

Division of Research  
School of Business Administration

September 1989

INTERPRETATIONS ON AUTOMATIC: A DIFFERENT  
VIEW OF STRATEGIC ISSUE DIAGNOSIS

Working Paper #614

Jane E. Dutton  
The University of Michigan

I wish to thank Eric Abrahamson, Janet Dukerich, Marlene Fiol, Bill Foraker, Frances Milliken, Lance Sandelands and Susan Schneider for comments on earlier drafts of this manuscript.



**INTERPRETATIONS ON AUTOMATIC:  
A DIFFERENT VIEW OF STRATEGIC ISSUE DIAGNOSIS**

Models of strategic decision making and environmental scanning typically assume that decision makers diagnose issues actively--using conscious and intentional effort to identify and to interpret potentially significant events, developments and trends. This paper establishes that conditions in organizations put decision makers "on automatic" in their diagnosis of strategic issues, with direct implications for the process and content of strategic action. Implications for theory and practice are established.



Issue diagnosis describes the process through which decision makers imbue ambiguous events, developments and trends with meaning. For this paper, we are concerned with diagnoses of a subset of issues that will be called strategic issues. Strategic issues describe emerging developments, trends or events that have the potential to affect organizational performance (Ansoff, 1980; King, 1980). By focusing on the interpretation of strategic issues, the paper addresses the early routines of strategic decision making, when issues are recognized and given meaning (Mintzberg, Raisinghini and Theoret, 1976). Consistent with a social constructionist view of organizational action, the interpretation of strategic issues is assumed to have consequences for organizational action and performance (Anderson and Paine, 1973; Daft and Weick, 1984; Dutton and Duncan, 1987; Milliken, 1987).

The diagnosis of strategic issues is consequential both for the managers who do it and for the organizations that employ them. For managers, the diagnosis of issues identifies who will be involved in an issue, what role an individual is likely to play, and the amount of resources allocated to an issue (Dutton, Stumpf & Wagner, 1989; Lyles and Mitroff, 1980). For example, if a technological development is interpreted as a threat, fewer individuals may be motivated to work on the issue, participation may come from higher levels in the organization, and more time may be allocated to the issue than if the development were interpreted as an opportunity (Dutton & Jackson, 1987). At the organizational level, interpretations of issues as threats may engage a less comprehensive decision process (Staw, Sandelands and Dutton, 1981), yet ease the allocation of budgetary resources to the issue. Thus, different interpretations of issues engage different individual and collective processes for dealing with them, resulting in different organizational outcomes.

As researchers of strategic decision processes we have typically ignored the diagnosis process (Mintzberg et al. 1976). When we have considered it, we have assumed that these diagnostic or interpretive processes involve the active, conscious and

intentional efforts of decision makers (e.g., Dutton & Duncan, 1987; Dutton, Fahey & Narayanan, 1983; Milliken, 1990; Nutt, 1976). Even Daft and Weick (1984) who highlight the importance of event interpretations for subsequent organizational action suggest that "managers actively try to make sense of them." In addition, researchers who have theoretically and empirically studied the problem formulation process have adopted similar assumptions about intentional efforts of individuals involved in these interpretive activities (Cowan, 1986; Lyles and Mitroff, 1980; Pounds, 1969; Volkema, 1986). This paper attempts to modify this claim. It describes two modes of strategic issue diagnosis (SID)--reflective or **active SID** and unreflective or **automatic SID**, and argues why this distinction is important for understanding strategic decision processes and outcomes.

The paper's claims are consistent with those who advocate that theories of social and individual cognition are useful for understanding behavior of top level decision makers (e.g., Barnes, 1984; Bateson and Zeithaml, 1989; Hambrick and Mason, 1984; Keisler and Sproull, 1982; Schwenck, 1984; Stubbart, 1988; Walsh, 1989). The paper is also consistent with those who have argued that individual and collective behaviors in organizations have a large routinized, habitual and programmed component (e.g., Nelson and Winter, 1984; Pondy and Huff, 1985; Hedberg, 1981). However, the value added of the paper is that it seeks to explain how these routinized or habituated behaviors can be traced to the relatively spontaneous, involuntary activation of associations or responses that have been well-learned, and stored in decision makers' memories. Strategy process researchers can benefit from understanding psychologists' studies of these information modes to know when decision makers will "go on automatic" in their interpretation of strategic issues, and the implications for subsequent actions.

The purpose of the paper is to describe the individual, task and organizational conditions that put decision makers in this automatic mode in their interpretations of strategic issues. The conditions are outlined in a series of testable propositions, and practical, theoretical, and research implications of this view are discussed.

Within this paper SID is portrayed as primarily an individual cognitive process, recognizing the descriptive limits of such a view. This perspective ignores the **social** side of SID, involving the interactions between decision makers to arrive at the classification, understanding and interpretation of an issue. It also does not consider the **political** side of SID--i.e., the role of issue sponsors and interest groups in galvanizing interest around an issue and its consequent interpretation (Cobb, 1986; Dutton et al. 1983; Narayanan and Fahey, 1982; Lyles & Mitroff, 1980). Instead, we highlight the cognitive processes that underpin SID. Such a focus assumes that understanding the cognitions of top level managers is consequential for understanding organizational action.

