objectives managers appeared likely to pay attention to and potentially to act on. The findings concerning the relationship between person/thing orientation and objectives of managers are perhaps the most novel findings in the study.

Looking ahead, consideration of such interactions provides for some interesting speculations and hypotheses. By taking into account the unions and intersections of mining managers' membership in person/thing and value orientation groups, it is possible to construct a profile of likely influences on policy formulation for very specific groups of managers. For example, Pragmatist-Thing Specialists are likely to set explicit or implicit policies relating to money, influence, and force; organizational stability, and achievement; power, creativity and risk; and high productivity, efficiency, skill and cooperation. At the same time, they are unlikely to set policies advancing social welfare or employee welfare; or dealing constructively with unions, laborers, blue collar workers, or even their coworkers. Moralist-Generalists, on the other hand, are likely to set policies by virtue of valuing compromise, caution, and equality; unions, coworkers, and owners; social welfare, individualism, laborers, blue collar workers; and loyalty and conformity; as well as their values (shared with other groups) concerning high productivity, efficiency, skill, and cooperation. At the same time, they are unlikely to be motivated by ambition, aggressiveness, risk, profit maximization, power, or customers. Neither of the profiles just sketched is complete in terms of representing all of the data in Table 3, but clearly, strikingly different policies would be predicted for managers in these groups.

This paper has been purely descriptive of cognitive-affective differences among the mining managers studied. The findings can be used to predict that different types of policies will be set by managers with different cognitive characteristics, but cannot be used to predict specifically what policies will follow from valuation of specific concepts like "compromise", or "aggressiveness". What is needed is an extension of this research incorporating behavioral criteria, to identify directionality of influence of different operative values.

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Valeurs motivant les dirigeants de l'industrie minière: une étude de cas

L'objet du présent article est de découvrir ce que les dirigeants de l'industrie minière au Canada considèrent comme le plus important pour la direction de leurs entreprises. En d'autres termes, à quel système de valeurs se réfèrent-ils? S'intéressent-ils davantage aux personnes qu'aux choses matérielles?

Pour tenter de répondre à ces questions, l'auteur s'est inspiré de deux modèles d'analyse de comportement: l'un mis au point par England et ses collègues, fondé sur les valeurs de jugement personnel, l'autre appuyé sur la théorie de Frost et de Barnowe où il s'agit de savoir si les intéressés sont portés plutôt vers les choses que les personnes.

L'enquête fut faite à partir d'une liste de 594 membres de l'Institut canadien des mines et de la métallurgie en Colombie Britannique en Alberta et dans le territoire du Yukon. Il faut aussi noter que l'enquête porte sur les dirigeants d'entreprises situées dans des petits centres miniers. On a transmis par la poste à ces gens un questionnaire se rapportant à 66 concepts et 189 ont effectivement répondu.

Lorsque les données de cette enquête furent compilées, elles ont donné le résultat suivant: selon le système mis au point par England, 76 des 189 répondants ou 38% pouvaient être considérés comme essentiellement pragmatiques, 65 ou 35% de ces dirigeants fondaient leurs attitudes sur un corps d'idées arrêtées, 4% étaient plutôt de type affectif et 22% avaient une orientation plutôt mélangée. D'autre part, suivant la théorie de Frost et Barnowe, ces dirigeants se partageaient en deux groupes principaux. On pouvait classer 67 d'entre eux parmi les «généralistes», c'est-à-dire qu'ils portaient autant d'attention aux personnes qu'aux choses; 79 d'entre eux s'intéressaient strictement aux questions d'ordre matériel; 13 mettaient l'accent sur la personne et 22 pouvaient être rangés dans une catégorie que l'auteur désigne sous le nom de «non-spécialistes».

De l'étude ci-dessus, on peut tirer deux conclusions:

En premier lieu, les gérants de sociétés minières canadiennes, dans les petits centres, se préoccupent principalement du fonctionnement de l'entreprise et ils ne s'intéressent guère aux valeurs sociales d'ensemble, bien-être des travailleurs, environnement, etc... Ce sont des technologues intéressés à leur travail pour qui l'exercice de leur tâche est d'importance primordiale.

Deuxièmement, les différences d'orientation entre eux reposent sur la perception qu'ils se font du travail humain. Ceci se vérifie davantage chez ceux qui ont été obligés de prendre des décisions majeures se rapportant aux travailleurs et au rôle que ceux-ci tiennent dans l'entreprise.