DOCUMENT RESUME

ED 375 465 EA 026 157

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TITLE Problem and Dilemma Identification and Formulation As the Most Critical Element of the Decision-Making Process: Behavioral Biases and Characteristics.
PUB DATE May 94
NOTE 28p.; Paper presented at the International Intervisitation Programme in Educational Administration (8th, Toronto, Ontario, Canada, and Buffalo, NY, May 15-27, 1994).
PUB TYPE Speeches/Conference Papers (150) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Cognitive Processes; *Decision Making; *Decision Making Skills; *Educational Administration; Elementary Secondary Education; Evaluative Thinking; Foreign Countries; *Heuristics; *Policy Formation; *Problem Solving

ABSTRACT

This paper presents an overview of research in the field of decision theory, with a focus on problem and identification. The goal is to make the decision-making process as rational as possible in order to maximize the rational administration of the organization. The decisions associated with educational administration can be categorized as structured (programmed and routine) or unstructured (unprogrammed and more uncertain). In the face of uncertainty, decision makers often utilize labeling of the issues as threats or opportunities. Individual behavioral factors that affect the labeling process include perceptual filters, aspiration levels, capabilities and experience, and stress. The individual decision maker also uses various heuristic devices (rules of thumb) that affect issue labeling, such as elimination by aspect, intuition, anchoring and adjustment, the availability of options, and representativeness. In conclusion, three clusters of factors affect the labeling of issues: (1) the decision maker's (educational leader's) behavioral characteristics; (2) the educational organization's performance level; and (3) the environmental influence and locus of control. The most important is the decision maker and his/her ways of gathering, manipulating, and giving meaning to information. (Contains 72 references.) (LMI)

Problem and dilemma identification and formulation as the most critical element of the decision-making process: behavioral biases and characteristics

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Paper presented at the 8th International Intervisitation Program held at O.I.S.E., University of Toronto, Toronto, Canada, May 15-20, 1994

INTRODUCTION

A decision may be defined as the selection of a course of action from among two or more alternatives. The decision-making process is simply the sequence of steps leading to that selection (Sisk and Williams, 1981, p. 106). It is virtually impossible to describe a universal sequence of events leading to the perfect decision. However, research in the field of decision theory suggests that certain processes of decision-making tend to produce better results than others.

The underlying factor in rational decision-making is a requirement for a degree of predictability in the process used, but the identification and diagnosis of a problem is the most critical element of the decision-making process. A correct decision for the wrong issue can be disastrous and completely useless (Mitroff and Featheringham, 1974).

Decisions are action oriented. They are judgments that directly affect a course of action (Griffiths, 1958). As MacCrimmon (1974) says, thought-oriented decision-making can be defined in terms of information acquisition, information processing, and communication. The process then is a matter of getting more or less information. The identified problem requires a well-developed plan of action focused on the solution to be given. The developed plan of action should reflect the character of the organization, the specific excellence it needs, and its priorities (Drucker, 1974, pp. 196-200). **Character** is the direction (goals and objectives), **excellence** is what is truly important, and **priorities** mean that our strategic planning should consider that there are limited resources for an array of plans of action; thus, we should choose the most important ones for our organization.

When does a problem become evident? March and Simon (1958) suggest that problems become evident when managers are not satisfied with existing uses of resources. The level of their dissatisfaction usually stems from: (1) the quality of performance the manager expects within the organization, and (2) the reward resulting from the decision. The higher the levels of expectation of performance and

reward, the more likely the manager is to be dissatisfied with the existing use of resources. This dissatisfaction generates a perceived need for change, prompts the search for alternatives, and triggers the decision-making process (Haimann et al., 1982, p. 53). Bearing in mind that the decision-making process is the process of choosing among alternatives and that the choice is to be made under some degree of uncertainty, we must try to make it as rational as possible in order to make the process contribute to the rational administration of the organization.

DECISION-MAKING IN EDUCATIONAL ORGANIZATIONS

The impact of the decision process on the major and functional task areas in educational organizations can be demonstrated by the types of decisions required in the typical organization and in the skills required of the effective administrator as Williams suggests (Williams, 1984, p. 24). Dale lists the following types of organizational decisions: (1) policy decisions, which lay down the principles covering the conduct of the organization; (2) administrative decisions, which translate the policies into general courses of action; and (3) executive (ad hoc) decisions, which are made in light of policy and administrative decisions, but made at the point where the action is taking place (Dale, 1965, pp. 551-552).

