

TOWARD AN INTEGRATIVE CARTOGRAPHY OF TWO STRATEGIC ISSUE DIAGNOSIS FRAMEWORKS

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There exist two prominent accounts of how managers make sense of and take action in relation to strategic issues. The threat–opportunity (TO) and feasibility–urgency (FU) approaches primarily emphasize automatic/affective and active/deliberative strategic issue diagnosis processes, respectively. Current research, however, does not effectively integrate or fully explore the relationship between these two frameworks. We employ theory-building literature to develop a framework that highlights four distinct and increasingly integrative lenses through which such an exploration can be systematically carried out. Analyzing data from how firms reacted to the economic uncertainty of early 2003, the results of our study indicate that the FU approach is a better predictor of both intentions and actual responses than the TO approach. Our results also indicate that threat is positively related to urgency and negatively related to feasibility, while opportunity is positively related to feasibility and negatively related to urgency. Further, using the expectancy–instrumentality–valence (EIV) motivational theory as a framework, we factor analyze both TO and FU items, identifying three underlying constructs of favorability, urgency, and influence (which we dub FUI). FUI has a higher predictive efficacy than the TO approach alone. We highlight implications for theory building and research in the strategic issue diagnosis literature. Copyright © 2007 John Wiley & Sons, Ltd.

INTRODUCTION

A long-term focus within the strategic issue diagnosis (SID) research stream has been on how top managers in organizations collectively interpret strategic issues and how this subsequently affects the organization's strategic policies, actions and response (e.g., Dutton, 1997; Ginsberg and Venkatraman, 1995; Thomas, Clark, and Gioia, 1993; Thomas, Gioia, and Ketchen, 1997). Scholars have examined strategic issues from a wide

range of industries and situations (e.g., Chattopadhyay, Glick, and Huber, 2001; Denison *et al.*, 1996; Gilbert, 2005, 2006; Martins and Kam-bil, 1999; Sharma, 2000). Two relatively prominent accounts of strategic issue interpretation have emerged: the threat–opportunity (TO) and feasibility–urgency (FU) frameworks (Dutton and Jackson, 1987; Dutton and Duncan, 1987a).

Dutton (1993a, 1997; 12 February 2004 e-mail response regarding the TO and FU frameworks) framed the SID literature in terms of different aspects of strategic issue diagnosis processes, one 'a categorization process (which is threat and opportunity framing) and [the other] a more effortful, evaluative process (best captured by feasibility–urgency assessments)' (Dutton, 12 February 2004 e-mail to authors). Within

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this view, the TO approach focuses more on *automatic/affective* influences, aspects of issue interpretation that are 'categorical,' 'relatively unreflective,' and that 'require relatively little effort or cognitive resources' (Dutton, 1997: 87), as well as the correlative emotional consideration of how 'hot' or 'cold' an issue might be (Dutton and Jackson, 1987: 79; Ginsberg and Venkatraman, 1995: 441). The FU approach, on the other hand, relates more to *active/deliberative* considerations wherein issue interpretation is 'intentional and conscious' and involves a 'much greater degree of information search and analysis' (Dutton, 1997: 87), thus tapping into the effortful specification of critical issue characteristics and possible alternatives (Dutton, Stumpf, and Wagner, 1990; Ginsberg and Venkatraman, 1995).

The TO framework has been more predominantly used by researchers (e.g., Thomas and McDaniel, 1990; Thomas *et al.*, 1993; Martins and Kambil, 1999; Sharma, 2000; Chattopadhyay *et al.*, 2001; Barr and Glynn, 2004; Gilbert, 2006). The FU framework research stream has been much less robust, with only one field study addressing its constructs since 1995 (Ginsberg and Venkatraman, 1995; Kuvaas, 2002).

Many important questions have been answered by research using the TO and FU approaches, but scholarly work on the TO and FU frameworks has generally occurred in isolation and with minimal cross-reference (e.g., Jackson and Dutton, 1988; Martins and Kambil, 1999; Sharma, 2000; Thomas and McDaniel, 1990). Accordingly, important theoretical and practical questions still remain unanswered regarding how these frameworks operate in tandem, thus limiting our understanding of SID in the following ways.

First, Dutton (1993a) presented a multilevel argument explicitly suggesting that automatic mental processes play a more prominent role than do active/deliberative ones in strategic issue diagnosis. Yet, although the TO approach dominates SID research, there has been no empirical test of Dutton's basic thesis, and thus we do not know if automatic processing (as captured by TO) is indeed a stronger predictor of strategic issue response than is active processing (as captured by FU). Assessing the predictive efficacy of TO in relation to FU will either confirm or begin to raise questions about the TO-dominated thrust of current SID research. For example, a stronger FU effect would suggest the

need for additional research utilizing more deliberative approaches. Either way, answering this question will help to build a stronger theoretical and empirical foundation for SID.

Second, scholars have proposed that elements of TO and FU either covary or affect each other (Dutton, 1986; Jackson and Dutton, 1988; Schneider, 1989). Yet no explicit empirical tests between constituent variables of TO and FU have ever occurred. Consequently, we do not know exactly how, or even if, TO and FU are related. Such knowledge has important implications for SID. For example, a very high correlation would suggest that FU and TO are not meaningfully separable (indeed, as presented by Ginsberg and Venkatraman, 1992) and that the two research streams essentially address the same SID process. On the other hand, uncorrelated results would confirm the current bifurcated state of TO and FU research. Alternatively, a moderately strong correlation would imply that TO and FU might have non-independent effects on response, and that both should be taken into account when researching SID-response topics. Thus, such an exploration of TO and FU will enrich our currently limited understanding of how these two strategic issue processing models interact.

Third, there exists a substantial body of scholarly work suggesting that decision makers use both automatic/affective and active/deliberative processing (Dutton, 1997; Forgas and George, 2001; Schwarz, 2000; Smircich and Stubbart, 1985; Thomas, Shankster, and Mathieu, 1994). Such logic and findings clearly beckon an alternative model that encompasses both TO and FU. Current SID research however does not fully inform us as to how such an integrated model would look. While some scholars (e.g., Chen and Miller, 1994; Dutton and Ashford, 1993; Gilbert, 2006) have suggested the potential utility of conceptualizing the SID process from a motivational perspective, such a model has not been developed. This study thus proposes the expectancy-instrumentality-valence (EIV) model of motivation (Vroom, 1964) as a useful frame to account for both the automatic/affective and active/deliberative diagnostic processes involved in SID.

Fourth, if, as suggested above, both automatic and active processes are utilized by managers undertaking decision making (e.g., Forgas and George, 2001; Schwarz, 2000), an ancillary question emerges as to whether a SID model that

integrates both TO and FU would outperform the current, dominant TO-alone approach in predicting strategic issue response. It is somewhat surprising that such a test has yet to appear in the literature. If the TO approach is primarily used by managers (as Dutton, 1993a, suggests), incorporating the FU approach may provide little additional explanatory power. On the other hand, if both approaches are used by managers in strategic issue diagnosis, then incorporating the FU approach would more comprehensively explain variance in strategic issue response.

Finally, from a more practical perspective, the increasingly competitive landscape is said to require more active and deliberative cognitive processes associated with a simultaneous learning and unlearning mindset (Bettis and Hitt, 1995; Brown and Eisenhardt, 1998; D'Aveni, 1994). Thus, prescriptions to managers based on current, possibly underspecified SID models may lack descriptive accuracy, thereby limiting their practical relevance to the extent that they do not fully take into account the deliberative processes involved in strategic issue diagnosis.

To summarize, four questions characterize important lacunae in current SID research: (1) Is TO a stronger predictor of strategic issue response than FU? We don't know. (2) Are TO and FU related? We don't know. (3) What form would an integrated model of SID take? We don't know. (4) Would an integrated model outperform the current dominant TO approach? Again, we do not know. The lack of joint inquiry in the face of such unknowns regarding SID clearly calls for theoretical and empirical remediation.

This study therefore sets out to do the following. First, we provide a review of the current TO and FU literature. Second, heeding calls to loosen the methodological 'straitjacket' associated with management research (Bettis, 1991; Ofori-Dankwa and Julian, 2001; Osigweh, 1989), we construct a framework that, by means of four distinct integrative lenses, can assist us in addressing unanswered questions associated with the TO and FU frameworks. Third, we employ relevant literature associated with each lens to generate and test hypotheses regarding interrelationships between TO, FU, and firm response to a strategic issue. We thus engage in a theoretically grounded integrative cartography that provides a systematic examination of the web of relationships

surrounding and integrating two prominent SID frameworks.

