

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

JANE E. DUTTON

School of Business Administration, University of Michigan

ABSTRACT

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 article 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.

INTRODUCTION

Strategic issue diagnosis describes the individual-level, cognitive process through which decision-makers form interpretations about organizational events, developments and trends. Individuals' diagnoses of strategic issues are one component in the general process of issue interpretation, where individuals collectively imbue an issue with meaning (Daft and Weick, 1984; Feldman, 1989). For this article, we are concerned with diagnoses of *strategic* issues. Strategic issues describe emerging developments, trends or events that have the potential to affect organizational performance (Ansoff, 1980; King, 1982). By focusing on the diagnosis of strategic issues by individuals, the article addresses individual-level processes that occur during the early routines of strategic decision-making, when issues are first perceived (Mintzberg *et al.*, 1976). Because of its connection to the processes and outcomes of decision-making, the diagnosis of strategic issues by individuals is assumed to have consequences for organizational action and performance (Anderson and Paine, 1975; Daft and Weick, 1984; Dutton and Duncan, 1987; Milliken, 1990; Thomas and McDaniel, 1990).

The diagnosis of strategic issues is consequential both for decision-makers who do it and for the organizations that employ them. For decision-makers, the diagnosis of issues may identify 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 *et al.*, 1990; Lyles and Mitroff, 1980). For example, if a technological development is interpreted as a threat, fewer individuals may

Address for reprints: Jane E. Dutton, School of Business Administration, University of Michigan, Ann Arbor, MI 48109-1234, USA.

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 and Jackson, 1987). At the organizational level, interpretations of issues as threats may engage a less comprehensive decision process (Staw *et al.*, 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.

Researchers of strategic decision processes have typically ignored the diagnosis process for individuals (Mintzberg *et al.*, 1976). When they have considered it, they assume that these diagnostic processes involve the active, conscious and intentional efforts of decision-makers (*e.g.* Dutton and Duncan, 1987; Dutton *et al.*, 1983; Milliken, 1990; Nutt, 1979). 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 article 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 article's claims are consistent with those who advocate that theories of social and individual cognition are useful for understanding behaviour of top-level decision-makers (*e.g.* Barnes, 1984; Bateman and Zeithaml, 1989; Hambrick and Mason, 1984; Keisler and Sproull, 1982; Schwenck, 1984; Stubbart, 1989; Walsh, 1992). A focus on issue diagnosis by individuals provides insight into the process of collective strategic issue diagnosis, where the issue perceptions of different individuals collide and conflict, and where some collective issue interpretation is formed (Dutton *et al.*, 1983). The article is also consistent with those who have argued that individual and collective behaviours in organizations have a largely routinized, habitual and programmed component (*e.g.* Hedberg, 1981; Nelson and Winter, 1982; Pondy and Huff, 1985). The arguments complement the work of researchers who highlight the role of scripts in organizational behaviour (Ashforth and Fried, 1988; Gioia and Poole, 1984). However, rather than focusing on mindless activation of scripts, this article seeks to identify the mindless or automatic activation of interpretations in decision processes, which sometimes, but not always, are linked to scripted action. The value-added of the article is that it seeks to explain how these routinized or habituated behaviours can be traced to the relatively spontaneous, involuntary activation of interpretations that have been well-learned and stored in decision-makers' memories. Strategy process researchers, in particular, can benefit from understanding psychologists' studies of these information processing modes to know when decision-makers will go on automatic in their interpretation of strategic issues, and the implications for their subsequent actions.

The purpose of the article is to describe the individual, task and organiza-

tional conditions that put decision-makers in this automatic mode in their interpretations of strategic issues. By outlining how various texts relate to individual's information processing modes, the article contributes to theory and research on how the context influences individual behaviour (Bateman and Zeithaml, 1989) and how individual behaviour relates to strategic action (*e.g.* Hambrick and Mason, 1984). We outline the conditions for automatic SID in the form of testable propositions, and then extend the practical, theoretical, and research implications of this view.