The decisions associated with administrative management within the educational organization fall into two general categories: (1) structured (programmed) decisions, and (2) unstructured (unprogrammed) decisions. Programmed decisions are the more routine ones that are easily made at the lower organizational levels. The unstructured ones are the ones that are difficult to make and fall within the realm of great uncertainty. A five-year study of 25 strategic organizational decisions by Mintzberg, Raisinghani and Theoret (1976) concluded that:

> ...a strategic decision process is characterized by novelty, complexity, and openendedness, by the fact that the organization usually begins with little understanding of the decision situation it faces or the route to its solution, and only a vague idea of what that solution

> might be and how it will be evaluated when it is developed. Only by grouping through a recursive, discontinuous process involving many difficult steps and a host of dynamic factors over a considerable period of time is a final choice made. This is not the decision making under uncertainty of the textbook, where alternatives are given even if their consequences are not, but decision making under ambiguity, where almost nothing is given or easily determined. (Mintzberg et al., 1976, pp. 250-251).

One may assume that during the logical search for objectives, new objectives will be discovered in the process of decision-making. In the same piece of research, Mintzberg et al. (1976) identified six disturbances in the 25 strategic decision processes they analyzed that moved away from the ideal, orderly process of discovery, diagnosis, search, design, evaluation/choice, and authorization/implementation. These disturbances were: interrupts (caused by the environment); scheduling delays; timing delays and speedups (due to the decision-maker(s); feedback delays; comprehension cycles; and failure recycles inherent in the decision process itself.

It is precisely this uncertainty that forces decision-makers in the educational organization to utilize certain heuristics (rules of thumb) in order to facilitate the decision-making process and at the same time (hopefully) reduce the mental effort and increase the accuracy of the decisions.

The same uncertainty forces these decision-makers in educational organizations to utilize labeling of the issues they are confronted with in an effort to reduce them and/or to put their thoughts into perspective. It is suggested that according to what label is used (threat or opportunity), an entirely different process and assumptions will be utilized (Dutton and Jackson, 1987). In a recent piece of research with 70 community college presidents in Texas (Pashiardis and Baker, 1992), certain issues confronting these CEOs were specifically labelled either as a threat or as an opportunity and after checking these manipulations it was obvious that they

were successful. For instance, those situations described as a threat were perceived as such and vice versa.

As previously mentioned, most issues (problems and dilemmas) faced by educational organization leaders are ill-structured. Because these are the kind of issues addressed in the current study, it is important to know why these issues are ill-structured. Ungson, Braunstein and Hall (1981), mention five reasons: usually there is considerable ambiguity and limited information about the issues; the issues are being redefined as new information becomes available; programs of desired outcomes are unavailable; more than one person is likely to influence the whole process; and finally, the decision process is likely to extend over a long period of time.

Usually, educational organization leaders have trouble explaining what techniques they use in making these decisions because they are not consciously aware of how they make them. According to Simon (1959), well-structured problems can be formulated explicitly and quantitatively. This fact makes it easier for us to solve them with methods that we know today. For ill-structured problems, the essential variables are sometimes not even known, and they are qualitative rather than quantitative. Goals are also vague and non-quantitative. Most practical issues and decisions that executives face every day, particularly the most important ones, "lie much closer to the ill-structured than to the well-structured end of the spectrum" (Simon, 1959, p. 3). Furthermore, the higher one is in the organizational hierarchy, the more likely it is that the issues he/she is faced with are ill-structured rather than well-structured.

Mitroff and Emshoff (1979) contend that organizational ill-structured issues usually involve more than one person in their formulation, solution, evaluation, and implementation; the issue may be clearly stated, but there is no agreement by those dealing with it about an appropriate solution; there is no agreement on a methodology in order to reach such a solution; and there may be no agreement on a clear formulation of the issue, its objectives, and the controllable and uncontrollable

variables. Very similar to the above were the findings of the aforementioned research with community college CEOs in Texas. These CEOs could not agree whether they should use more outside consultants as opposed to people within the organization; furthermore, they could not agree on whether more formal analysis was needed as opposed to relying on their "gut-feeling" (Pashiardis and Baker, 1992). These characteristics further complicate an already difficult situation.