LITERATURE REVIEW

Strategic issues are 'environmental trends and possible events that may have a major and discontinuous impact on the firm' (Ansoff, 1975: 24–25). Early SID research focused on the source and nature of strategic issues, as well as the elements making up the interpretation of these developments (Ansoff, 1975, 1980). Building on this seminal work, later scholars introduced the concept of strategic issue diagnosis: the assessment and infusion with meaning of issue-related data with a view to building organizational momentum to action (Dutton and Duncan, 1987a; Dutton, Fahey, and Narayanan, 1983; Dutton and Jackson, 1987). Subsequent research suggests a sequence of four steps involved in dealing with strategic issues. Initially, given the array of strategic issues an organization is considering at any one time (Dutton and Duncan, 1987b; Dutton, 1997), there occurs effort within an organization, by an individual or group, to sell, promote, and champion a strategic issue's significance by means of different diagnoses (Ashford *et al.*, 1997; Dutton and Ashford, 1993). Second, if the selling effort is successful, the organization assigns the issue a high level of importance and priority in the strategy agenda (Dutton, 1997; Thomas *et al.*, 1997). Third, based in part on the diagnosis of the issue, the organization formulates and implements an appropriate response (Ginsberg and Venkatraman, 1995; Chattopadhyay *et al.*, 2001). Fourth, the issue response subsequently affects organizational performance, either for good or ill (Thomas *et al.*, 1993, 1997).

In 1987 two frameworks emerged—threat–opportunity (TO) and feasibility–urgency (FU) (Dutton and Jackson, 1987; Dutton and Duncan, 1987a)—that have been the primary approaches for understanding diagnosis of, and response of organizations to, strategic issues.

Threat–opportunity framework

The TO framework is based primarily on social categorization theory (Rosch, 1975). From within this perspective, Dutton and Jackson (1987:

78–79) suggested that decision makers categorize strategic issues as either threats or opportunities. TO categorizations form reference points that influence the nature and extent of the firm's response (Chattopadhyay *et al.*, 2001; Dutton and Jackson, 1987; Sharma, 2000; Thomas *et al.*, 1993). These categories are influenced by whether the issue is seen in positive or negative terms, as a potential loss or gain, and as controllable/uncontrollable (Jackson and Dutton, 1988; Thomas and McDaniel, 1990), though later research suggested that the positive/gain dimensions were not easily separable (Thomas *et al.*, 1993). Providing further conceptual development, Denison *et al.* (1996) and Gilbert (2005, 2006) demonstrated the empirical value of viewing threat and opportunity as two separate diagnosis constructs and not merely ends of a continuum.

Scholars have pointed to the primarily affective, relatively unreflective nature of such issue categorization (Dutton, 1993a, 1997; Dutton and Jackson, 1987; Gilbert, 2006; Ginsberg and Venkatraman, 1995; Maitlis and Ozcelik, 2004). TO interpretations provide a cognitive shortcut for managers, akin to the automatic process in Dutton (1993a: 341). 'Categorization accounts of issue diagnosis assume that managers spend relatively little effort or cognitive resources in understanding issues' (Dutton, 1997: 87). Such 'automatic' processing is associated with decision makers' affective or emotional reactions, such that there may be a 'direct link between issues and affect' (Dutton, 1993a: 345). Consequently, TO labels address a strategic issue's level of emotional interest, evocation and the perception of how 'hot' or 'cold' an issue is (Dutton and Jackson, 1987: 79; Ginsberg and Venkatraman, 1995: 441; Maitlis and Ozcelik, 2004: 386).

The TO model has become the dominant approach to understanding the interpretation of, and response to, strategic issues (Barr and Glynn, 2004; Denison *et al.*, 1996; Gilbert, 2005, 2006; Martins and Kambil, 1999; Sharma, 2000; Thomas and McDaniel, 1990). Prominent findings include: opportunity interpretations lead to greater product–service changes (Thomas *et al.*, 1993) and proactive strategies (Sharma, 2000); while threats lead to an increased incidence of either internal or external responses, depending on whether the threats were control-reducing or loss-threatening (Chattopadhyay *et al.*, 2001).

Feasibility–urgency framework

Basing their work on social construction theory (Berger and Luckmann, 1967; Daft and Weick, 1984; Dutton *et al.*, 1983), Dutton and Duncan (1987a) emphasized how top management teams, through more deliberative analysis and interaction, developed a relatively nuanced view of strategic issues. Managers and organizations build momentum to act based upon their perceived level of understanding and capability to respond (feasibility) and the issue's importance, time pressure, and visibility (urgency) (Dutton and Duncan, 1987a; Dutton *et al.*, 1990). These assessments lead to different levels of momentum for strategic change and organizational response patterns (Dutton *et al.*, 1990; Dutton and Webster, 1988; Ginsberg and Venkatraman, 1992, 1995).

Scholars have stressed the primarily deliberative, more mentally effortful nature of this particular issue diagnosis process (Dutton, 1997, 12 February 2004 e-mail to authors); Ginsberg and Venkatraman, 1995). Such interpretation has been characterized as data-driven, attentive, and reflective (e.g., George and Jones, 2001). Consequently, the diagnosis facets of both feasibility and urgency provide a means of intentionally and consciously assessing a comparatively extensive amount of information in a relatively complex fashion (Dutton, 1997: 87). Feasibility addresses the awareness and comprehension of causal relationships, alternatives, and the means to successfully carry out a response (Ginsberg and Venkatraman, 1995; Milliken, 1990). Likewise, urgency addresses the determination of how soon an issue response is required, depending heavily on rational consideration and executives' mental models (Camillus and Datta, 1991; Dutton, 1997).

Research on the FU framework has been less common than that on TO. Results still point, however, to its validity as a predictor of strategic issue response (Dutton and Webster, 1988; Dutton *et al.*, 1990; Ginsberg and Venkatraman, 1992). In the last empirical work to explicitly employ the complete FU framework, Ginsberg and Venkatraman (1995) found that feasibility and urgency explained both managerial commitment to respond and response target. These authors specifically concluded that future researchers should take into account the FU dimensions when modeling organizational responses to strategic issues (Ginsberg and Venkatraman (1995: 440).

A FRAMEWORK FOR INTEGRATING TO AND FU

With the partial and limited exception of Ginsberg and Venkatraman (1992, 1995) and Schneider and De Meyer (1991), researchers have not integrated TO and FU into an overall model and joint empirical testing has never occurred. As we have argued in earlier sections, empirically testing relationships associated with TO and FU, and also exploring a more comprehensive and broad-based model of SID, allows us to make important contributions to the literature. Our review above suggests that the basis in the current SID literature for a systematic examination and integration of the TO and FU frameworks is unclear. Accordingly, we seek to develop such a framework.

Frequent calls have been made for research with a wider scope (e.g., Bettis, 1991; Ofori-Dankwa and Julian, 2001; Osigweh, 1989) utilizing multiple research paradigms (Gioia and Pitre, 1990; Lee, 1991). Building on these ideas, we identify two dimensions (positivist/interpretivist; whole/parts) drawn from the theory-building literature, dimensions which also relate to research issues in SID identified above. We use these two dimensions to develop a 2×2 matrix that identifies four distinct approaches of integration. Furthermore, starting from the least integrative, we place these distinct approaches in a 'ladder of integrative intensity' (Pondy and Mitroff, 1979; Osigweh, 1989), which we deliberately ascend (Ofori-Dankwa and Julian, 2001: 415), thus enabling a more systematic exploration of relationships associated with TO and FU.

The positivist/interpretivist (key researcher assumptions) dimension

We adopt the assumptions underlying the *positivist/interpretivist* distinction (e.g., Lee, 1991; Grandori, 2001; Gioia and Pitre, 1990) as our first dimension. The positivist end of the continuum, with its 'frame of 'rival assumptions,' [involves testing] which model predicts observed behaviours better' (Grandori, 2001: 38). Positivism argues for continued use of the most logical, dominant, or relevant framework while discarding the alternative (Pfeffer, 1993). The *interpretivist* end of the continuum, however, involves a 'frame admitting a plurality of legitimate forms' (Grandori, 2001: 38) and starts from a premise of the coexistence and

compatibility of alternative frameworks (Grandori, 2001).