### **TWO MODES OF SID**

Imagine as a decision maker in your own organization, that public media and internal medical reports indicate a new strain of virus has been detected and is spreading rapidly among certain population segments. At the present time there is no known cure. Although at this time it is difficult to assess the effects of this public health issue on your own firm's employees or their families, this issue could become a major strategic human resource issue for the firm. This scenario is more than hypothetical; it matches the dilemma that faces U.S. corporations as acquired immunodeficiency syndrome (AIDS) becomes a growing concern (Heisler, Jones and Benham, 1988).

The decision maker's connection to the issue and the context in which the issue is encountered may induce an automatic or active diagnosis of the issue. An automatic diagnosis involves the activation of ready-made interpretations of the issue built from encounters with issues in the past. Decision makers may simply classify the AIDS issue as a "medical cost issue" that has associated with it limited ramifications for the firm's strategy or performance. This issue interpretation is automatic (Schiffrin & Schneider, 1977), involving limited cognitive effort or expenditure of attentional and analytic resources to comprehend the issue. Decision makers who impose the "cost interpretation" on the AIDS issue are not aware that their diagnosis has been triggered

automatically. Their interpretation of the issue is a form of recipe (Weick, 1979) based on "chronic expectancies that have evolved out of frequent and consistent experience with specific environmental domains" (Bargh, 1982, p. 426). Thus, while decision makers have not previously encountered AIDS as a medical cost issue, the escalating medical and insurance costs associated with the changing face of U.S. medical care makes "rising medical costs" a frequently employed interpretation (Heisler et al. 1988). Once this interpretation is activated, search for additional information on the issue is limited, preserving rather than expending scarce attentional resources (Bargh, 1982).

Active SID represents a contrast to the automatic mode. It is intentional and conscious, involving a much greater degree of information search and analysis. In this mode, decision makers may uncover multiple interpretations for the issue, ranging from the medical cost framing mentioned above, to views of the issue that incorporate morale and productivity considerations and issues of employees' rights, such as the right to privacy or right to know (Heisler et al. 1988). In this mode of SID, greater attentional resources are expended to sort relevant from irrelevant information and to search beyond the information that is readily apparent.

The active and automatic modes of SID mirror a larger distinction made between two different modes of attentional and search processes identified by psychologists (Bargh, 1982; Hasher and Zacks, 1979; Posner and Snyder, 1975; Shiffrin and Schneider, 1977). While psychologists have given the modes different labels, they are based on observations that individuals can switch gears between automatic and active (or visa versa) attention and search processes, and that engagement in one process vs. another has implications for the outcomes that follow (Louis and Sutton, 1988). This perspective complements the view that individual's expectations or theories (i.e., schema) can guide the selection and evaluation of information (Nisbett and Ross, 1980). This distinction between processing modes suggests that these expectations will be dominant when automatic processes are engaged. While these two processes are depicted here as distinct



types to emphasize their differences, more accurately they represent two ends of a continuum describing the amount of attentional and processing resources applied by an individual in an activity (Hasher and Zacks, 1979).

### **Why Two Modes of SID?**

Decision makers confronted with strategic issues, like all individuals, have limited attentional capacity (Kahneman, 1973; Miller, 1956). These capacity limits mean that scarce attentional resources are preserved through automatic modes of information processing and reliance on heuristics or judgmental short-cuts to form inferences (Tversky and Kahneman, 1974). In automatic processing, cues that a decision maker is not aware of activate issue interpretations, while at the same time, preserving attentional resources for other demands on decision makers' time. An automatic processing mode "minimally diminishes one's capacity to process other components in the flow of information" (Hasher and Zacks, 1979, 358), thus acting as a type of attentional short cut. Thus, in the case of the AIDS issue described above, by automatically categorizing the issue into a well-learned class of strategic issues, decision makers have attentional resources to devote to other activities and actions.

In this paper we argue that conditions operating in organizations and on strategic level decision makers, in particular, make an automatic SID a dominant form. The implications of automatic SID make its prevalence important for both theory and practice.

### **CONDITIONS CONDUCTIVE TO AUTOMATIC SID**

Based on a review of available literature, three sets of conditions can be isolated for their effect on the use of automatic SID: 1) decision makers' connections to the issue; 2) issue context factors; and 3) organizational characteristics.

## **Decision Makers' Connections to Issues**

Decision makers interpret issues differently based on their level of experience with an issue type, the self-relevance of the issue, and their issue evaluation. As will be shown below, research suggests that these issue connections affect whether decision makers will engage in a more automatic SID process.

**Issue familiarity.** The functional training of decision makers, their tenure within a unit or organization, and the frequency with which an individual deals with certain strategic issues, individually and collectively make decision makers highly familiar with some types of issues, while relatively ignorant of others. For example, marketing-trained strategic decision makers are likely to be more familiar with issues of product image and pricing than individuals trained in engineering, finance, or production. As a consequence of this functional familiarity, when confronted with an issue framed as a marketing issue, decision makers with this functional training view the issue in a particular way (Dearborn & Simon, 1958). The functionally-based view of the world is perpetuated by the activation of automatic diagnosis of new issues.