ISSUE AND DILEMMA DIAGNOSIS/FORMULATION

As Dutton et al. (1983) suggest, strategic issue and dilemma diagnosis refers to those activities and processes by which data and stimuli are translated into focused issues and explored. However, as Fredrickson (1983) suggests, our understanding of why people draw different conclusions based on similar information is very limited. Is it differences resulting from the content of the issue or dilemma itself, differences resulting from the behavioral characteristics of the people involved, or differences based on the nature of the organization and its environment? The same questions are being examined by other researchers (Lawrence and Dyer, 1983; Meyer, 1982; Pashiardis and Baker, 1992). In addition, Smircich and Stubbart (1985) contend that, "there are no threats or opportunities out there in an environment, just material and symbolic records of action and a strategist determined to find meaning..." (p. 726). This author believes that it is all of the above factors working together plus the performance level of the organization (Pashiardis and Baker, 1992) that help give meaning to an issue or dilemma. At the same time, all factors depend on the individual decision-maker's meanings and interpretations of certain issues. These meanings and interpretations are further constrained by the decision-maker's cognitive framework and ideas. Thus, the whole process of formulation becomes more complicated. For instance, community college presidents in Texas were given different types of situations (in a case study) confronting their colleges labelled either as a threat or as an opportunity. However, all the presidents regarded those cases as an opportunity regardless of the labeling (Pashiardis and Baker, 1992). Apparently, these CEOs were constrained by their respective cognitive framework and ideas.

In addition to being very complicated, the process of issue and dilemma formulation is dynamic and emergent. These kinds of decisions (strategic) are "messes" (Ackoff, 1981), very complex, non-routine, ill-structured, "wicked problems," and open-ended (Lyles, 1981; Mintzberg et al., 1976; Mitroff and Mason, 1980). As Mintzberg et al. (1976) posited, out of the 25 strategic decisions they examined in their research, information search (which is the first step in their diagnosis model) was present in 18. In addition, other authors (Dutton and Ottensmeyer, 1987; Pounds, 1969) suggest that the formulation stage is among the most critical because the meaning that will be attached to an issue during this stage will decide (most often irreversibly) the direction and intensity of further actions. Furthermore, several authors (Ansoff, 1984; Cowan, 1986; Lyles and Mitroff, 1980; Mintzberg, 1977, Quinn, 1980) contend that these unexpected events are usually sensed through informal means and that the managers who become aware of them assign meaning and definition to them. In a study by Lyles and Mitroff (1980), about 80 percent of the managers said they became aware of a dilemma's (problem's) existence from informal indicators. Thus, the most important next step is to give meaning to all the information that was gathered. Making sense of all the available evidence is crucial as to what the next steps will be.

According to Dutton et al. (1983), there are three distinct elements in conceptualizing the issue diagnosis--inputs, processes, and outputs. Mintzberg et al. (1976) suggest recognition and diagnosis as the two phases of issue formulation. Following Dutton et al. (1983), under input researchers examine the cognitive maps of decision-makers, their political interests, and the issue characteristics. Cognitive maps (Axelrod, 1976) or schemata provide the conceptual framework through which one views the world and gives meaning to data. With political interests in mind people try to distort information or give it a particular focus that matches personal needs and interests. Then, there are certain issue characteristics such as consistency, and time pressures for a prompt solution that give a different direction to the strategic issue diagnosis process.

From all the above labels are created that,

> ...reflect the understanding of a strategic issue from the perspective of the participants in strategic issue diagnosis. At another level, these labels serve to communicate understandings to the rest of the organization. The impact of these labels upon understanding and communication in strategic issue diagnosis implies that they have action consequences: labels mobilize action in a particular direction (Dutton et al., 1983, p. 316).

Thus, labeling an issue either as a threat or an opportunity may influence who gets involved in an issue; what kind of avenues are explored (and thus information-gathering activities); and how much risk we are willing to take. As noted by Tversky and Kahneman (1981), whether an issue is framed and presented either as a gain or as a loss has a profound impact on persons' preferences and the risk aversion that they demonstrate. More specifically, in the study about the Texas community college presidents it became evident that these CEOs were affected by their college's performance level as described in a case study. As was hypothesized in that study, the CEOs chose the more comprehensive approach of involving outside consultants, conducting extensive analyses, and generally including as many people as possible in the decision-making phase of the process (Pashiardis and Baker, 1992).