We choose the positivist/interpretivist dimension for three reasons. First, the positivist and interpretivist approaches represent two major research perspectives in management (Gioia and Pitre, 1990). Second, several scholars have specifically suggested utilizing these two approaches when integrating different theoretical frameworks (Lee, 1991; Grandori, 2001; Gioia and Pitre, 1990). Third, both positivist and interpretivist approaches have appeared in SID conceptualizations. One representation of TO and FU took a primarily positivist approach (Dutton, 1993a) by addressing which framework has greater practical utility for managers. Another representation took a more interpretivist approach by suggesting the interrelatedness of the TO and FU models (Schneider, 1989).

The whole/parts (conceptual levels of analysis) dimension

We adopt the *whole/parts* distinction as our second dimension (Dansereau, Aluto, and Yammarino, 1984; Dansereau, Yammarino, and Kohles, 1999; Klein, Dansereau, and Hall, 1994). The *whole* end of the continuum refers to any higher level of analysis and focuses on conceptual aggregations, such as variables or frameworks (Dansereau *et al.*, 1984). Thus, the whole end of the continuum takes current frameworks and constructs as givens. The *parts* end of the continuum, on the other hand, emphasizes the 'elements that are nested in, or members of, higher level entities' (Klein *et al.*, 1994: 198) and refers to the items that make up variables. The parts end focuses on a disaggregated view and makes possible a deconstruction and reassembling of items into new constructs.

We chose the whole/parts dimension for two reasons. First, given the ubiquitous nature of different levels of analysis in any organizational context, scholars are well served to integrate levels of analysis issues into their conceptual and empirical research designs (e.g., Rousseau, 1985; Dansereau *et al.*, 1984, 1999; Klein *et al.*, 1994). Secondly, both TO and FU have been implicitly explored at different levels of conceptual aggregation. Dutton (1993a) addressed automatic and active processing as oppositional wholes, while Jackson and Dutton (1988) and Dutton *et al.* (1990) took the frameworks at a disaggregated level by examining the

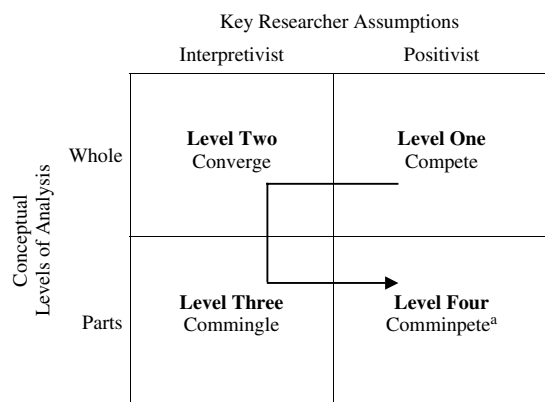


Figure 1. Ladder of integrative intensity. ^aCommingle is so named because it is a hybrid of Levels One and Three, Compete and Commingle

constituent components of the TO and FU constructs.

Four levels of integrative intensity

We juxtapose the positivist/interpretivist and whole/parts dimensions and develop a four-cell matrix representing four distinct integrative lenses. Each lens captures unique logic and represents a distinctive research paradigm with its own underlying assumptions and approach toward conceptual integration (see Figure 1). We place each integrative level in an ascending 'ladder of integrative intensity' (Ofori-Dankwa and Julian, 2001; Osigweh, 1989). *Level One*, the *Compete* quadrant, is the least integrative. Here, the research emphasis is on which framework is preferred when describing or predicting a particular phenomenon or situation. *Level Two*, the *Converge* quadrant, operates at the whole (higher level) of conceptual analysis. The research emphasis is to assess the interrelationships of the variables that make up the two frameworks. *Level Three*, the *Commingle* quadrant, identifies common underlying constructs through an assessment of the degree of interrelationship between individual items from both frameworks. *Level Four*, the *'Commingle'* quadrant, is a hybrid between levels one and three. Here the research focus is to determine whether the new reassembled model, based on the new common underlying constructs, provides a better explanation for a given phenomenon than does the current approach. As such, each level

represents basic and unique researcher assumptions. Thus, what may be conceptually or methodologically appropriate at one level may not be so at another (Dansereau *et al.*, 1999; Rousseau, 1985).

HYPOTHESES

Level one: TO and FU as competing frameworks

From one viewpoint, TO is likely to be a stronger predictor of strategic issue response than FU. Dutton (1993a) argued that the nature of SID processes in general made the occurrence of automatic, TO-kinds of processing more likely than active, FU-kinds of processing. However, we think that stronger arguments can be advanced for the greater predictive efficacy of FU.

First, strategic issues tend to be equivocal and ill formed (Dutton *et al.*, 1983) and, consequently, a more active and deliberative form of processing may be necessary to make higher-quality decisions (Dutton, 1997). Further, strategic issues have potentially contradictory implications and therefore require a more intense cognitive attentiveness to comprehend (e.g., Ansoff, 1975; Camillus and Datta, 1991). Indeed, the scanning literature suggests that environmental uncertainty is associated with greater attention, information search, and analysis (e.g., Boyd and Fulk, 1996: 14; Daft, Sormunen, and Parks, 1988).

Second, from a strategic context perspective, the increasing incidence of chaotic environmental shifts (Brown and Eisenhardt, 1998) has led to a new competitive landscape presenting novel diagnostic challenges (Bettis and Hitt, 1995; D'Aveni, 1994). Indeed, Dutton and Duncan (1987a) recognized that environments will feature greater hostility, scarcity, and change and suggested that executives, when dealing with strategic issues from these more demanding contexts, will rely on more deliberative and active considerations (e.g., Dutton, 1997). Increasing informational intensity and declining predictability require a deeper understanding of industry economics and dynamics by means of deliberative and active cognitive processes associated with simultaneous learning and unlearning (Bettis and Hitt, 1995; Brown and Eisenhardt, 1998; D'Aveni, 1994). In such cases, automatic processing may prove neither prevalent nor adequate.

Hypothesis 1: The FU framework will explain a greater amount of variance in strategic issue response than will the TO framework.

Level Two: TO and FU as converging frameworks

Looking at the variables associated with both TO and FU, we examine to what extent elements of TO relate to elements of FU (e.g., Jackson and Dutton, 1988). Starting with TO and feasibility, when organizations possess stronger capabilities, Denison *et al.* (1996) found that they were more likely to view an issue as an opportunity, and less likely to view it as a threat. Martins and Kam-bil (1999) found that effect certainty and response certainty (part of feasibility) were positively correlated with opportunity framing. Finally, Kuvaas (2002) found that a facet of TO (controllability) was related positively to measures associated with feasibility. Thus, executives are likely to interpret resolvable issues over which they feel a sense of mastery as opportunities. On the other hand, irresolvable issues involving restriction in response are likely to be seen as more threatening.

Turning to TO and urgency, an issue high in urgency is likely to be considered important and involving time pressure (Dutton and Duncan, 1987a). Rather than dealing with the issue at a time of its own choosing, an organization must address it quickly. This reduces the sense of control, thus leading to an interpretation of threat. However, issues not involving time pressure can be addressed in a more ideal time frame with the clear understanding that, by delaying, a firm risks few unpleasant consequences (Dutton *et al.*, 1990). Thus, nonurgent issues have a built-in positive frame, as well as a higher level of controllability.

Hypothesis 2a: There exists a significant and negative relationship between feasibility and threat and between urgency and opportunity.

Hypothesis 2b: There exists a significant and positive relationship between feasibility and opportunity and between urgency and threat.

Level Three: TO and FU as commingled frameworks

Stepping back from the TO and FU frameworks, a frequent theme of the SID literature has been the

role of motivation in influencing both managerial interpretations of strategic issues and subsequent organizational actions (Daft and Weick, 1984; Dutton *et al.*, 1983; Dutton and Duncan, 1987a; Dutton and Jackson, 1987; Schneider, 1994). Along these lines, several scholars have implied that responding to strategic issues is essentially motivated behavior. In their seminal work on SID, Dutton and Duncan (1987a) pictured issue diagnosis leading to strategic momentum to respond, essentially a motivational state that propels decision makers to action. Furthermore, Dutton and Jackson (1987) conceptualized SID processes as involving the motivations of decision makers and Dutton *et al.* (1990) stressed how SID activities generated the motivation to act. More recently, Gilbert (2006: 150) emphasized the key role of SID in motivating response to external contingencies.