**P1:** The greater the level of issue familiarity, the greater the occurrence of automatic SID.

This proposition gains support from studies of automatic vs. controlled detection and search processes in psychology as well as in studies of human inference processes (Nisbett and Ross, 1980). Shiffrin and Schneider (1977), for example, argue that, as individuals are trained in a task, they become more likely to rely on automatic processes. These automatic processes mean that a "relatively permanent set of associative connectors in long term store" are activated (Shiffrin and Schneider, 1977, p. 156). The automatic process may activate information (e.g., a medical cost diagnosis activates attention to past medical insurance price increases) or it may activate action (e.g., medical cost issue activates delegation to the Medical Benefits department) (Shiffrin and Schneider, 1977). In either case, a decision maker's interpretation of, and action on, the issue take place with only limited, if any, conscious awareness or energy consumption.

**Issue' relevance to the self.** Strategic issues vary in terms of the degree to which they implicate involvement of the decision maker. Issues are more self-relevant to an individual if the individual has a stake in the cause of the issue, the issue's processing, or the issue's outcomes. For example, in explaining why some firms have responded to the rise in the number of working parents in the workplace, Friedman (1984) notes that responsive organizations are ones that have a married woman or a man with older daughters in top decision making positions. Decision makers in this situation diagnose the issue more automatically because the issue affects them personally. A second proposition about the relationship between a decision maker's issue connection and automatic SID is:

P2: The more self-relevant the issue, the greater the occurrence of automatic SID.

The argument that the self-relevance of an issue **increases** rather than decreases the probability of automatic interpretations seems counter-intuitive. Everyday experience suggests that we exert greater effort (and more active processing) when faced with issues that peak our interest because of their self-relevance. However, research from psychology suggests our intuitions may be based on wishful thinking, and not sound, empirical grounding.

For example, Bargh (1982) demonstrated that self-relevant cues intervened automatically in a dichotic listening task, despite individuals' attempts to ignore them. This finding, he claims, is evidence of a more general tendency for information relevant to the self to be processed differently (i.e., more automatically) than other types of information (e.g., Markus, 1977). The reason for the automaticity of response to self-relevant information is still being debated. Some claim that self-relevant information is more emotionally charged, and it is the emotionality of the information that brings about an automatic claim on attention (Bargh, 1982, Nielson and Saranson, 1981). Others argue that self-relevant information is encountered more frequently through everyday experience, and it is the greater amount of rehearsal with

this type of information that accounts for its automatic processing (Bargh, 1982). Whatever the cause, there is evidence which suggests that, where an issue has personal relevance to the decision maker, it will be diagnosed in a more automatic than active mode.

**Strength of issue evaluation.** Finally, experienced decision makers rarely are neutral with respect to the strategic issues they encounter. Some issues call up strong negative evaluations (such as demographic, technological or political trends that imply a loss to the organization), while others have an equally strong, but positive association such as trends that imply gains for the firm. Whether a decision makers' attitude toward the issue is strongly positive or strongly negative, the strength of the association puts decision makers on automatic in their diagnostic activities. Stated in proposition form:

P3: The stronger the evaluation of an issue (positive or negative), the greater the occurrence of automatic SID.

Fazio et al. (1986) demonstrated empirically that mere exposure to an object (as applied here, to a strategic issue), for which an individual has a strong evaluative association, automatically activates concepts and responses that are well-learned, without limited reflection or active attention on the part of the decision maker. They argue that this effect occurs because the strength of association between an issue (the object) and evaluation determines "the accessibility of the attitude from memory and the likelihood that the attitude will be activated automatically upon the individual's encountering the attitude object" (Fazio et al. 1986, p. 230). This finding is important for the framework suggested here for it illustrates that decision makers' affective reactions (as well as the semantic meanings and behavioral responses to issues), may be "hard-wired". That is, experience creates a direct link between issues and affect. Affective reactions to an issue, in turn, may affect the probability that an attitude toward an issue can be influenced by the receipt of subsequent issue-related information (Fazio et al. 1986). These tendencies may be magnified or diminished by the decision context in which an issue is encountered.

### **Characteristics of the Issue Context**

Strategic decision makers exist in a context in which they experience time pressure and information overload. These characteristics, in turn, tend to engage an automatic mode of SID.

**Time pressure.** While strategic issues, by definition, are important because of their potential future consequences for the firm, their detection is often accompanied by a sense of time pressure or immediacy. For example, the hospitals studied by Meyer (1982) faced an immediate strategic issue when doctors went on an unanticipated strike, with little forewarning to hospital administrators. Even when a strategic issue is detected at an early stage in its life cycle, the wish to minimize future losses and to get a jump on the competition puts time pressure on decision makers. These pressures are magnified when decision makers believe that they must create an image of control and effectance to their followers (Pfeffer, 1980). This image is maintained if decision makers act quickly once an issue is detected, even if the issue itself does not require an immediate response. Where these pressures are present, decision makers tend to rely on past diagnostic routines, which construct the issue in a light that is familiar. The activation of "old" interpretations engages old programs for dealing with the issue. Thus, we expect that in the face of time pressure, an automatic mode of SID will dominate:

**P4:** The greater the time pressure associated with an issue context, the greater the occurrence of automatic SID.

Support for this prediction is gleaned from a number of studies of the effect of time pressure on choice behavior. The general findings are that time pressure is associated with greater information filtering in the form of greater selectivity of information attributes and greater weighting of the most important information (e.g., Ben Zur and Breznitz, 1981; Payne, Bettman and Johnson, 1987; Wright, 1974). Payne et al. (1987) use their results to suggest that individuals are adaptive to the decision task at hand, and use process feedback from the task itself to know what choice heuristic is most appropriate. However, an alternative interpretation could be that under time pressure,

individuals simply "go on automatic" in the sense of using simple routines that sort valuable from invaluable information, and choice rules that have worked well in the past. In context of SID, this automaticity results in a quick typing of issues into well-used categories built from decision maker's past experience, a reduced consideration of new issue information, and an habituated issue response.

**Information load.** Strategic issues are often difficult to handle because of their complexity (their causes, probable consequences, and possible actions) and because of conflicting preferences of parties that have stakes in the issue. The broader implications of strategic issues (as opposed to tactical or operational issues) mean that a wider set of constituencies will likely be affected by the issue, thus expressing a broader set of preferences. All told, strategic issues often confront decision makers with more information than they can realistically process. The presence of information load, like the presence of time pressure, engages the preservation of scarce attentional resources, making an automatic diagnosis more likely:

P5: The greater the information load contained in an issue context, the greater the occurrence of automatic SID.

Like time pressure, information is another component of task complexity (Abelson and Levi, 1985). The net effect of heightened time pressure and information load is to increase the amount of information a decision maker has to handle per period of time. The evidence of effects of information load has been tested by varying both the number of alternatives and number of attributes that have to be considered in a judgment task (Svenson, 1979). The general findings are consistent with those from studies of time pressure: under conditions of information overload, decision makers tend to reduce search and simplify decision rules (Abelson and Levi, 1985; Schneider, 1988). These empirical findings could be evidence of a different mode of information processing--e.g., one that is dominated by an automatic component.

## **The Organizational Context**

The mode of processing that individuals engage in to make sense of the world around them is sensitive to characteristics of the organization in which this sensemaking takes place (Louis and Sutton, 1988). In particular, we propose that the specialization and routinization of issue management activities, the dominance of norms for consistency, and past performance success all contribute to the dominance of automatic SID.

**Specialization and routinization of issue management activities.** Organizations vary in the degree to which issue management activities are carried out by a distinct and specialized individual or group, and the degree to which these activities are formalized and stored in behavioral routines or programs. All organizations are engaged in some form of issue management--whether informal or formal. Issue management refers to the "set of organizational procedures, routines, personnel and processes devoted to perceiving, analyzing and responding to strategic issues" (Dutton and Ottensmeyer, 1987, p. 355). In some organizations these activities are conducted by one or several individuals, in others these activities are formally assigned to environmental scanning or public affairs departments.

Where issue management is highly specialized, a select set of individuals have the task of scanning the internal and external environments, interpreting and recommending or taking action on the issue. Where issue management is highly routinized, formal procedures and plans are followed that specify where issues should be looked for (e.g., in the political, social, economic realms), how they should be prioritized (e.g., some weighting of immediacy and scope of impact), and sets of possible responses (e.g., the timing of the response, who should be delegated the issue, etc.).

Where issue management activities are highly specialized and routinized, the diagnosis of strategic issues is provided automatically by following a specific formula or classification routine. For example, firms that employ formal environmental scanning

activities often use the categories of threats and opportunities as classification schemes for strategic issues (Dutton and Jackson, 1987). The routine classification of issues into one category or another produces a summary interpretation of the issue. Thus, where issue management processes are formalized and specialized, issues are diagnosed on automatic, with little if any, additional effort or informational input. Correspondingly, we predict:

P6: The greater the level of specialization and routinization of issue management activities, the greater the occurrence of automatic SID.

To date, there is no direct empirical evidence relating characteristics of issue management activities to modes of individual information processing. However, Starbuck (1983) and Starbuck and Milliken (1987) have made compelling arguments that programs and routines in organizations generate action automatically, with little mediation by individual thought. "Organizations frequently create action generators, automatic behavior programs that require no information bearing stimuli because they are activated through job assignments, clocks and calendars" (Starbuck, 1983, 93). Calder and Schurr (1981) concur that organizations instantiate schemas in the minds of individuals through group membership and more formalized routines and procedures. In essence, the argument here is that formal and specialized issues management activities put decision makers on automatic in the diagnosis of strategic issues. This tendency is amplified where norms for consistency are prominent.

**Norms for consistency.** Organizations also vary in the degree to which consistency in action and interpretation are valued. Where a "strong culture" (Peters and Waterman, 1982) exists, there are pressures for individuals to conform to the dominant frame of reference and values shared by organizational members. In these type of settings, there are pressures to behave in ways that are consistent with past behavior. We propose that where these types of norms exist, decision makers will diagnose issues using understandings built on past experience, i.e., an automatic form of SID will dominate.



P7: Where norms for consistency are prominent in an organization, there will be a greater occurrence of automatic SID.