Generally speaking, people are willing to risk more to avoid the loss of a particular amount than they risk to gain the same amount (prospect theory). According to this theory, which was developed by Tversky and Kahneman, when the issue is framed as avoiding loss, larger amounts of money are likely to be risked when compared to the same issue or dilemma that is framed as a potential gain. Therefore, prospect theory would lead us to the conclusion that decision-makers will take greater risks in response to threats rather than opportunities. As Fredrickson (1985) suggests, the decision processes that managers employ in response to threats are very different from the processes that are motivated by opportunities. The same conclusion was reached by Pashiardis and Baker (1992).

Therefore, as Dutton et al. (1983) describe, "the labeling of a strategic issue is likely to affect subsequent considerations of the issue through its effect upon action outcomes such as involvement, commitment, divergent or convergent thinking and risk-taking behavior" (p. 317). Threats and opportunities have three attribute dimensions that differentiate them. Usually, opportunities are tied with positive situations that are likely to bring us gains and are under our control. Threats, on the other hand, are linked with negative situations over which we exert little or no control, and some loss is likely.

Labeling will result from the interaction of the external organizational environment (political, governmental, cultural, etc.) with the internal (ideology and structure). How this interaction is viewed is very important in understanding why certain issues are being treated as threats and others as opportunities. Once an issue has been labeled, a categorization process is activated that directs decisions, solutions, and actions of the organization (Dutton and Jackson, 1987; Pashiardis and Baker, 1992). The whole perspective of how an issue should be resolved is affected.

Actually, categorization theory makes it easier for people to remember things because a consistent method of classifying them under categories (or strands) with similar characteristics is used. As Dutton and Jackson (1987) explain, the categorical structure of knowledge helps explain three cognitive phenomena: (a) that memory for category-consistent information is generally better than memory for inconsistent information; (b) that constructive errors of memory (gap-filling) occur; and (c) that information distortion follows predictable patterns. However, for the above process to be valid, an implicit assumption must be borne in mind: The top decision-making group (or individual) who initiates the labeling should be highly trusted and influential. The aforementioned underlines the fact that labeling is very important (indeed crucial) for the future of the organization.

FACTORS WHICH AFFECT LABELING

Because the labeling of issues is so important for an educational organization, it is equally important (if not more) to examine and understand how issues are labeled. What affects labeling? It is proposed that several factors interact together. Some of the most important are related to the behavioral characteristics of the top decision-maker. Hambrick and Mason (1983) stress the point that strategic decisions are affected by the cognitive frames and maps of the organization's top executives. Therefore, it is the upper-level administrators who define the nature of strategic issues and solutions through their own frameworks (Ramaprasad and Mitroff, 1984). Other factors are related to the organization itself such as the organization's performance level (Pashiardis and Baker, 1992) and others to the environment outside the organization (Ford and Baucus, 1987), and whether one believes that one has control over the environment or that the environment controls us (external v. internal locus of control). This section mainly examines the behavioral characteristics and limitations of the top decision-makers, but reference to the organization will be made as well. Following are some of the behavioral characteristics and/or biases that might influence our Issue Labeling (Pashiardis and Baker, 1992). It is important to be aware of them because cognitive style (Bariff and Lusk, 1977; Zmud, 1979) and distortions (Nisbett and Ross, 1979; Tversky and Kahneman, 1974) may explain some of the variation in the comprehensiveness of educational leaders' information processing and thus make it easier to understand their impact on decision-making processes.

Individual filters--Simon (1957) coined the term *bounded rationality* and thus laid the foundation for the understanding of our limits as humans. Due to our information capacity limits, it is not possible to perceive everything that goes on around us. The same notion of perceptual filters was advocated very eloquently by Starbuck and Milliken (1988). As they suggest, "effective perceptual filtering amplifies relevant information and attenuates irrelevant information, so that the relevant information comes into the perceptual foreground and the irrelevant

information recedes into the background" (p. 41). Thus, we select, or filter the information we receive according to what our function is in the organization.

Furthermore, the filtering of information that persons use seems to be taking place in organizations as well. As O' Reilly (1982) suggested, different levels in organizational settings select and transmit information according to their political or other goals. Following Miles and Snow's (1978) terminology, an organization could be a prospector, defender, or analyzer and thus, seek different kinds of information. Depending on how the organization sees itself, it will use different perceptual filters. Subsequently, this will have an impact on information gathering. According to the information gathered, an issue will be labeled either as a threat or as an opportunity. And, once classified, it is difficult for an issue to change labels. As Dutton and Jackson (1987) suggest, "it is assumed that the initial categorization of a strategic issue as a threat or an opportunity persists over time" (p. 80).