Expected utility explanations, such as Vroom's (1964) EIV model, have been specifically used in previous research on issue diagnosis and organizational response. For example, Dutton *et al.* (1990) suggested the relevance of subjective expected utility models to SID. Further, Dutton and Ashford (1993) suggested that managerial effort in selling strategic issues can be explained by, in part, an expectancy–valence approach, and Ashford *et al.* (1997) empirically validated this assertion. Expectancy theory has also aided understanding of how firms respond to the actions of competitors and information search activities in their sensemaking (Chen and Miller, 1994; Pineda *et al.*, 1998). The Chen and Miller (1994) study is particularly important given their use of the EIV model at the organizational level of analysis, the level at which overall strategic issue response occurs. Following these scholars, 'we see the expectancy model as a framework to identify factors' relating to, and a 'guide for modeling the nexus between,' environmental stimuli and organizational responses (Chen and Miller, 1994: 89, 87).

The EIV model has three components: expectancy associated with the perception that efforts will lead to attainment of performance goals; instrumentality associated with the likelihood that performance will be followed by a particular outcome; and valence or value associated with that outcome (Vroom, 1964). We propose that the EIV approach is particularly appropriate for integrating TO and FU for two reasons.

First, the EIV model appears to involve both kinds of processing identified in the current SID literature: automatic/affective and active/deliberative (Dutton, 1993a, 1997). The EIV approach conceptualizes both expectancy and instrumentality as addressing subjective probability calculations potentially involving deliberative mental evaluations (Vroom, 1964). On the other hand, valence is conceptualized in affective terms given that it is an individual's sentiment toward a particular outcome (Maitlis and Ozcelik, 2004; Vroom, 1964).

Second, the EIV approach closely reflects the strategic sensemaking process of using diagnostic activity to generate interest in, and propel action about, strategic issues. In particular, the components of the EIV model appear to reflect the basic nature of SID activities. Adopting and adapting EIV logic, we conceptualize the strategic issue diagnosis and response process as having three components, each representing a link between the four SID steps identified in our literature review. *Expectancy* is associated with the likelihood that a strategic issue is perceived as important enough to warrant priority on the agenda of strategic issues on which an organization will act. As such it represents the link between issue-selling efforts and strategy agenda placement. Organizational executives must recognize the strategic issue to be sufficiently consequential; otherwise there is little motivation to expend effort to prioritize the issue (Ashford *et al.*, 1997; Dutton and Ashford, 1993). *Instrumentality* is associated with the extent to which the organization has resources and capabilities to respond. As such it represents the link between the prioritized strategic issue and organizational response. Organizational executives must see taking action as something that is within the organization's capacity to do; otherwise there is little motivation to attempt an action that cannot be carried out (Chen and Miller, 1994; Dutton and Duncan, 1987a). *Valence* is associated with the anticipated positive organizational outcomes associated with the implemented response (Dutton and Duncan, 1987a). As such it represents the link between issue response and valued outcome. Executives must expect that the response to the strategic issue will lead to a beneficial result; otherwise there is little motivation to act in such a matter (Chen and Miller, 1994; Dutton and Duncan, 1987a; Dutton and Jackson, 1987; Gilbert, 2006).

Thus, the EIV model promises to provide a potential basis for understanding the underlying constructs to be found when items associated with TO and FU are commingled.

Hypothesis 3: The construct structure underlying a joint consideration of the TO and FU frameworks will reflect an integrative EIV model (three constructs that correspond to expectancy, instrumentality, and valence).

Level Four: 'Comminpeting' the new model against TO

As highlighted above, the current SID literature emphasizes TO. On the surface, it seems unreasonable to presuppose that managers exclusively emphasize affect/categorization processes in their diagnosis activities (Dutton, 1997). Studies suggest that both affective and deliberative influences are important in explaining managerial decision making (Forgas and George, 2001; Schwarz, 2000). Indeed, issue diagnosis activities have both intellectual and emotional components (Smircich and Stubbart, 1985; Thomas *et al.*, 1994). Furthermore, as previously discussed, the environmental change literature suggests that a complete explanation of how issue interpretation effects response requires a SID model that also incorporates FU (active processing) types of considerations (Bettis and Hitt, 1995; Brown and Eisenhardt, 1998).

Hypothesis 4: The integrated model of SID (containing variance associated with both TO and FU) will explain greater variance in response than will the TO framework alone.

METHODS

Choice of the strategic issue of economic uncertainty

To test our hypotheses, we use the strategic issue of uncertainty in the U.S. economy in the first half of 2003. There are several reasons for our selection. First, economic conditions in early 2003 provided substantial potential variability in strategic issue diagnosis. Though the conventional war in Iraq was resolved quickly, terrorist attacks in that country against coalition forces, and the ongoing war on Islamic terrorism, suggested continued uncertainty relating to a critical energy input for

the economy (oil). These uncertainties were further accentuated by falling leading economic indicators, unexpectedly high jobless claims, and the lingering effects of the burst of the stock market bubble. Yet, some economic benchmarks in the first half of 2003 were generally improving. Gross domestic product growth increased from 1.9 percent in the first quarter to 4.1 percent in the second. Along with this, interest rates were at near-record lows, 4.25 percent during most of the first 6 months of 2003, and the Fed's short-term interest rate was also at a record low 1.25 percent, providing a strong stimulus to the economy. Further, unemployment improved from the first to second quarters, from 6.4 percent to 6.1 percent.

Second, using such a broad-based, ill-structured strategic issue is consistent with the seminal conceptualization of strategic issues by Dutton *et al.* (1983). They portrayed strategic decision makers as facing 'an array of ambiguous data and vaguely felt stimuli which they must somehow order, explicate and imbue with meaning' (Dutton *et al.*, 1983: 307). They go on to state that issue diagnosis involves the translation of this 'broad, diffuse, and ill-specified' (Dutton *et al.*, 1983: 308) array of data into focused issues that are then explored, interpreted, and eventually acted upon. Third, while some SID researchers have used strategic issues that are relatively pre-packaged (e.g., Martins and Kambil, 1999; Ginsberg and Venkatraman, 1995), our method is consistent with other researchers who have used broad-based issues (Denison *et al.*, 1996; Milliken, 1990; Schneider, 1994).

Population/sample

Given important regional differences in economic prospects, and given the broad-based, multi-industry nature of the strategic issue of economic uncertainty, we use a multi-industry sample restricted by geography (the state of Michigan). We targeted relatively large organizations (100 or more employees) to ensure that they had the requisite personnel to undertake strategic issue analysis.

Using the Harris database of Michigan businesses (an annually updated national database containing descriptive and executive-identifying information on firms in multiple industries), we randomly selected 1,800 Michigan firms from a range

of industries including construction, manufacturing, wholesale and retail trade, finance, and services. Michigan had endured a deeper recession than many other states: for example, while the national unemployment rate in the first quarter of 2003 was 6.4 percent, Michigan's unemployment was 7.3 percent, the third highest in the nation (U.S. Department of Labor 2003 figures). Thus, firms affected by the Michigan economy were likely to be very attentive to fluctuations in the economy.

We identified the top decision maker listed in the Harris database (Chief Executive Officer, CEO) and sent this individual a survey by mail. CEOs represent exceptionally well-qualified, well-informed individuals given that they are often involved in the interpretation of strategic issues (Brown and Lusch, 1992; Glick *et al.*, 1990; Thomas and McDaniel, 1990) and have more strategic issue-relevant information than managers lower in the hierarchy (Branzei *et al.*, 2004).

Data collection

Following Dillman (2000), we sent an initial notification letter and followed this up with two rounds of surveys. Our cover letter described the strategic issue of current economic conditions as being both familiar (given that it involved an environmental sector to which executives pay frequent attention; Daft *et al.*, 1988) yet also unique given the mixed signals in the business and consumer sectors, the then current situation in the war in Iraq, and the continuing threat posed by terrorists. The cover letter further stated that we wanted to evaluate how firms in Michigan were responding. The accompanying survey consistently referred to the strategic issue as 'current economic conditions' and explicitly requested the CEO to provide answers with respect to the views of his/her firm's 'top management.' Thus, the CEO represented an informant—one asked to provide information about a situation to which he or she has privileged access—rather than a respondent—one asked to express personal opinion (Brown and Lusch, 1992; Seidler, 1974).