Within this article SID is portrayed as primarily an individual cognitive process that is particularly important for managers in the 'upper echelons' of organizations (Hambrick and Mason, 1984). However, it is a perspective that assumes that the SID process that takes place for decision-makers is affected by the social and political context in which an individual decision-maker exists. We highlight how the context engages individual cognitive processes that underpin SID. Social and political forces in SID are treated indirectly, through their ties to specific factors in the issue and organizational contexts that engage particular processing modes, resulting in a number of important consequences.

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 US corporations as acquired immune deficiency syndrome (AIDS) becomes a growing concern (Heisler *et al.*, 1988).

The decision-maker's connection to the issue and the context in which the issue is encountered may induce an automatic diagnosis of the issue. An automatic diagnosis involves the activation of ready-made issue categories in the minds of decision-makers that have been 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 particular ramifications for the firm's strategy or performance. Classification of an issue into a ready-made cognitive category reduces the amount of thought applied to the issue and activates a set of scripted responses (Gioia and Poole, 1984). This issue interpretation is automatic (Schiffirin and Schneider, 1977), involving limited cognitive effort or expenditure of attentional and analytic resources by a decision-maker to comprehend the issue. Decision-makers who impose the cost interpretation on the AIDS issue are most likely unaware 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). In the words of Langer (1989), decision-makers are

entrapped by their cognitive categories, making them vulnerable to outdated and similarly inappropriate ways of interpreting an issue. As Langer's (1989) empirical studies show, individuals involved in a wide range of tasks approach and execute them in mindless or automatic ways. 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 US medical care makes 'rising medical costs' a frequently employed interpretation (Heisler *et al.*, 1988). When decision-makers engage the rising cost interpretation, it suspends the search for additional issue information, which serves to preserve rather than expend 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 distinction made between two different modes of attentional and search processes identified by psychologists (Bargh, 1982; Hasher and Zacks, 1979; Langer, 1978, 1989; Posner and Snyder, 1975; Shiffrin and Schneider, 1977). While psychologists have given the modes different labels (*e.g.* automatic vs. controlled processing, mindless vs. mindful behaviour), they are based on observations that individuals can switch gears between automatic and active (or *vice versa*) attention and search processes, and that engagement in one process versus another has implications for the outcomes that follow (Louis and Sutton, 1991). A view that distinguishes two modes of issue diagnosis complements theoretical claims that individuals' knowledge structures or schema create expectations that guide the selection and evaluation of information (Nisbett and Ross, 1980) and are very important for understanding individuals' behaviour in organizations (Gioia, 1986; Lord and Foti, 1986). This distinction between processing modes suggests that these expectations will be dominant when automatic processes are engaged.

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 judgemental short-cuts to form inferences (Tversky and Kahneman, 1974). In automatic processing, cues that a decision-maker may not be 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, p.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 article 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 CONDUCIVE 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 and Simon, 1958). While functional training may not create impoverished or narrow views of issues by itself (Walsh, 1988), a manager's familiarity with issues of a particular type makes more likely the engagement of a well-used issue category. Decision-makers' familiarity with a particular domain of issues engages an automatic processing of an issue, producing little conscious thought about the issue. This logic leads to our first proposition.

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

This proposition gains support from studies of automatic vs. active 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 a 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.

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, 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 SID 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. He claims that this finding 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 automatic processing of 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). Individuals may take public stands on issues that are self-relevant which also adds to its automaticity. 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 are rarely 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 associations 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 active reflection by a 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 or emotional reactions (as well as the semantic meanings and behavioural 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).