Empirical evidence for this proposition comes from studies of escalation behavior (see Staw and Ross, 1987 for a review). For example, one experimental study of individuals' judgments of administrators' consistency in action showed that individuals strongly approve of consistency of administrators' actions, independent of the value of the outcomes produced by these actions (Staw and Ross, 1980). One conclusion from this line of research is that "special praise and admiration are reserved for leaders who 'stick to their guns'" (Staw and Ross, 1987, 59). As applied here, we expect that norms for consistency not only make administrators more persistent in their actions, but also more automatic in their diagnosis of strategic issues. The rewards that are received for consistent behavior tend to reinforce past ways of contemplating issues. However, the occurrence of automatic SID is also related to past performance success of the organization.

**Past performance success.** An organizations' performance record also acts as a strong reinforcer for decision makers' interpretations and actions. Where the organization's performance record is strong (high levels of success over long time periods), decision makers are likely to feel more confident in their views of the causes and solutions for issues, and consequently, to rely heavily on past issue interpretations. For example, Starbuck, Greve and Hedberg (1978) describe the case of Facit Corporation whose decision makers ignored significant changes occurring in the market for electronic calculators due to their success with mechanical calculators. Old interpretations were "well-grooved" and rewarded by past success, eventually putting the organization in a crisis situation. In both the detection and interpretation of strategic issues, decision makers in organizations that have been historically successful are likely to rely on past diagnoses, putting decision makers into an automatic SID mode.

P8: The greater the level of past organizational success, the greater the occurrence of automatic SID.

Again, direct empirical evidence for this claim is scant. However, accounts in the business press and conceptual discussions of managerial perceptions are strongly suggestive of this relationship. For example, a manager for Schlumberger Oil describes the problems his firm faced in overcoming the complacency that accompanies success; "The most difficult situation is one in which the previous success is so complete that the world is viewed through glasses polished in a previous incarnation" (Business Week, 1981, 61). One consequence of the strong polishing is a tendency for decision makers to interpret issues using past templates--a process that can be done on automatic. Similarly, Starbuck and Milliken (1988) note that "success gives individual people and organizations the confidence to build on their experience by creating buffers, which insulate them from environmental variations and programs, which automate and standardize their responses to environmental events" (p. 49). In a study of forest products firms' managers' interpretations of environmental changes, Fiol (1989) found that managers from successful firms were particularly distinctive in their use of old framings for understanding new issues. Prahalad and Bettis (1986) also discuss the reinforcing effects that organizational success has on decision makers' views of the world. Thus, there is some evidence to suggest that automatic SID ought to be more pervasive in organizations with successful track records. A summary of the conditions that put decision makers into an automatic mode of SID are summarized in Figure 1.

[Insert Figure 1 about here]

### **Implications of Automatic SID**

While psychologists have discovered that automatic and active (or what they call controlled) modes of processing can operate simultaneously (Bargh, 1982), reliance on one mode or another has important behavioral consequences. We conduct the discussion of consequences in terms of their implications for behaviors that are incorporated in, and follow from, SID.

During automatic SID, decision makers produce interpretations of issues with limited intention and attentional input, and hence, with greater efficiency and speed. Thus, one direct implication of reliance on automatic SID is the production of diagnoses of strategic issues more quickly than if an active SID mode is used.

In addition, decision makers' reliance on well-learned issue interpretations engages issue responses more quickly. Familiar issue interpretations have associated with them a set of action generators (Starbuck, 1983) "that kick into gear" routinized issue responses. Pondy and Huff (1985) draw a similar conclusion based on a study of three school districts' responses to strategic issues. They found that decision makers were striking in their "heavy reliance on the use of existing and familiar administrative mechanisms activated in familiar ways" (p. 110). They argue that their study provides compelling support for March's (1980) claim that strategic change has a largely routinized component. Here we argue that routinization begins at early stages of the decision making process, when issues are interpreted in a more automatic than active mode.

In an automatic SID mode, the interpretation of an issue that unconsciously forms when an issue is first recognized, is more resistant to change than an interpretation formed in an active mode (Fazio, Sanbonmatsu, Powell and Kardes, 1986). Its lack of resiliency derives from several sources: 1) the reduced level of new information that is integrated into the diagnosis that could possibly modify the initial interpretation; 2) the deeper "grooving" of the associations accessed in memory; and 3) the social reinforcing of issue-response consistency.

The first two forces that account for interpretation stability in automatic SID are psychological, and tied to the mechanics of serial search processes and memory access. The third force, in contrast, is a social in nature. Research suggests that individuals value consistency in decision makers' behavior (Staw and Ross, 1980). In the context of SID, consistency is evident when individuals elicit a habituated response to a particular class

or type of strategic issues. Thus, if upon recognition of strategic human resource issues, firm decision makers usually assign a task force to deal with it, organizational members will learn to expect and value this issue response. Over time, the provision of rewards for issue-response consistency makes it difficult for decision makers to modify their initial diagnosis of an issue. An issue initially defined as a threat through automatic SID is likely to stay classified as a threat unless something extraordinary intervenes (e.g., in terms of information or action).