In all we received 280 usable responses for a response rate of approximately 15 percent, which compares favorably with the 10–12 percent response typical for executives in sizable American firms (Hambrick, Geletkanycz, and Fredrickson, 1993). Average informant firm age and size were

35 years and \$231 million in sales, respectively. Based upon a self-classification item in the survey, 10.6 percent of sample firms were in primary industries such as agriculture, mining, and construction, 42.6 percent were in secondary industries such as manufacturing, 31.6 percent were in tertiary industries such as retail, finance, and services, while 15.2 percent classified themselves as 'other.'

Four months after the initial mail-out, a second (different) survey was sent to all CEOs who responded to the initial survey. We specifically asked what actual actions their firms had taken in the interim in response to the economic uncertainty of early 2003. This is within the 6-month time frame recommended by scholars for longitudinal studies (e.g., Chattopadhyay *et al.*, 2001; Glick *et al.*, 1990). We received 167 usable surveys for a second survey response rate of 60 percent.

We tested for response bias in our sample by correlating survey response time with each of the variables in our study (Hawes and Crittenden, 1984). There were no significant correlations at the 0.05 level, however, and thus little evidence of such bias.

Measures

Data for the independent diagnosis variables were collected in the first questionnaire. Data for the dependent response variables were collected from both the first (intended responses) and second (actual responses) questionnaires. Given our interest in the relationships between the two frameworks, we specifically used previously validated measures of the TO and FU constructs. We employed abbreviated versions of some of these scales (see Table 4). All scale values were the item average. Reliabilities are reported in Table 1.

Threat–opportunity

In keeping with the findings of Jackson and Dutton (1988) and Denison *et al.* (1996), we measured threat and opportunity separately, using three items for each scale. To maximize content validity, consistent with Hinkin (1998), we used existing theory to guide our selection of items that would sample the conceptual domain of interest. Accordingly, based on an assessment of face validity, we drew our threat–opportunity measures from Thomas and McDaniel (1990), taking a subscale of the three

most characteristic items for both threat and opportunity from the positive–negative, loss–gain, and controllable–uncontrollable portions of their larger scale of 15 items. Reliabilities for their scales ranged from $\alpha = 0.64$ to 0.87.

Feasibility–urgency

We used content/face validity logic similar to that employed in the previous section to derive our measures of feasibility and urgency (e.g., Hinkin, 1998). We constructed our three-item measure of feasibility using a subscale of three items drawn from two sources: Ginsberg and Venkatraman (1995) and Denison *et al.* (1996). Reliabilities for their respective scales were not reported. Our two-item measure of urgency was drawn from Dutton *et al.* (1990). Again, we examined each item and selected the ones most characteristic of the construct in question. Their entire scale had an $\alpha = 0.88$.

Response

Responses to strategic issues have generally been conceptualized along two different dimensions: magnitude of response (e.g., Dutton and Duncan, 1987a; Thomas *et al.*, 1997) and domain of response (internal/external) (e.g., Ansoff, 1975; Ginsberg and Venkatraman, 1995). Accordingly, we conceptualize response in terms of both magnitude and domain factors (extent of both external and internal response).

We first operationalized response in terms of *intentions to respond* (Dutton and Duncan, 1987a; Dutton *et al.*, 1990; Ginsberg and Venkatraman, 1995). We adapted the measure of response originally employed by Glick *et al.* (1990) and later used by Chattopadhyay *et al.* (2001). These dimensions covered the range of possible responses a firm could take to strategic issues. We asked informants as to the extent that firm executives intended to make changes in each area. Congruent with Chattopadhyay *et al.* (2001), we used five items to measure responses of an *external* nature and eight items to measure responses of an *internal* nature.

We also operationalized response in terms of *actual responses* (e.g., Sharma, 2000; Thomas *et al.*, 1993). In the second survey, mailed 4 months after the first, we used the same 13 items to assess the degree to which firms responded to the issue of economic uncertainty,

except this time we directed the informants to answer the questions with regard to what the firms *actually* did, rather than what they *intended* to do, as in the first survey.

Control variables

The extent of a firm's *international involvement* has been found to be related to issue interpretation (Denison *et al.*, 1996). We use information provided by the Harris database on whether firms were involved in exporting, importing, both (= 1), or neither (= 0).

Industry conditions have been recognized in previous research as important covariates of interpretation and response (e.g., Chattopadhyay *et al.*, 2001; Goodstein, 1995). We use one variable to measure the growth of industry sales in 2002, the year preceding data collection. A second variable assessed the change in industry growth from 2001 to 2002. We gathered data for both variables from the Bureau of Economic Analysis web site and used their sector designations.

Different areas of the state of Michigan enjoy greatly differing levels of economic development and prosperity. To control for such *local factors*, we used variables measuring: first, per capita income of the county where the firm resided; second, growth in per capita income from 2001 to 2002; and third, the population of the county as a rough proxy of access to employees and customers. Population and per capita data were drawn from the U.S. Census Bureau and Regional Economic Accounts of the Bureau of Economic Analysis.

We controlled for four variables at the *firm* level. Due to its effects on diagnosis and response, SID scholars have frequently held *firm performance* constant (Chattopadhyay *et al.*, 2001; Denison *et al.*, 1996; Milliken, 1990). We measured firm performance using the three-item scale from Judge and Douglas (1998). The extent of *slack resources* has also been a frequently employed control variable in SID research (Sharma, 2000; Thomas *et al.*, 1997). We measured the extent of slack resources by two methods: with a two-item, self-report scale drawn from Chattopadhyay *et al.* (2001) and an indicator of the firm's creditworthiness assessed by Dun and Bradstreet's credit rating. *Firm size* and *firm age* have also been frequently included in studies on issue interpretation (e.g., Chattopadhyay *et al.*, 2001; Denison *et al.*, 1996; Goodstein, 1995; Kuvaas, 2002; Sharma,

2000). Our survey included an item for company-wide sales and firm age was obtained from the Harris database.

At the *individual level*, we controlled for informant firm tenure. Brown and Lusch (1992) argued that when using single informants sources of potential systematic bias, such as ignorance and vested interest (affected by tenure), should be controlled.

Data integrity

Heavy reliance has been placed on self-report data in research on strategic issue interpretation and response (e.g., Chattopadhyay *et al.*, 2001; Denison *et al.*, 1996; Kuvaas, 2002; Martins and Kambil, 1999). While such methods have been viewed as an appropriate and essential research methodology (Avolio, Yammarino, and Bass, 1991; Harrison, McLaughlin, and Coalter, 1996), data collected using the same method and from the same individual may be subject to possible common method variance (CMV) problems (Avolio *et al.*, 1991; Podsakoff and Organ, 1986).

Bias minimization steps

We took several steps in the design of our study to minimize the influence of CMV. First, data for some of our dependent variables were collected longitudinally, 4–5 months after the first survey was mailed out. Longitudinal data are less susceptible to common method bias problems (Avolio *et al.*, 1991; Lindell and Whitney, 2001). Second, several perceptual items (performance, slack, and actual response) could be externally verified by the informant. Because informants have hard data as a point of reference, such data are less prone to CMV (Podsakoff and Organ, 1986). Third, some of the control variables were from archival sources, for example industry and locality effects, thus mitigating the potential of CMV (Luo, 2002). Fourth, CMV is most prevalent when there are few items to measure a construct and when both independent and dependent variables are cognitions (Harrison *et al.*, 1996). We used multi-item scales, and the dependent variables are not measures of cognitions but intentions to act and actual actions undertaken. Fifth, the items in our dependent variables were neither novel in content, narrowly defined, nor overtly similar to items in the independent variables, thus avoiding characteristics that make items