While we have depicted these conditions that connect an individual to an issue as though they were independent from one another, conceptually and empirically, they are related. In fact, one might hypothesize that these individual connections are related in a hierarchical fashion^[1] For example, individuals are unlikely to have strong issue evaluations unless the issue is self-relevant in some way. Similarly, issues are unlikely to be self-relevant unless individuals have experience with or are familiar with an issue. Thus, the conditions are particularly ripe for automatic SID when individuals have strong evaluations of an issue (as this also implies self-relevance and issue familiarity). When individual decision-makers are confronted by an issue about which they have strong opinions (*e.g.* that AIDS is an issue of human rights as opposed to a medical cost issue), their interpretation of the issue is likely to be engaged automatically, without conscious thought and without the search for additional information. In a case where an issue is closely connected to an individual through strong evaluations, self-relevance and familiarity, the probability of automatic processing is particularly high. It is in these situations that a decision-maker's SID may fall victim to 'increased inflexibility, lack of reflection, and a reduced ability to detect weak signals from the competitive environment' (Stubbart and Ramaprasad, 1990, p.261). 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 efficacy 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 issue perceptions, which construct the issue in a light that is familiar. The activation of 'old' interpretations engages old programmes for dealing with the issue. However, the reliance on automatic processes 'helps decision-makers cope with the fast-paced world in which they live' (Stubbart and Ramaprasad, 1990, p.260). 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 behaviour. 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 *et al.*, 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 probably 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 about an issue, 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 load 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 the number of attributes that have to be considered in a judgement 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, for example, one that is dominated by an automatic component.

The Organizational Context

The mode of processing in which individuals engage to make sense of the world around them is sensitive to characteristics of the organization in which this sense-making takes place (Louis and Sutton, 1991). 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 behavioural routines or programmes. 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, analysing 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, individuals typically follow formal procedures and plans that specify where to look for issues (*e.g.* in the political, social, economic realms), what dimensions certify an issue’s priority (*e.g.* some weighting of immediacy and scope of impact), and sets of possible issue 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 prominence in use of threat and opportunity categories for classifying strategic issues is encouraged by the crystallization of these issue types in formal strategic planning (Steiner, 1979) or issue management systems (Ansoff, 1980). 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 individual 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 (1988) have made compelling arguments that programmes 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, p.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 informal 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 types of setting, there are pressures to behave in ways that are consistent with past behaviour. 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 behaviour (see Staw and Ross, 1987, for a review). For example, one experimental study of individuals' judgements 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, p.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 behaviour 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 *et al.* (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 rehearsed 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, p.61). One consequence of the strong polishing is a tendency for decision-makers to interpret issues using past templates – a tendency that is captured by automatic SID. 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 managers' interpretations of environmental changes in a forest products firm, 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.