### **DISCUSSION AND IMPLICATIONS**

The essence of the argument set forth in this paper is that organizational conditions (i.e., where issues management is specialized and routinized, norms for consistency are strong, and past performance success), decision makers' connections to a strategic issue (i.e., familiarity, self-relevance and evaluation strength), and characteristics of the issue context (i.e., time pressure and information load) put decision makers "on automatic" in their interpretation of strategic issues.

If these propositions hold up under empirical scrutiny, they suggest that automatic SID will occur frequently in strategic contexts. Where issues are interpreted in this more automatic mode, new issues will be seen like old issues, activating issue responses that have been used in the past. One implication of this finding is that organizations will exhibit long periods of strategic stability, reproducing behaviors and actions that are historically consistent. In fact, empirical and conceptual studies of strategic change in organizations do document long periods of stability and equilibrium, punctuated by periods of reorientation (Miller, 1982; Tushman and Romanelli, 1985). This paper suggests the social and psychological processes at work when issues are first interpreted contribute causally to these periods of strategic stability.

If decision makers are primarily "on automatic" in their diagnosis of issues, then the schema that individuals have in memory, and the issue categories embedded in organizational routines and procedures serve as important predictors of how decision

makers will interpret and respond to newly detected strategic issues. An important research agenda for the future is to study the content and structure of issue schemas. While studies exist of strategic decision makers' schema for organizational success (Walsh, 1988) and schema for competitors (Porac and Thomas, 1987; Reger, 1987), studies of issue schema have been limited to a narrow range of issue categories (i.e., threats vs. opportunities (Jackson and Dutton, 1988) and technical vs. personnel or strategic vs. operating (Cowan, 1989)). At a very basic level, we know little about how decision makers organize issue knowledge in memory. Yet it is just this type of knowledge that would help us understand the outcomes of automatic SID.

The existence of "interpretations on automatic" puts managers in a bit of a bind. In organizations where experts or specialists are rewarded, this bind could be potentially hazardous. To the extent that managers are promoted who have well developed knowledge structures, the issue interpretations that are part of these knowledge structures or schema will be activated automatically (Nisbett and Ross, 1980), without decision makers' awareness. Without any form of awareness of the potentially biasing effects of these old, but well-grooved interpretations, it is difficult to see how new diagnoses would be encouraged or enabled to form. However, recent work of psychologists suggests that active processes can override automatic ones (provided there's enough time and capacity), affecting how a decision maker interprets and behaves towards an issue (Devine, 1989).

Very practical implications can be derived from this perspective on diagnosis processes, by recognizing the conditions that engage one type of process more than another. In particular, it suggests that managers can influence the way that issues are interpreted or framed by affecting the conditions (e.g., which decision makers and what context) in which SID takes place. For example, the research suggests that managers who have less of a stake in an issue (the issue is less self-relevant and/or the decision maker has a weaker issue evaluation) may engage in more active and effortful

interpretations of an issue. As outlined in the paper, this mode of diagnosis may be more desirable in certain cases. Thus, issue interpretations can be directly affected by who is chosen to make them, and the sort of connections that they have with the strategic issue. Thus, each of the conditions that has been identified as conducive to automatic SID can be used as a leverage point for influencing the process and outcomes of this important decision making activity.

This paper skimmed the surface of consideration of whether or not automatic or active SID is more effective. Global prescriptions are not warranted, as the evaluation of whether one process is preferred over another, is highly dependent on the situation. As Louis and Sutton suggest:

The problem is not that organizational members need to function at a conscious level all or even most of the time. Rather they need to be adept, first, at sensing when reliance on habits of mind or automatic processing is inappropriate, second at switching from automatic to conscious cognitive processing, and third, at functioning in a conscious mode" (1988, 1).

Where strategic issues represent events, developments or trends that are not novel, where pressures to act are strong, or where resources are severely constrained, automatic SID may be more effective than a more active mode--for the resources it preserves and the speed of response elicited. Another important question for future research is the specification of conditions for which one mode of issue diagnosis is more effective than another. To answer this question, however, researchers must also address the important question of what makes a mode of SID effective or ineffective.

## REFERENCES

Abelson, R. P. and A. Levi. "Decision making and decision theory," in G. Lindzey and E. Aronson *Handbook of Social Psychology: Theory and Method*, Random House, New York, 1985, pp. 231-309.

Anderson, C. R. and F. T. Paine. "Managerial perceptions and strategic behavior," *Academy of Management Journal*, 4, 1975, pp. 811-823.

Ansoff, I. "Strategic issue management," *Strategic Management Journal*, 1, 1980, pp. 131-148.

Bargh, J. A. "Attention and automaticity in processing of self-relevant information," *Journal of Personality and Social Psychology*, 43, 3, 1982, 425-436.

Barnes, J. H. "Cognitive biases and their impact on strategic planning," *Strategic Management Journal*, 5, 1984, pp. 129-137.

Bateman, T. and C. Zeithaml. "The psychological context of strategic decisions: A model and convergent experimental findings," *Strategic Management Journal*, 10, 1989, pp. 59-74.

Ben Zur, H. and S. J. Breznitz. "The effects of time pressure on risky choice behavior," *Acta Psychologica*, 47, 1981, pp. 89-104.

*Business Week*, Schlumberger: The star of the oil fields tackles semiconductors. February 16, 1981, pp. 60-70.