Table 1. Descriptive statistics

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. International involvement	0.31	0.47										
2. Growth in country per capita income	0.56	1.54	-0.089									
3. County population	5.83E+05	6.76E+05	-0.071	0.427**								
4. County per capita income	3.03E+04	7.48E+03	0.058	-0.019	0.440**							
5. Industry growth in 2002	1.66	1.79	-0.178**	0.052	0.054	-0.048						
6. Change in industry growth: 01 to 02	4.53	4.00	0.342**	-0.114	-0.073	0.001	0.488**					
7. Slack resources	4.56	1.43	0.107	0.012	-0.059	0.036	0.117	0.167**				
8. Previous performance	3.34	1.14	-0.075	-0.034	0.080	0.082	-0.098	-0.060	-0.402**			
9. Company-wide sales (\$)	2.31E+08	1.17E+09	0.039	0.016	0.064	0.182**	0.082	-0.040	0.072	0.028		
10. Firm Age	35.05	28.70	0.035	0.123*	0.060	-0.116	0.108	0.140*	0.100	-0.006	0.032	
11. DB credit rating	4.22	1.18	-0.004	0.053	-0.076	-0.123*	0.006	0.109	0.220**	-0.109	-0.163*	0.146*
12. Tenure	18.72	10.99	0.065	-0.092	-0.010	0.063	-0.020	0.110	0.043	0.090	-0.039	0.070
13. Opportunity	3.64	1.23	-0.044	0.034	-0.019	0.087	0.034	0.022	0.360**	-0.346**	-0.041	-0.060
14. Threat	3.71	1.27	0.064	-0.068	0.008	-0.159	-0.051*	-0.051	-0.449**	0.395**	-0.065	0.003
15. Urgency	5.53	1.04	-0.005	-0.059	0.053	0.088	-0.105	-0.013	-0.321**	0.190**	-0.006	-0.025
16. Feasibility	4.68	0.97	-0.041	0.021	-0.048	-0.017	0.070	-0.006	0.483**	-0.392**	0.072	0.041
17. Favorability	3.28	1.49	-0.030	0.028	-0.009	0.078	0.046	0.028	0.310**	-0.338**	0.010	-0.083
18. Influence	3.01	0.96	-0.071	0.043	-0.038	0.033	0.086	0.016	0.467**	-0.371**	0.032	0.032
19. Intended external response	3.54	1.25	0.071	-0.018	0.051	-0.007	-0.071	0.012	-0.210**	-0.013	-0.034	-0.068
20. Intended internal response	3.63	1.29	0.034	0.034	0.132*	0.036	0.015	0.065	-0.305**	0.179**	-0.015	-0.055
21. Actual external response	2.67	1.20	0.004	-0.056	0.101	0.010	0.154	0.125	-0.140	0.045	-0.043	-0.080
22. Actual internal response	2.84	1.24	-0.081	-0.030	0.093	-0.077	0.109	0.099	-0.254**	0.211**	-0.030	0.033

Table 1. (Continued)

	11	12	13	14	15	16	17	18	19	20	21	22
1. International involvement												
2. Growth in country per capita income												
3. County population												
4. County per capita income												
5. Industry growth in 2002												
6. Change in industry growth: 01 to 02												
7. Slack resources												
8. Previous performance												
9. Company-wide sales (\$)												
10. Firm Age												
11. DB credit rating												
12. Tenure	0.145*											
13. Opportunity	0.044	0.036	0.78									
14. Threat	-0.052	-0.032	-0.599**	0.76								
15. Urgency	-0.132*	0.111	-0.297**	0.408**	0.69							
16. Feasibility	0.109	0.010	0.542**	-0.651**	-0.312**	0.70						
17. Favorability	0.018	-0.012	0.943**	-0.540**	-0.300**	0.425**						
18. Influence	0.097	0.057	0.640**	-0.756**	-0.291**	0.932**	0.464**					
19. Intended external response	-0.207**	-0.012	0.042	0.155*	0.240**	-0.191**	0.093	0.75				
20. Intended internal response	-0.238**	0.038	-0.031	0.240**	0.377**	-0.220**	-0.009	-0.171**	0.697**	0.84		
21. Actual external response	-0.145	-0.100	0.057	0.060	0.068	-0.221**	0.090	-0.133	0.541**	0.486**	0.77	
22. Actual internal response	-0.170*	-0.008	-0.073	0.183*	0.300**	-0.199*	-0.064	-0.130	0.484**	0.597**	0.647**	0.88

* $p \leq 0.05$; ** $p < 0.01$

Reliabilities on the diagonal.

more prone to method bias due to context effects (Harrison *et al.*, 1996). Sixth, we reverse-scaled several of the independent variable items, and following Seibert, Kraimer, and Liden (2001) we separated items for the independent and dependent variables into different sections. Seventh, informants are more likely to reduce cognitive effort toward the end of a survey. Accordingly, the last page of our questionnaire consisted of demographic items requiring less cognitive effort and are thus less prone to CMV (Lindell and Whitney, 2001: 118).

Bias assessment

Several *post hoc* tests determined the extent to which CMV was present in our data. First, we used the Harman one-factor test (Podsakoff and Organ, 1986). Employing all perceptual study variables, as done in Luo (2002), the factor analysis yielded 14 separate factors with an eigenvalue greater than 1. The first factor explained 20.7 percent of the variance, which was only 28.5 percent of the total variance explained (72.5%). The emergence of more than one factor, the first factor accounting for less than half the explained variance, suggests that CMV is not driving the results of our study (Podsakoff and Organ, 1986: 536).

Second, we also employed a varimax rotation of the perceptual data related to our multi-item constructs (e.g., Seibert *et al.*, 2001). Based on an item-loading cut-off of 0.50, factors emerged that clearly represented interpretation, performance, and response. There were no items that cross-loaded simultaneously on either interpretation and response factors, or interpretation and performance factors. The average item loading on an intended construct = 0.69 and of the more than 200 potential cross-loadings across independent–dependent variables categories, only two exceeded 0.30 (0.468 and 0.369). Given the divergent validity between our independent and dependent measures, we have further evidence that CMV is not a problem.

Third, Lindell and Whitney (2001) argued that the ‘smallest correlation among the manifest variables provides a reasonable proxy for CMV’ and that this proxy could be used to ‘adjust estimated predictor–criterion correlations for CMV’ (Lindell and Whitney, 2001: 115, 118). Taking the lowest correlation between an independent and dependent variable (that between favorability and

intended internal response), and following their recommended analysis procedures to correct for CMV, we found that the significant correlations between predictor and criterion variables retained their levels of statistical significance. Accordingly, we can conclude that our results ‘cannot reasonably be accounted for by CMV’ (Lindell and Whitney, 2001: 119).

Regarding multicollinearity, variance inflation factors for our independent variables ranged between 1.864 and 1.260, well below the accepted cut-off of 10 (Hair *et al.*, 1998: 193).

Analysis method

We employ different statistical methodologies appropriate for each of the four quadrants of our ladder of integrative intensity (Rousseau, 1985). At the *compete* level, we use hierarchical multiple regression to assess which of the two frameworks provides greater explanatory power. We follow the profiling of incremental R^2 method used by Spanos, Zaralis, and Lioukas (2004: 158). At the *converge* level, we use partial correlations (holding the control variables constant) to assess relationships between the TO and FU variables. At the *commingle* level we use factor analysis with principal components and oblimin rotation to identify the underlying constructs of the TO and FU frameworks. We employ a factor loading cut-off = 0.50, suggested by Hair *et al.* (1998: 111). Finally, at the ‘*comminpete*’ level we again employ hierarchical multiple regression. We compare the predictive efficacy of the integrated model from the commingle level against that of the dominant TO framework (e.g., Spanos *et al.*, 2004).

RESULTS

Table 1 contains descriptive statistics, zero-order correlations, and reliabilities.

Compete

TO and FU are essentially equally strong predictors of *intended* external responses (R^2 changes of 0.048 vs. 0.047) (see Table 2). However, for intended internal responses, FU is clearly the stronger predictor (R^2 changes of 0.051 vs. 0.088). Thus, for intended responses, we find partial support for Hypothesis 1. For *actual* responses, we

see that in each case the TO framework is outperformed by FU (R^2 changes of 0.029, and 0.016 vs. 0.051, and 0.040, respectively) (see Table 3). Thus, we find generally consistent support for Hypothesis 1.

Since these results indicate that FU is superior in predicting response, it raises the question: How relevant is TO? To investigate, we conducted a *post hoc* hierarchical regression analysis with controls being entered first, then FU, and finally TO. Results indicate that TO added significant variance ($p = 0.001, 0.003, 0.035$) for three of the four response variables.

Converge

Holding constant the 12 control variables, urgency has significant partial correlations with both threat and opportunity (0.3502, sig. = 0.000 and -0.2194 , sig. = 0.001). Feasibility also has significant partial correlations with both TO variables: threat = -0.5033 (sig. = 0.000)

and opportunity = 0.3882 (sig. = 0.000). Thus, Hypotheses 2a and 2b find strong support.