Aspiration levels--According to the aspiration levels of the decision-maker, the interpretation of gathered information will result in differences in labeling. The decision-maker begins with an idealized goal structure and defines one or more action goals to start with. Action goals represent the decision-maker's aspiration level. Then, alternatives are examined and they establish a new point for further search. The level of aspiration is also a basis for bringing the search activity to a conclusion because it provides the criteria for evaluating the alternatives that have been found. Search among the limited alternatives continues until a satisfactory solution is reached.

Aspiration levels are usually formed through past experiences. As Nutt (1979) suggests, when experience is thought to be relevant, uncertain information stages can be explained; this reduces conflict and thus makes it easier for labeling. At this stage, evaluation stops as soon as the decision-maker's view is confirmed. Thus, it is suggested that if the aspiration level is set high, then more threats will be perceived than opportunities, since the organization is going to be struggling constantly and will have no slack to look for opportunities.

Capabilities and **experience** of the decision-maker also influence the process of labeling (Volkema, 1983). Recent studies (reported in Volkema) of the left and right hemispheres of the brain suggest that each hemisphere serves a different function. The left hemisphere specializes in logical, analytical, rational processes and verbal comprehension. On the other hand, the right hemisphere seems to be more intuitive and holistic and comprehends spatial relations and pictorial stimuli better than the left. Thus, according to which hemisphere is being more utilized, a person will draw different conclusions and thus, label an issue differently.

Concerning other factors that may influence the labeling of strategic issues, several researchers (Kleinmuntz and Schkade, 1988; Tversky and Kahneman, 1981) have shown that the order of information presentation and spatial proximity of the information presented usually affect (bias) the decision. Sometimes the first and last items in a sequential presentation assume greater importance without necessarily deserving it (primacy and recency effects). Also Russo (1977) has shown that people make different choices about what items to buy according to whether the prices of items are shown on a list or the store uses a unit-price system. Therefore, special attention should be drawn to how an issue (or information regarding the issue) is being presented to the decision-maker.

Furthermore, as reported by Starbuck and Milliken (1988) executives' experience may even be deceptive: long periods of gradual incremental development get interrupted by occasional bursts of radical change. But it is during the bursts that their creativity and problem-formulating ability is shown, thus, experience may deceive them.

Stress could be another factor that influences executives' perceptions. As stated in Volkema (1983), "stress is a function of an individual's ability to cope with the complexities and uncertainties of his or her environment, and can affect how much time and energy are devoted to formulating a problem" (p. 642). Stress, anxiety, conflict or excitement, if associated with time-pressures, can have disastrous results in the formulation of a strategic issue. What if the decision-maker is under

stress or anxiety? As Staw, Sandelands and Dutton (1981) suggest, "in the area of perception, research indicates that psychological stress interferes with the ability of subjects to identify and discriminate among visual stimuli" (p. 503). Thus, the top decision-maker's mental condition, use of heuristics and biases are directly connected to his/her sensemaking and labeling of strategic issues. At the same time, stress can be a source of motivation or triggering mechanism for action (Ford and Baucus, 1987). Furthermore, the same authors contend that the relation between stress and decision-makers' actions is curvilinear. As they suggest, "when stress accumulates to an intermediate level, and remains there, decision-makers are likely to respond actively with external or internal responses" (p. 371). Excessive stress also may inhibit the decision-maker's creativity.

Furthermore, the use of certain heuristics (rules of thumb) may affect the decision-maker's labeling of issues. For instance, if a decision-maker believes in incrementalism, different interpretations can result since the leader does not wait for all available information to be presented, or does not believe in big steps.

Lindblom (1959) with his studies, helped us change the basic behavioral model of limited search and goal modifications to make the problem or dilemma easier to handle. He contends that the decision-maker (being a pragmatist) will focus only on those alternatives that differ incrementally from existing policies and practices. He further states that there is no right or wrong solution and decision-making is like a corrective mechanism to alleviate current imperfections rather than to attain future goals. Etzioni (1967) writes on a similar wavelength as well. This is why we mainly "muddle through." A decision-maker who utilizes this heuristic would probably use different labels had he allowed himself to search more systematically.

Elimination by Aspects is a rule of thumb that was originated by Tversky (1972). The decision-maker decides which is the most important attribute (the attribute with the highest probability) and places a cut off value for it. Then, all alternatives with this attribute are examined and those alternatives with values on this attribute below the cut off line are eliminated. The process goes on with the second

most important attribute, then the third, and so on, until we are left with just one alternative. The use of this heuristic will probably lead the decision-maker to different labels depending on what is eliminated. For instance, where one places the cut off line will probably affect what gets labeled as a threat or an opportunity. If the cut off line allows many alternatives to be included then we will probably end up having many "opportunities" that might not be a true reflection of reality.