Calder, B. J. and P. H. Schurr. "Attitudinal processes in organizations," in L. L. Cummings and B. M. Staw (Eds.), *Research in Organizational Behavior*, JAI Press: Greenwich, Conn., 3, 1981, pp. 283-302.

Cobb, A. T. "Political diagnosis: Applications on organizational development," *Academy of Management Journal*, 11, 1986, 482-496.

Cowan, D. "Developing a process model of problem recognition," *Academy of Management Review*, 11, 1986, pp. 763-776.

Cowan, David A. "Executive's knowledge of organizational problem types," *Journal of Management*, 1989, forthcoming.

Daft, Richard L. and K. Weick. "Toward a model of organizations as interpretation systems," *Academy of Management Review*, 9, 1984, pp. 284-296.

Devine, Patricia G. "Stereotypes and prejudice: Their automatic and controlled components," *Journal of Personality and Social Psychology*, 56, 1, 1989, pp. 5-18.

Dearborn, D. and H. Simm. "Selective perception: A note on the departmental identification," *Sociometry*, 35, 1958, pp. 38-48.

Dukerich, J. and F. Milliken. "Noticing and interpreting complex changes: An information processing approach," working paper, New York University, 1988.

Dutton, J. E. and R. B. Duncan. "The creation of momentum for change through the process of strategic diagnosis," *Strategic Management Journal*, 8, 1987, pp. 279-295.

Dutton, J. E., L. Fahey and V. K. Narayanan. "Toward understanding strategic issue diagnosis," *Strategic Management Journal*, 4, 1983, pp. 307-323.

Dutton, J. E. and S. E. Jackson. "Categorizing strategic issues: Links to organizational action," *Academy of Management Review*, 12, 1, 1987, pp. 76-90.

Dutton, J. E. and E. Ottensmeyer. "Strategic issue management systems: Forms, functions and contexts," *Academy of Management Review*, 12, 2, 1987, pp. 355-365.

Dutton, J. E., S. Stumpt and D. Wagner. "Diagnosing strategic issues and managerial investment of resources," in R. Lamb and P. Shrivasteria *Advances in Strategic Management*, JAI Press, forthcoming, 1989.

Fazio, R. H., D. M. Sanbonmatus, M. C. Powell and F. R. Kardes. "On the automatic activation of attitudes," *Journal of Personality and Social Psychology*, 50, 2, 1986, pp. 229-238.

Fiol, C. M. "Strategic behaviors: The interactions of economic market forces and individual interpretations," working paper, New York University, 1989.

Friedman, D. E. *Family-supportive policies: The corporate decision-making process*, The Conference Board, New York, 1984.

Hasher, L. and R. T. Zacks. "Automatic and effortful processes in memory," *Journal of Experimental Psychology*, 108, 3, 1979, pp. 356-388.

Hedberg, B. "How organizations learn and unlearn," in P. C. Nystrom and W. H. Starbuck (Eds.), *Handbook of Organizational Design*, Oxford University Press, London, pp. 8-27.

Heisler, W. J., W. D. Jones and P. O. Benham. *Managing Human Resources*, Jossey-Bass, San Francisco, 1988.

Jackson, S. J. and J. E. Dutton. "Discerning threats and opportunities," *Administrative Science Quarterly*, 33, 1988, pp. 370-387.

Kahneman, D. *Attention and Effort*, Prentice Hall, Englewood Cliffs, NJ, 1973.

Kiesler, S. and L. Sproull. "Managerial responses to changing environments: Perspectives on problem sensing from social cognition," *Administrative Science Quarterly*, 27, 1982, pp. 548-570.

King, W. R. "Using strategic issue analysis," *Long Range Planning*, 15, 4, 1982, pp. 45-49.

Lyles, M. and I. Mitroff. "Organizational problem formulation: An empirical study," *Administrative Science Quarterly*, 25, 1980, pp. 102-119.

Louis, Meryl and R. Sutton. "Switching cognitive gears: From habits of mind to active thinking," working paper, Boston University, 1988.