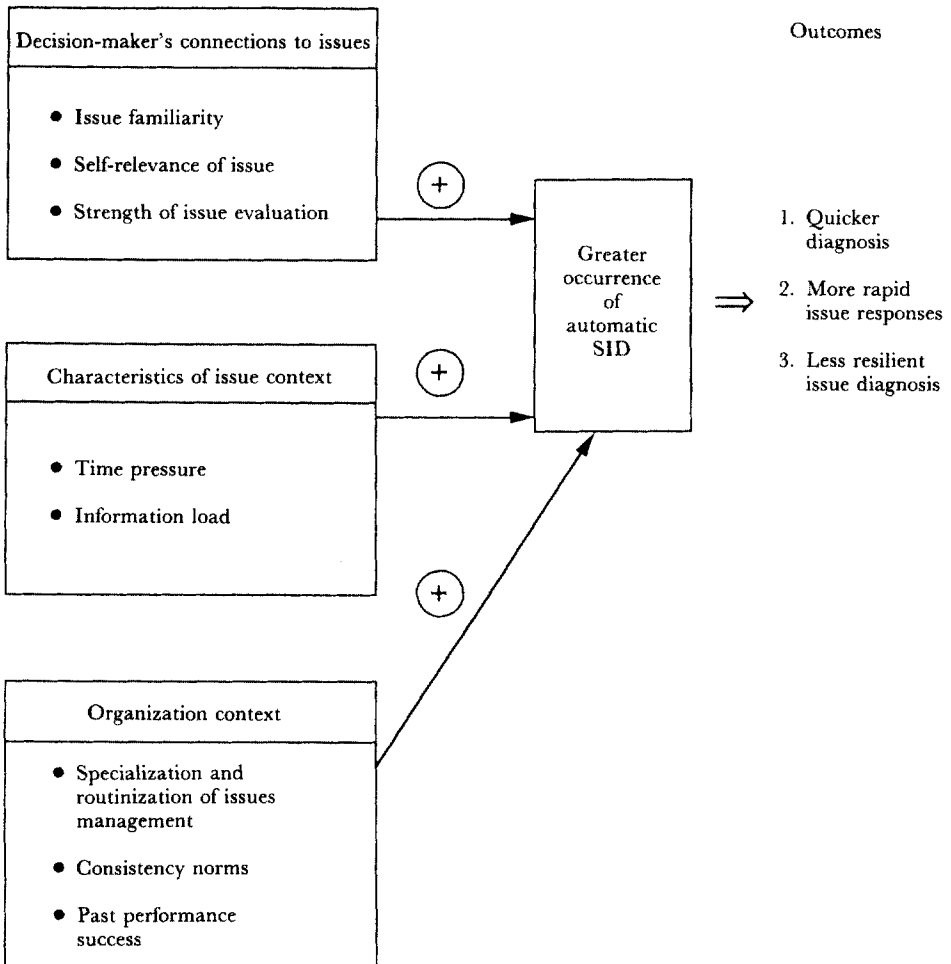


Figure 1. Conditions conducive to automatic strategic issues diagnosis

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 behavioural consequences. We conduct the discussion of consequences in terms of their implications for behaviours 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 engage

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 (1981) 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 *et al.*, 1986). Its lack of resilience 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 social in nature. Research suggests that individuals value consistency in decision-makers' behaviour (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 article 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 decision-makers are particularly likely to engage in automatic SID 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. This tendency will be most pronounced for decision-makers in firms that have existed in more stable environments and in firms that have not experienced many changes in their culture, structure or strategies. One

implication of this finding is that organizations are likely to exhibit long periods of strategic stability, reproducing behaviours 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 article 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 *et al.*, 1989; 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), technical vs. personnel, strategic vs. operating (Cowan, 1989), or internal vs. external issues (Milliken and Dukerich, 1990). 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 automatic issue interpretations may put managers at risk. On the one hand, automatic SID represents an efficient way for decision-makers to deal with the broad and valued set of ambiguous strategic issues that are inevitably encountered on their jobs. On the other hand, the existence of automatic SID may make decision-makers impervious to key informational signals that are critical to interpreting the significance of an issue for the organizations. Further, this problem maybe exacerbated by having experienced managers accountable for SID. 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, new diagnoses will be based on old experiences with past issues, leading potentially to inaccurate or inappropriate issue interpretations and issue responses.

Recent work on the diversity of top management teams (TMTs) and strategic change sheds some light on this assertion. In a study which tested the effects of TMT diversity on the levels of change in corporate diversification strategies, firms that engaged in more strategic change had teams characterized by 'younger age, relatively short organizational tenure, high educational level, academic training in the sciences and educational curriculum heterogeneity' (Wiersema and Bantel, 1992). This study, and the stream of conceptual work on the importance of TMT diversity (Ginsberg, 1990; Hambrick and Mason, 1984) and its link to strategy are suggestive. It is work that suggests that having individuals with less organizational experience, but representing a variety of perspectives translates into a greater degree of

strategic change. Perhaps one reason for this empirical result is that a TMT with this type of demography engages in more active SID. The presence of individuals on a TMT who have diverse knowledge structures and different experiences provides a seed bed for new and different categories for understanding and interpreting strategic issues, allowing for the generation of new strategic actions.

Very practical implications can be derived from this perspective on issue 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 interpretations of an issue. As outlined in the article, 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 article has not yet addressed whether or not automatic or active SID is more effective. Global prescriptions are not warranted, as the evaluation of whether one process is effective or not, is situation-dependent. 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 (1991, p.55).