Commingle

We subjected the 12 interpretation items associated with the TO and FU frameworks to a factor analysis. As shown in Table 4, three interpretable factors emerged. The first factor contains the three feasibility items and two items concerning controllability. We interpreted this first factor as *influence*, which seems to reflect the perceived capacity of the organization to respond to a strategic issue. The *urgency* items both loaded on the second factor. Urgency seems to reflect an assessment of the perceived important or value of responding to a strategic issue (e.g., Yukl, Kim, and Chavez, 1999). The third factor, *favorability*, consisted of two opportunity items, positive and gain, consistent with Thomas *et al.* (1993), who found the positive/gain dimensions of TO to be indistinguishable. Favorability seems to reflect the extent to which a firm's response to a strategic issue will

Table 2. Hierarchical regression results: intended response

Models	Intended external				Intended internal			
	1	2	3	4	5	6	7	8
<i>Control variables</i>								
Intl involvement	0.052	0.062	0.056	0.083	0.006	0.023	0.012	0.039
County population	0.174 [^]	0.183*	0.168 [^]	0.173*	0.208*	0.207*	0.201*	0.207*
County per capita income	-0.052	-0.043	-0.068	-0.095	-0.037	-0.028	-0.063	-0.082
Cnty per cap. inc. growth	-0.074	-0.076	-0.079	-0.081	-0.001	0.005	-0.020	-0.028
Industry growth in 2002	-0.092	-0.072	-0.054	-0.025	-0.006	0.009	0.038	0.053
Change in industry growth	0.104	0.098	0.072	0.048	0.188*	0.186*	0.154 [^]	0.137 [^]
Slack resources	-0.212**	-0.201*	-0.219**	-0.128	-0.278***	-0.233**	-0.179*	-0.197*
Previous performance	-0.177*	-0.164*	-0.173*	-0.129	0.004	0.009	0.008	0.075
Company-wide sales (\$)	-0.057	-0.039	-0.061	-0.065	-0.037	-0.019	-0.043	-0.045
Firm age	-0.032	-0.017	-0.036	-0.011	-0.064	-0.038	-0.063	-0.043
DB credit rating	-0.179*	-0.178*	-0.179*	-0.149*	-0.126 [^]	-0.135 [^]	-0.104	-0.083
Tenure	0.009	0.006	0.007	-0.008	0.087	0.081	0.045	0.047
<i>Diagnosis variables</i>								
Threat		0.218*				0.256**		
Opportunity		0.267**				0.260**		
Feasibility			-0.104				0.021	
Urgency			0.202**	0.264***			0.326***	0.374***
Favorability				0.331***				0.215**
Influence				-0.164 [^]				0.015
Incremental R^2		0.048**	0.047**	0.118***		0.051**	0.088**	0.127***
F change		5.14 _{2,180}	5.02 _{2,179}	9.15 _{3,177}		6.00 _{2,183}	10.99 _{2,173}	11.10 _{3,181}
Equation adjusted R^2	0.063*	0.104**	0.106**	0.177***	0.121***	0.166**	0.215**	0.254***
Equation F	2.09 _{12,182}	2.61 _{14,180}	2.63 _{14,179}	3.76 _{15,177}	3.40 _{12,185}	3.80 _{14,183}	4.86 _{14,183}	5.44 _{15,181}

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; [^] $p < 0.10$; betas are reported.

Table 3. Hierarchical regression results: actual response

Models	Actual external				Actual internal			
	9	10	11	12	13	14	15	16
<i>Control variables</i>								
Intl involvement	0.075	0.106	0.005	0.094	−0.053	−0.019	−0.037	0.009
County population	0.239*	0.249*	0.269*	0.238*	0.302**	0.306**	0.315**	0.311**
County per capita income	−0.052	−0.038	−0.100	−0.066	−0.144	−0.105	−0.135	−0.144
Cnty per cap. inc. growth	−0.109	−0.110	−0.105	−0.070	−0.180^	−0.164	−0.175^	−0.180^
Industry growth in 2002	0.291*	0.291*	0.290*	0.285*	0.142	0.133	0.163	0.142
Change in industry growth	0.029	0.025	−0.005	0.011	0.043	0.065	0.027	0.043
Slack resources	−0.181^	−0.199^	−0.045	−0.125	−0.248*	−0.290*	−0.196^	−0.248*
Previous performance	−0.030	−0.042	−0.116	−0.031	0.114	0.094	0.060	0.114
Company-wide sales (\$)	−0.132	−0.102	−0.094	−0.118	−0.051	−0.037	−0.055	−0.051
Firm age	−0.119	−0.102	−0.126	−0.097	−0.007	0.015	−0.029	−0.007
DB credit rating	−0.044	−0.032	−0.049	−0.041	−0.064	−0.097	−0.073	−0.064
Tenure	−0.061	−0.074	−0.091	−0.074	−0.100	−0.073	−0.098	−0.100
<i>Diagnosis variables</i>								
Threat		0.161				0.066		
Opportunity		0.217^				0.165		
Feasibility			−0.279*				−0.020	
Urgency			0.039	0.100			0.222*	0.256**
Favorability				0.257*				0.162
Influence				−0.204^				0.055
Incremental R^2		0.029	0.051*	0.061^		0.016	0.040^	0.062*
F change		1.77 _{2,100}	3.24 _{2,100}	2.56 _{3,98}		1.03 _{2,101}	2.73 _{2,101}	2.89 _{3,99}
Equation adjusted R^2	0.071^	0.086^	0.105*	0.105*	0.140**	0.136**	0.167**	0.185**
Equation F	1.73 _{12,102}	2.61 _{14,100}	1.96 _{14,100}	1.88 _{15,98}	2.72 _{12,102}	2.30 _{14,101}	2.65 _{14,101}	2.73 _{3,99}

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ^ $p < 0.10$; betas are reported.

Table 4. Factor analysis of the TO and FU items

	Influence	Urgency	Favorability
Feas—Has the capability to address CEC	0.807	0.081	0.042
Thr—Dealing successfully with CEC is out of our firm's control	−0.747	−0.031	0.009
Feas—Able to able to manage CEC with current resources	0.735	−0.128	−0.096
Opp—Able to control effect of CEC on our organization	0.699	0.172	0.146
Feas—Difficult to decide which action likely to be most effective (reverse)	0.681	−0.062	−0.075
Thr—CEC have negative implications for our firm's future	−0.446	0.294	−0.315
Thr—CEC will lead to a loss for our firm	−0.395	0.238	−0.293
Urg—CEC demand attention	0.068	0.889	0.001
Urg—CEC are an urgent issue for our firm	−0.048	0.836	−0.024
Opp—Our firm could gain a great deal from CEC	−0.036	0.039	0.974
Opp—CEC represent something positive for our firm	0.003	−0.052	0.928
Eigenvalue	4.677	1.357	1.136

CEC, current economic conditions.

Item loadings in bold type indicate the factors on which an item loaded. Item loading cut-offs were set at 0.50.

result in a positive gain. We dub the integrated model FUI (favorability, urgency, and influence). Given that three factors emerged and that the constructs influence, urgency, and favorability appear to map onto the three EIV components, instrumentality, expectancy, and valence, respectively, we accept Hypothesis 3.

Comminpete

For *intended* external and internal responses, the R^2 changes attributable to the FUI framework are as follows: external = 0.118 (0.000) and internal = 0.127 (0.000)—more than twice as large as for TO in either case. For *actual* external and internal

responses, R^2 changes attributable to the FUI framework are: external = 0.061 (0.060) and internal = 0.062 (0.039)—again more than twice as large as for TO. These results provide consistent support for Hypothesis 4.

DISCUSSION AND IMPLICATIONS

This article provides a rationale for a joint examination and integration of two prominent models of strategic issue diagnosis (SID), threat–opportunity (TO) and feasibility–urgency (FU), emphasizing automatic/affective and active/deliberative issue processing, respectively. We construct a ‘ladder of integrative intensity’ and, using the issue of economic uncertainty in early 2003, employ the resulting four levels to shed light on unanswered questions relating to SID. Our discussion focuses on what we now know about SID and the importance of this knowledge for theory and practice.