- March, J. "Footnotes to organizational change," *Administrative Science Quarterly*, 26, 4, 1981.
- Markus, H. "Self-schemata and processing information about the self," *Journal of Personality and Social Psychology*, 35, 1977, pp. 63-78.
- Meyer, A. "Adapting to environmental jolts," *Administrative Science Quarterly*, 27, 1982, pp. 515-538.
- Miller, D. "Evolution and revolution: A quantum view of structural change in organizations," *Journal of Management Studies*, 19, 12, 1982, pp. 131-151.
- Miller, G. A. "The magical number seven, plus or minus two. Some limits on our capacity for processing information," *Psychological Review*, 63, 1956, pp. 81-97.
- Milliken, Frances. "Three types of perceived uncertainty about the environment: State, effect and response uncertainty," *Academy of Management Review*, 12, 1987, pp. 133-143.
- Milliken, Frances. "Perceiving and interpreting environmental change: An examination of college administrators interpretation of changing demographics," *Academy of Management Journal*, forthcoming, 1990.
- Mintzberg, H., D. Raisinghini, and A. Theoret. "The structure of unstructured decision processes," *Administrative Science Quarterly*, 21, 1976, pp. 246-275.
- Molitor, G. T. "Getting out in front of impending issues," in F. Feather (Ed.), *Through the eighties: Thinking globally*, World Future Society, Washington, D. C., 1980.
- Narayanan, V. K. and L. Fahey. "The micro-politics of strategy formulation," *Academy of Management Review*, 7, 1982, pp. 25-34.
- Nelson, R. R. and S. G. Winter. *An Evolutionary Theory of Economic Change*, Belknap Press, Cambridge, MA, 1982.
- Nielsen, S. L. and I. G. Saranson. "Emotion, personality and selective attention," *Journal of Personality and Social Psychology*, 41, 1981, pp. 945-960.
- Nisbett, R. E. and M. Ross. *Human Inference: Strategies and Shortcomings of Social Judgment*, Prentice Hall, Englewood Cliffs, NJ, 1980.
- Payne, J. W., J. R. Bettman and E. J. Johnson. "Adaptive strategy selection in decision making," working paper, Fuqua School of Business, Duke University, 1987.
- Peters, T. J. and R. H. Waterman. *In Search of Excellence*, Harper & Row Publishers, New York, 1982.
- Pfeffer, J. "Management as symbolic action: The creation and maintenance of organizational paradigms," in L. L. Cummings and B. M. Staw (Eds.) *Research in organizational behavior*, 3, JAI press, Greenwich, CN, 1980.
- Porac, J. and H. Thomas. "Taxonomic structures in managerial cognition: Evidence from retailing," paper presented at the Workshop on Managerial Thinking in Business Environments, Boston, October, 1987.

Pondy, L. and A. Huff. "Achieving routine in organizational change, *Journal of Management*, 11, 2, 1985, pp. 103-116.

Posner, M. I. and C. R. Snyder. "Attention and cognitive control," in R. L. Solso (Ed.) *Information Processing and Cognition: The Loyola Symposium*, 1975.

Pounds, W. F. "The process of problem finding," *Industrial Management Review*, 11, 1969, pp. 1-19.

Prahalad, C. K. and R. A. Bettis. "The dominant logic: A new linkage between diversity and performance," *Strategic Management Journal*, 7, 1986, pp. 485-501.

Reger, R. "Competitive position in the Chicago banking market: Mapping the mind of the strategist," unpublished Ph.D. Dissertation, University of Illinois, 1987.

Schneider, S. "Information overload: Causes and consequences," *Human Systems Management*, 1988.

Shiffrin, R. M. and W. Schneider W. "Controlled and automatic human information processing: II. Perceptual learning, automatic attending, and a general theory," *Psychological Review*, 84, 1977, pp. 127-190.

Starbuck, W. H. "Organizations as action generators," *American Sociological Review*, 48, 1983, pp. 91-102.

Starbuck, W. H., A. Greve and B. Hedberg. "Responding to crises," *Journal of Business Administration*, 9, 2, 1978, pp. 111-137.

Starbuck, W. H. and F. J. Milliken. "Executives' perceptual filters: What they notice and how they make sense," in D. Hambrick (Ed.) *The Executive Effect: Concepts and Methods of Studying Top Managers*, JAI Press, Greenwich, 1988, pp. 35-66.

Staw, B. M., L. Sandelands and J. Dutton. "Threat-rigidity effects in organizational behavior: A multilevel analysis," *Administrative Science Quarterly*, 26, 1981, pp. 501-524.

Staw, B. M. and J. Ross. "Behavior in escalation situations: Antecedents, prototypes and solutions," in L. L. Cummings and B. M. Staw (Eds.) *Research in Organizational Behavior*, JAI Press, Greenwich, CN, 9, 1987, pp. 39-78.

Staw, B. M. and J. Ross. "Commitment in an experimenting society: An experiment on the attribution of leadership from administrative scenarios," *Journal of Applied Psychology*, 56, 1980, pp. 249-260.

Stubbart, C. "Cognitive science: A missing link in strategic management," *Journal of Management Studies*, in press, 1988.

Svenson, O. "Process descriptions of decision making," *Organization Behavior and Human Performance*, 23, 1979, pp. 86-112.

Tushman, M. and E. Romanelli. "Organizational evolution: Interactions between external and emergent processes and strategic choice," in B. Staw and L. L. Cummings (Eds.) *Research in Organizational Behavior*, JAI Press, Greenwich, CN, 8, 1985.

Tversky, A. and D. Kahneman. "Judgments under uncertainty: Heuristics and biases," *Science*, 185, 1974, pp. 1124-1131.

Volkema, Roger J. "Problem formulation as a purposive activity," *Strategic Management Journal*, 7, 1983, 267-279.

Walsh, J. P. "Approaches to the study of cognition in organizations," working paper, Dartmouth College, 1989.

Walsh, J. P. "Selectivity and selective perception: An investigation of managers' belief structures and information processing," *Academy of Management Journal*, 1988.

Weick, Kark E. *The Social Psychology of Organizing*, Addison-Wisley Publishing Company, Reading MA, 1979.

Wright, P. "The harrassed decision maker: Time pressures, distractions and the use of evidence," *Journal of Applied Psychology*, 59, 1974, pp. 555-561.

Figure 1

Conditions Conducive to Automatic Strategic Issue Diagnosis