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 likely and effective than a more active mode – for the resources it preserves and the speed of response elicited. However, when decision-makers confront an issue that is novel in content, about which persons have strong evaluations, where time pressure and information load are intense, or decision-makers exist in an organization that has routinized means for dealing with issues, norms for consistency are prevalent, or the organization has been successful, then design and process interventions may be necessary to engage active SID. These design and process interventions work by putting the right individuals in the right contexts where active as opposed to automatic SID is encouraged. However, the design and execution of these prescriptive steps depend on an awareness of the conditions that foster automatic SID. We hope that this article moves us closer to these design prescriptions by helping researchers and practitioners to appreciate the conditions conducive to automatic SID.

NOTES

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

[1] We thank an anonymous reviewer for this suggestion.

REFERENCES

- ABELSON, R. P. and LEVI, A., (1985). 'Decision making and decision theory'. In Lindsey, G. and Aronson, E. (Eds.) *Handbook of Social Psychology: Theory and Method*. New York: Random House, 231–309.
- ANDERSON, C. R. and PAINE, F. T. (1975). 'Managerial perceptions and strategic behavior'. *Academy of Management Journal*, **4**, 811–23.
- ANSOFF, I. (1980). 'Strategic issue management'. *Strategic Management Journal*, **1**, 131–48.
- ASHFORTH, B. and FRIED, Y. (1988). 'The mindlessness of organizational behaviors'. *Human Relations*, **41**, 4, 305–29.
- BARGH, J. A. (1982). 'Attention and automaticity in processing of self-relevant information'. *Journal of Personality and Social Psychology*, **43**, 3, 425–6.
- BARNES, J. H. (1984). 'Cognitive biases and their impact on strategic planning'. *Strategic Management Journal*, **5**, 129–37.
- BATEMAN, T. and ZEITHAML, C. (1989). 'The psychological context of strategic decisions: A model and convergent experimental findings'. *Strategic Management Journal*, **10**, 59–74.
- BEN ZUR, H. and BREZNITZ, S. J. (1981). 'The effects of time pressure on risky choice behavior'. *Acta Psychologica*, **47**, 89–104.
- Business Week* (1981). 'Schlumberger: The star of the oil fields tackles semiconductors'. 6 February, 60–70.
- CALDER, B. J. and SCHURR, P. H. (1981). 'Attitudinal processes in organizations'. In Cummings, L. L. and Staw, B. M. (Eds.), *Research in Organizational Behavior*. Greenwich, Conn.: JAI Press, 283–302.
- COBB, A. T. (1986). 'Political diagnosis: applications on organizational development'. *Academy of Management Journal*, **11**, 482–96.
- COWAN, D. (1986). 'Developing a process model of problem recognition'. *Academy of Management Review*, **11**, 763–76.
- COWAN, D. A. (1989). 'Executive's knowledge of organizational problem types: applying a contingency perspective'. *Journal of Management*, pp. 763–76.
- DAFT, L. and WEICK, K. (1984). 'Toward a model of organizations as interpretation systems'. *Academy of Management Review*, **9**, 284–96.
- DEVINE, P. G. (1989). 'Stereotypes and prejudice: their automatic and controlled components'. *Journal of Personality and Social Psychology*, **56**, 5–18.
- DEARBORN, D. and SIMON, H. (1958). 'Selective perception: a rate on the departmental identification'. *Sociometry*, **35**, 38–48.
- DUTTON, J. E. and DUNCAN, R. B. (1987). 'The creation of momentum for change through the process of strategic issue diagnosis'. *Strategic Management Journal*, **8**, 279–95.
- DUTTON, J. E. and JACKSON, S. E. (1987). 'Categorizing strategic issues: links to organizational action'. *Academy of Management Review*, **12**, 1, 76–90.
- DUTTON, J. E. and OTTENSMEYER, E. (1987). 'Strategic issue management systems: forms, functions and contexts'. *Academy of Management Review*, **12**, 2, 355–65.