As previously mentioned, Simon (1959) argued that trying to reach the optimal solution to maximize our benefits is the ideal that cannot be reached due to our *bounded rationality*. We are constrained by limited information, limited time, and costs constraints; thus, we strive to find the most satisfactory alternative rather than the optimal one. The satisfactory alternative is based on a set of criteria that describe the cut off value, which should be reached by an alternative in order for that alternative to be chosen. This cut off value represents what Simon refers to as "aspiration level," which also Alexis and Wilson (1967) refer to in their research. Alternatives are then compared against this aspiration level. The first alternative that minimally meets this value is accepted; therefore, a choice can be made before all alternatives have been evaluated. This whole procedure was given the name *satisficing*.

However, our aspiration level should rise when an alternative is easily found, and we should lower it when we have difficulty arriving at a solution. This technique is used very often because of decision-makers' limited time to search for the perfect solution.

Decision-makers also rely on what is considered common sense, "I have a feeling," and other similar heuristics in order to arrive at solutions (**Intuition**). This reliance on the "gut-feeling" was evident among the community college presidents in Texas (Pashiardis and Baker, 1992). Then, they try to find a justification for their decision. However, as Tversky and Kahneman (1974) have shown, these intuitions can be seriously wrong and full of biases. For example, in an experiment, subjects were given five seconds in which to estimate the product of 1x2x3x4x5x6x7x8, and

came up with a median estimate of 512. Then, another group was given five seconds to estimate the product of 8x7x6x5x4x3x2x1, and the median answer this time was 2,250. The true value, however, is 40,320. Thus, caution should be exercised when we use our intuition in order to label an issue. For instance, what if our intuition suddenly sees an opportunity out there, and it turns out to be a disaster? It is useful to use our "gut feeling" with restraint so that we are able to see the threats as well.

Anchoring and Adjustment is another heuristic that could lead to serious faults in labeling strategic issues. As Tversky and Kahneman (1974) suggest, "anchoring occurs not only when the starting point is given to the subject, but also when the subject bases his estimate on the result of some incomplete computation" (p. 79).

Thus, the decision-maker starts from a point (anchor) and accordingly adjusts (based on new information, subjective probabilities, etc.) until a decision is reached. However, if the anchor is set too high, the decision-maker will probably not be able to see many opportunities or will not revise his anchor based on new information. On the other hand, if the anchor is set too low, threats will not be perceived.

Probability estimates are usually biased by another well-known heuristic, the **availability heuristic.** According to Tversky and Kahneman (1973), certain events are judged as more likely to occur if they are easy to remember. Likely occurrences are easier to bring into our short-term memory. Also, events familiar to us, similar, and recent, as well as events that are very important psychologically to us, are much easier to recall.

In an example cited in Tversky and Kahneman (1973), subjects were read a list of famous names. One of the lists had male famous names and not famous female ones. Even though the female names were more numerous than the male, the subjects tended to say that there were more male names on the list because those were the ones they could remember easier. The same happened with another list that

had famous female names on it and more numerous ordinary male names. Deception is a likely outcome when we use availability to label issues because we will probably use information that is readily "available" in our memory bank.

Numerous other experiments were conducted, e.g., deciding which is riskier (a) driving a car on a 400-mile trip, or (b) flying on a 400-mile commercial airline flight. Most people expressed the view that flying would be riskier just because of the sensationalism surrounding an airplane crash that is usually found in the media. Another example is that one may estimate the probability of heart attack among older people by bringing in his memory instances of people he knows who have had heart attacks. By using this availability heuristic, we may only use experiences that are available to us in a certain context during some stage of our organization's growth. However, those experiences at that period may have been perceived as threats, whereas now they could be great opportunities (due to contextual changes) that we have already mislabeled and thus missed them.

Representativeness is a judgment rule in which we infer that an event is being generated from another event as long as the first event has some characteristics similar to the second. Usually people do not even consider base-rate information in order to infer such relationships. It was found by Tversky and Kahneman (1973) that when no specific evidence is given, base-rate information is used correctly; when useless information is given, base-rate information is not taken into account. Therefore, the use of this heuristic could lead to crucial mistakes in mislabeling an issue by misusing base-rate information. For instance, representativeness can mislead us when we perceive certain environmental characteristics as threats (and thus label them as such) and then keep treating them in subsequent occasions as such, whereas they may be opportunities. Therefore, certain similarities between events do not necessarily preclude that they are the same (e.g., threats do not continue to be threats under every context, etc.).

Biases in information processing because of the use of heuristics are numerous and have been documented in several pieces of research (i.e., Hogarth,

1987; Tversky and Kahneman, 1973, 1974; Payne, 1976, 1982, to name a few). As noted by Tversky and Kahneman (1973), "when the size of a class is judged by the availability of its instances, a class whose instances are easily retrieved will appear more numerous than a class of equal frequency whose instances are less retrievable." Therefore, the availability heuristic can lead us to these kinds of biases. Also, chain "availability" of particular "cues" in the immediate environment affects judgment as noted by Hogarth (1987).

Furthermore, as mentioned earlier, **selective perception** can lead us to several different kinds of biases (Starbuck and Milliken, 1988). For instance, people design their decision strategies on the basis of their personal experiences. In addition to that, people tend to perceive things according to what they expect thus, leading themselves to further biases, and at the same time they try to confirm their own hypotheses thus, furthering the bias.

Illusion of control (Langer, 1975) is another bias where a person believes that he will be successful at something where he might not even have control over (e.g., planning, forecasting, etc.). That is, the activity itself induces us to believe that we are in control when actually we are not. Therefore, one may end up treating an issue as a threat because one feels that it is beyond his control or that the issue is under control when in actuality it is not.

The **regression bias** makes people expect that a good previous performance will lead to a better one, etc., thus, not allowing for regression to the mean. For instance, Tversky and Kahneman (1973) reported that during the training of pilots in Israel, the trainers realized that when they praised the students, their performance dropped and thus, based on the regression bias, would infer that punishment will lead to better results. However, due to regression effects improvement of performance would be likely even without any intervention. In this respect, decision-makers may see threats coming continuously in the organizational environment and become pessimistic and not see an upcoming opportunity that probably is coming due to the regression to the mean.

Hindsight bias is also evident in many decisions as Fischoff (1975) has shown. That is, in retrospect, people are not surprised that things turned out the way they did. They can easily find explanations to justify that this would have been the inevitable course. Thus, a threat that proved to be an opportunity (probably because of other reasons beyond the control of the decision-maker) will continue to be treated as an opportunity to the detriment of the organization due to the decision-maker's hindsight that says, "you see, it was not a threat after all!"

Furthermore, **misperception of chance** (Tversky and Kahneman, 1971, 1974) i.e., the gambler's fallacy, can lead to biased decisions. For instance, after a gambler sees several successive reds in the roulette, he will think that black is bound to come this time, so he will bet on black. In short, the observation of an unexpected number of similar chance outcomes leads us to the expectation that the event we have not seen for a while will appear this time. Similarly, after several threats endangered the organization, the decision-maker thinks that better times are bound to come. Therefore, the first issue that confronts him gets to be labeled in a biased way because the decision-maker (gambler) is expecting to win this time.

Illusory correlation (Tversky and Kahneman, 1974) is also a bias that could be the result of the use of the availability heuristic. People believe that two variables co-vary when in fact they do not, and thus, we may select the wrong variable to make a prediction. As mentioned in Bazerman (1986), "Chapman and Chapman (1967) have noted that when the probability of two events co-occurring (i.e., playing a physically superior basketball team and losing) is judged by the availability of past co-occurring instances, the ability to generate former mutual occurrences is likely to result in an inappropriately high probability being assigned to the two events co-occurring in the future" (p. 21). Thus, things that happened together in the past and presented the organization with big opportunities will be presumed to be related, and they will be judged under this prism in the future, when in fact, there is no relation whatsoever.

All of the above mentioned behavioral heuristics and biases have the potential of influencing to a large degree the way we treat issues/dilemmas, depending on how they are being used (or misused) by the decision-maker. Leaders of educational organizations should be educated about the existence of these information filtering mechanisms so that they can make their labeling process as rational as it can be. In addition, we must realize and accept that, due to the above filtering mechanisms: (1) Educational organizations will not be able to explicitly define issues, and (2) Leaders of educational organizations will interpret the same situation or environmental indicators differently as shown by Pashiardis and Baker (1992). However much more research is needed in order to firmly establish the notions expressed above.