- DUTTON, J. E. FAHEY, L., and NARAYAN, V. K. (1983) 'Toward understanding strategic issue diagnosis'. *Strategic Management Journal*, **4**, 307-23.
- DUTTON, J. E., STUMPF, S. and WAGNER, D. (1990). 'Diagnosing strategic issues and managerial investment of resources'. In Shrivastava, P. and Lamb, R. *Advances in Strategic Management*. Greenwich, Conn: JAI Press, 143-67.
- FAZIO, R. H., SANBONMATUS, D. M., POWELL, M. C. and KARDES, F. R. (1986). 'On the automatic activation of attitudes'. *Journal of Personality and Social Psychology*, **50**, 2, 229-38.
- FELDMAN, M. (1989), *Order without Design*. Stanford, Cal.: Stanford University Press.
- FIOL, C. M. (1989). 'Strategic behaviors: the interactions of economic market forces and individual interpretations'. Working paper, New York University.
- FRIEDMAN, D. E. (1984). *Family-supportive Policies: The Corporate Decision-making Process*. The Conference Board, New York.
- GIOIA, D. A. (1986). 'Symbols, scripts and sensemaking: creating meaning in the organizational experience'. In Sims H. and Gioia D. (Eds.), *The Thinking Organization*. San Francisco: Jossey-Bass, 49-74.
- GIOIA, D. A. and POOLE, P. P. (1984). 'Scripts in organizational behavior'. *Academy of Management Review*, **9**, 449-59.
- GINSBERG, A. (1990). 'Connecting diversification to performance: a socioeconomic approach'. *Academy of Management Review*, **15**, 514-35.
- HAMBRICK, D. and MASON, P. (1984). 'Upper echelons: the organization as a reflection of its top managers.' *Academy of Management Review*, **26**, 93-206.
- HASHER, L. and ZACKS, R. T. (1979). 'Automatic and effortful processes in memory'. *Journal of Experimental Psychology*, **108**, 3, 356-88.
- HEDBERG, B. (1981). 'How organizations learn and unlearn'. In Nystrom, P. C. and Starbuck, W. H. (Eds.), *Handbook of Organizational Design*. Oxford: Oxford University Press, 8-27.
- HEISLER, W. J., JONES, W. D. and BENHAM, P. O. (1988). *Managing Human Resources*. San Francisco: Jossey-Bass.
- JACKSON, S. J. and DUTTON, J. E. (1988). 'Discerning threats and opportunities'. *Administrative Science Quarterly*, **33**, 370-87.
- KAHNEMAN, D. (1973). *Attention and Effort*. Englewood Cliffs, N. J.: Prentice-Hall.
- KIESLER, S. and SPROULL, L. (1982). 'Managerial responses to changing environments: perspectives on problem sensing from social cognition'. *Administrative Science Quarterly*, **27**, 548-70.
- KING, W. R. (1982). 'Using strategic issue analysis in long range planning'. *Long Range Planning*, **15**, 4, 45-9.
- LANGER, E. J. (1978). 'Rethinking the role of thought in social interaction'. In Harvey, J. Ickes M. J. and Kidd, R. F. (Eds.), *New Directions in Attribution on Research*, 2. Hillsdale, N. J.: Erlbaum.
- LANGER, E. J. (1989). *Mindfulness*. Reading, Mass.: Addison Wesley.
- LORD, R. G. and FOTI, R. J. (1986). 'Schema theories, information processing and organization behavior.' In Sims, H. and Gioia, D. (Eds.), *The Thinking Organization*. San Francisco: Jossey-Bass, 20-48.
- LOUIS, M. and SUTTON, R. (1991). 'Switching cognitive gears: from habits of mind to active thinking'. *Human Relations*, **44**, 55-76.
- LYLES, M. and MITROFF, I. (1980). 'Organizational problem formulation: an empirical study'. *Administrative Science Quarterly*, **25**, 102-19.
- MARCH, J. (1981). 'Footnotes to organizational change'. *Administrative Science Quarterly*, **26**, 4, 563-77.
- MARKUS, H. (1977). 'Self-schemata and processing information about the self'. *Journal of Personality and Social Psychology*, **35**, 63-78.