An organizational factor

Another factor, organizational this time (as opposed to behavioral), which may have an effect on how issues are labeled, is the performance level of the organization (Fredrickson, 1985; Pashiardis and Baker, 1992). High levels of performance will provide resources that exceed those required by the organization, thus creating a "slack" (Bourgeois, 1981). Thus, the educational leader feels at ease and is relaxed and therefore issues will tend to be resolved without much resort to information search (Cyert and March, 1963). Furthermore, when the educational organization is performing poorly, the leader is more prone to use extensively the existing personnel involved and achieve consensus in order to avoid any adverse effects from making a wrong decision. On the contrary, when the organization's performance was excellent the leaders tended to use more outside consultants and conduct extensive analyses before reaching decisions (Pashiardis and Baker, 1992). On the other hand, when performance is poor, it leads to patterns of information search, resource expenditures, and concerns for consistency that differ from patterns that emerged in the previous situation (Fredrickson, 1985).

However, even though organizational performance and environmental influences are important when we examine the factors that influence issue labeling,

still, it is the decision-maker who will give meaning and interpret and analyze the information received. Therefore, it all boils down to the top decision-makers.

CONCLUSIONS/NEED FOR FURTHER RESEARCH

Issue and dilemma formulation/diagnosis has been largely ignored and only recently did researchers start to focus on this process. However, as Mintzberg et al. (1976) suggest, it is probably the single most important step towards solving these kinds of issues. The same contention is included in the writings of several other prominent researchers (Lyles, 1981; Volkema, 1986; Dutton and Jackson, 1987; Cowan, 1986).

Furthermore, the factors which influence the labeling of issues and dilemmas have been researched very little. Fredrickson (1983; 1985; 1986), Dutton and Jackson (1987), Pashiardis and Baker (1992) and Starbuck and Milliken (1988), are some of the few who started paying attention to this particular step of the issue formulation process. Nevertheless, it is during this stage that top decision-makers will form opinions and based on several factors (i.e., what information was presented, how it was presented, organizational performance level, etc.) further action will follow. It is during this stage that sensemaking will take place. And, as Starbuck and Milliken (1988) mention, "sensemaking has many distinct aspects--comprehending, understanding, explaining, attributing, extrapolating, and predicting" (p. 51). If we do not know what really impacts this stage and what has importance, then, we simply cannot expect to control the process. By not controlling it, probably our educational organizations will loose excellent opportunities or they will not perceive dangerous threats. Because it is leaders of educational organizations with their interpretations and sensemaking who give meaning to issues. As Volkema (1986) contends, we need to fully understand "...the strong relationship that exists between the way a problem is represented and the solutions or ideas the representation can produce" (p. 648).

In this study, it has been suggested that three clusters of factors have great influence on Issue Labeling in educational organizations (and any organization for

that matter): (1) the decision-makers' (educational leaders') behavioral characteristics, (2) the educational organization's performance level and, (3) environmental influence and locus of control. In the author's view, the single most important factor is the decision-maker and his/her ways of gathering information, manipulating it and giving meaning to it (Starbuck and Milliken, 1988). Even the other two clusters of factors--the organizational and the environmental--depend on the decision-maker for interpretation and analysis.

Much further research is needed in this area. For instance, the use of which heuristics help the educational leader label issues more correctly? Which of those bias his/her interpretations? Also, what affect does the way information is presented have on the labeling of an issue?

Another area of research would be to conduct a systematic analysis of the interactions among cognitive and organizational variables (Kiesler and Sproull, 1982). How do managerial cognitive processes affect organizational variables such as performance level?

Another excellent area of research would be to conduct an investigation on the ways in which decision-making processes affect the choice of educational organization structures. Shrivastava and Grant (1985), presented a good study of decision-making processes and organizational learning which provide some good starting points.

Also, the politics involved in sensemaking and labeling would be an interesting area of research. Educational organizations and their leaders live in such highly politicized environments which we may find out that we cannot control rationally. To underline the importance of the political perspective, Narayanan and Fahey (1982) contend that, "commitment to a strategic decision begins to evolve during the early phases of decision-making (rather than after the decision is made)" (p. 32). This statement has wide implications as to how information is presented and what is presented, and thus, warrants further investigation.

As a final word, it should be mentioned that much research is needed on what goes on in the "black-box", which is the educational leader's mind, in order to find out what the factors are which influence this very delicate stage of issue-formulation and how we can make it a better and more reliable process.

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