- MEYER, A. (1982). 'Adapting to environmental jolts'. *Administrative Science Quarterly*, **27**, 515–38.
- MILLER, D. (1982). 'Evolution and revolution: a quantum view of structural change in organizations'. *Journal of Management Studies*, **19**, 12, 131–51.
- MILLER, G. A. (1956). 'The magical number seven, plus or minus two. Some limits on our capacity for processing information'. *Psychological Review*, **63**, 81–97.
- MILLIKEN, F. (1987). 'Three types of perceived uncertainty about the environment: state, effect and response uncertainty'. *Academy of Management Review*, **12**, 133–43.
- MILLIKEN, F. (1990). 'Perceiving and interpreting environmental change: an examination of college administrators' interpretation of changing demographics'. *Academy of Management Journal*, **33**, 42–63.
- MILLIKEN, F. and DUKERICH, J. (1990). 'Insights into issue interpretation: the effect of issue characteristics on attention, interpretation, and information search'. Working paper, New York University.
- MINTZBERG, H., RAISINGHINI, D. and THEORET, A. (1976). 'The structure of unstructured decision processes'. *Administrative Science Quarterly*, **21**, 246–75.
- MOLITOR, G. T. (1980). 'Getting out in front of impending issues'. In Feather, F. (Ed.), *Through the Eighties: Thinking Globally*. Washington, D. C.: World Future Society.
- NARAYANAN, V. K. and FAHEY, L. (1982). 'The micro-politics of strategy formulation'. *Academy of Management Review*, **7**, 25–34.
- NELSON, R. R. and WINTER, S. G. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, Mass.: Belknap Press.
- NIELSEN, S. L. and SARANSON, I. G. (1981). 'Emotion, personality and selective attention'. *Journal of Personality and Social Psychology*, **41**, 945–60.
- NISBETT, R. E. and ROSS, M. (1980). *Human Inference: Strategies and Shortcomings of Social Judgment*. Englewood Cliffs, N. J.: Prentice-Hall.
- NUTT, P. E. (1979). 'Calling out and calling off the dogs: managerial diagnosis in public service organizations'. *Academy of Management Review*, **4**, 203–14.
- PAYNE, J. W., BETTMAN, J. R. and JOHNSON, E. J. (1987). 'Adaptive strategy selection in decision making'. Working paper, Fuqua School of Business, Duke University.
- PETERS, T. J. and WATERMAN, R. H. (1982). *In Search of Excellence*. New York: Harper & Row.
- PFEFFER, J. (1980). 'Management as symbolic action: the creation and maintenance of organizational paradigms'. In Cummings, L. L. and Staw, B. M. (Eds.), *Research in Organizational Behavior*, 3. Greenwich, Conn.: JAI Press.
- PONDY, L. and HUFF, A. (1985). 'Achieving routine in organizational change'. *Journal of Management*, **11**, 2, 103–16.
- PORAC, J., THOMAS, H. and BADEN-FULLER, C. (1989). 'Competitive groups in cognitive communities: the case of Scottish knitwear manufacturers'. *Journal of Management Studies*, **26**, 4, 397–416.
- POSNER, M. I. and SNYDER, C. R. (1975). 'Attention and cognitive control'. In Solso, R. L. (Ed.), *Information Processing and Cognition: The Loyola Symposium*. Hillsdale, NJ.: Erlbaum.
- POUNDS, W. F. (1969). 'The process of problem finding'. *Industrial Management Review*, **11**, 1–19.
- PRAHALAD, C. K. and BETTIS, R. A. (1986). 'The dominant logic: a new linkage between diversity and performance'. *Strategic Management Journal*, **7**, 485–501.
- REGER, R. (1987). 'Competitive position in the Chicago banking market: mapping the mind of the strategist'. Unpublished Ph D Dissertation, University of Illinois.
- SCHNEIDER, S. (1988). 'Information overload: causes and consequences'. *Human Systems Management*, **7**, 2, 143–53.

- SCHWENK, C. R. (1984). 'Cognitive simplification processes in strategic decision-making'. *Strategic management journal*, **5**, 111–28.
- SHIFFRIN, R. M. and SCHNEIDER, W. (1977). 'Controlled and automatic human information processing: II. Perceptual learning, automatic attending, and a general theory'. *Psychological Review*, **84**, 127–90.
- STARBUCK, W. H. (1983). 'Organizations as action generators'. *American Sociological Review*, **48**, 91–102.
- STARBUCK, W. H. and MILLIKEN, F. J. (1988). 'Executives' perceptual filters: what they notice and how they make sense. In Hambrick, D. (Ed.), *The Executive Effect: Concepts and Methods of Studying Top Managers*, Greenwich, Conn.: JAI Press, 35–66.
- STARBUCK, W. H., GREVE, A. and HEDBERG, B. (1978). 'Responding to crises'. *Journal of Business Administration*, **9**, 2, 111–37.
- STAW, B. M. and ROSS, J. (1980). 'Commitment in an experimenting society: an experiment on the attribution of leadership from administrative scenarios'. *Journal of Applied Psychology*, **56**, 249–60.
- STAW, B. M. and ROSS, J. (1987). 'Behaviour in escalation situations: antecedents, prototypes and solutions'. In Cummings, L. L. and Staw, B. M. (Eds.), *Research in Organizational Behavior*: Greenwich, Conn.: JAI Press, 39–78.
- STAW, B. M., SANDELANDS, L. and DUTTON, J. (1981). 'Threat-rigidity effects in organizational behaviour: a multilevel analysis'. *Administrative Science Quarterly*, **26**, 501–24.
- STEINER, G. A. (1979). *Strategic Planning: What Every Manager Must Know*. New York: Free Press.
- STUBBART, C. (1989). 'Cognitive science: a missing link in strategic management'. *Journal of Management Studies*, **26**, 4, 225–347.
- STUBBART, C. and RAMAPRASAD, A. (1990). 'Comments on the empirical articles and recommendations for future research'. In Huff, A. (Ed.), *Mapping Strategic Thought*. Chichester: Wiley, 251–88.
- SVENSON, O. (1979). 'Process descriptions of decision making'. *Organization Behavior and Human Performance*, **23**, 86–112.
- THOMAS, J. and MCDANIEL, R. (1990). 'Interpreting strategic issues: effects of strategy and the information processing structure of top management teams'. *Academy of Management Journal*, **33**, 3, 286–306.
- TUSHMAN, M. and ROMANELLI, E. (1985). 'Organizational evolution: interactions between external and emergent processes and strategic choice'. In Staw, B. and Cummings, L. L. (Eds.), *Research in Organizational Behaviour*. Greenwich, Conn.: JAI Press.
- TVERSKY, A. and KAHNEMAN, D. (1974). 'Judgments under uncertainty: heuristics and biases'. *Science*, **185**, 1124–31.
- VOLKEMA, R. J. (1986). 'Problem formulation as a purposive activity'. *Strategic Management Journal*, **7**, 267–79.
- WALSH, J. P. (1988). 'Selectivity and selective perception: an investigation of managers' belief structures and information processing'. *Academy of Management Journal*, **31**, 873–96.
- WALSH, J. P. (1992). 'Managerial and organizational cognition: notes from a trip down memory lane'. University of Michigan.
- WEICK, K. E. (1979). *The Social Psychology of Organizing*. Reading, Mass.: Addison-Wesley.
- WIERSEMA, M. F. and BANTEL, K. A. (1992). 'Top management team demography and corporate strategic change'. *Academy of Management Journal*, **35**, 91–121.
- WRIGHT, P. (1974). 'The harassed decision maker: time pressures, distractions and the use of evidence'. *Journal of Applied Psychology*, **59**, 555–61.