What we now know about SID

First, current SID literature emphasizes TO to the relative exclusion of FU and suggests that TO is more important than FU in driving strategic issue responses. At Level One of our ladder of integrative intensity, we now know that FU is generally a better predictor of both intended and actual responses; thus active issue processing is not only more important than previously established, but also (for this strategic issue) more important than automatic processing. This is contrary to Dutton (1993a), who suggested that automatic processing is more predominantly used. Our finding is, however, consistent with the scanning literature suggesting that executives direct greater attention and cognitive effort toward uncertain environmental sectors (Boyd and Fulk, 1996: 14; Daft *et al.*, 1988) and with prescriptive literature suggesting that managers should give deliberative consideration to significant, complex issues (Ansoff, 1975, 1980; Camillus and Datta, 1991). It is also consistent with literature suggesting that a more active and deliberative analysis procedure is required given higher levels of turbulence and hypercompetition (Bettis and Hitt, 1995; Brown and Eisenhardt, 1998; D’Aveni, 1994).

Second, while current SID literature suggests a relation between TO and FU, this has never been empirically demonstrated or explored. At Level

Two of the ladder of integrative intensity, we now know that there are significant relationships between elements of these frameworks. As anticipated, urgency was positively related to threat and negatively related to opportunity, while feasibility was positively related to opportunity and negatively related to threat. These significant correlations clearly establish that automatic and active processing (as captured by TO and FU) are related, but not so highly as to make them indistinct. While our results are consistent with researchers who have argued for a close linkage between elements of affective and cognitive information processing (e.g., Forgas and George, 2001), they contrast with those who viewed TO and FU as substantially the same (Ginsberg and Venkatraman, 1992).

Third, current SID literature has not sought to combine both automatic and active processing into a single model; thus we know very little of how an integrated model of SID would look. At Level Three of the ladder of integrative intensity, we now know that there exist common underlying constructs under girding both TO and FU, validating our research thrust toward integration congruent with the EIV model. Similar to an EIV motivational conceptualization, and from a SID perspective, the three factors emerging from the factor analysis suggest that the extent of an organization’s response to a strategic issue will depend on: (1) assessment of the perceived importance of responding to a strategic issue; (2) the perceived capacity of an organization to respond; and (3) the perceived extent to which a firm’s response will result in a potential gain. Our results are consistent with several researchers in the strategic issue response, interpretation, and selling literatures (e.g., Dutton and Ashford, 1993; Ashford *et al.*, 1997; Chen and Miller, 1994) who suggested that motivation may be an appropriate lens through which to view strategic issue diagnosis and response activities.

Fourth, by focusing predominantly on TO, the current SID literature has failed not only to employ a more integrated and encompassing approach to explaining strategic issue response, but, from a positivist perspective, to subject TO to a test of relative explanatory power as well (Grandori, 2001). At Level Four of the ladder of integrative intensity, we now know that joint consideration of TO and FU results in an integrated model (FUI) that provides a more powerful explanation than does TO alone. By a wide margin, FUI outperformed

TO in every instance in predicting both intended and actual responses. Thus, models containing both active and automatic processing are likely to prove superior to those focusing on automatic processing alone. Our findings are consistent with literature suggesting that automatic and active processing can and do coexist (Smircich and Stubbart, 1985; Thomas *et al.*, 1994), given that such thinking tacitly implies that a more integrated SID model would better explain strategic issue response than a less integrated one.

Importance for theory and practice

These research findings have several important implications for theory and practice. First, our study suggests that SID researchers should not focus on automatic processing to the exclusion of more deliberative models and that research using FU-related approaches should be utilized to a greater degree by SID researchers. Along these lines, we note that, by using only TO, SID researchers inadvertently provide a rather unflattering view of managers as issue processors. The picture of executives engaging in less than effortful, automatic diagnoses of important strategic issues could imply a certain degree of negligence and lack of fiduciary responsibility associated with due diligence. Our results, on the other hand, paint a different picture. Executives in our sample appeared to attentively engage in more active, deliberative, and effortful processing regarding economic uncertainty in 2003, and what their organizations eventually did in response to this strategic issue depended more on these active diagnoses than automatic ones. We note that our results are consistent with current emphasis on viewing management and business activities in a more positive light (e.g., Cameron, Dutton, and Quinn, 2003), and thus point toward a positive-oriented SID research focus. Our *post hoc* analysis, however, demonstrates that TO also adds significant variance of response explained on its own. This finding is consistent with current research using TO, and suggests the continued (if partial) relevance of the current model.

Second, our finding that TO and FU are correlated points to the need for SID researchers to engage in more integrative research. That automatic (TO) and active (FU) strategic issue processing are likely to have nonindependent effects

on response cautions SID researchers to conduct inquiry with more fully specified models.

Third, along such lines, this study suggests that researchers and managers begin to explore a broader, more integrative approach to SID based on motivation theory. Specifically, our study suggests that a joint exploration of TO and FU points to a FUI framework where the importance of responding to a strategic issue (urgency), organizational resources available to respond (influence), and anticipated results of the response leading to gain (favorability) are empirically relevant in the diagnosis of, and response to, a broad-based and uncertain strategic issue. The emergence of three factors closely tracking the EIV components suggests that more attention should be paid to motivation influences in SID. Table 5 contains a listing of the theoretical underpinnings of the TO, FU, and FUI frameworks.

Fourth, our study enables us to explore the relationship between the FUI variables and different organizational response categories (see Tables 2 and 3). Examining the relationships of the FUI variables with response, for *intended external* and *internal* responses, both urgency and favorability are positively related to response (at 0.01 or better) (see Table 2). Influence, however, has a marginally negative relationship to intended external response. Thus, urgency and favorability strongly and positively influence intentions to respond. Turning to actual responses, we find a distinctly different pattern across internal and external (see Table 3). For *actual external* responses, favorability has a positive relationship while influence again has a marginally negative one. Urgency does not significantly affect actual external responses. However, urgency positively affects *actual internal* responses while neither favorability nor influence does.

We can use these findings to make sense of a seeming conflict within the SID literature, thus providing further evidence of the value of our integrative FUI model. Some scholars (e.g., Dutton, 1993b; Thomas *et al.*, 1993) have suggested that designating an issue as an opportunity would draw a great deal of managerial interest, building strategic momentum to respond. On the other hand, Gilbert (2006) found that positive interpretations were less likely to propel significant action: threat perceptions were likely to engender large and rigid responses, while opportunities were prone to generate smaller yet flexible

Table 5. Theoretical underpinning of SID frameworks

	Threat–opportunity	Feasibility–urgency	Favorability–urgency–influence
Underlying theory	Social categorization Rosch (1975)	Social construction Berger and Luckmann (1967)	Motivation (EIV) theory Vroom (1966)
Primary orientation	More affective	More deliberative	Both affective/deliberative
SID process	Automatic	Active	Both automatic/active
Seminal representations	Dutton and Jackson (1987) Jackson and Dutton (1988)	Dutton and Duncan (1987a) Dutton <i>et al.</i> (1990)	Chen and Miller (1994)
Component concepts	Gain–loss	Understanding–feasibility	Importance of response–urgency
	Positive–negative	Capability–feasibility	Resources available–influence
	Controllability	Importance–urgency	Anticipated gain–favorability
		Time pressure–urgency	

ones. Our findings that favorability affects both intentions to respond and actual external response supports scholars arguing for a positive relationship between opportunity diagnoses and response (e.g., Dutton 1993b; Thomas *et al.*, 1993). An upbeat assessment of the likelihood of a beneficial outcome not only focused managerial intentions on responding, but also positively affected what the organization subsequently did as well. On the other hand, our findings that influence negatively (though marginally) affected both intended and actual external responses demonstrate how opportunity-like assessments may prove a double-edged sword of sorts, providing some support for Gilbert (2006). While the marginal nature of the finding suggests caution in interpretation, it may well be that this reflects a complacency effect in organizations, where greater organizational resources leads to lowered responsiveness to environmental change (e.g., Bourgeois, 1981; Miller, 1990, 1993). Given that our specific FUI model findings are congruent with seemingly opposing perspectives regarding how different diagnoses affects response, our results again demonstrate the value of considering SID within a more encompassing, integrative model.

Fifth, our study is unique in the SID literature in that it is the first to examine the broad strategic issue of economic uncertainty. Further, few studies using such broad-based issues have fully explored the effects of interpretation on response (Denison *et al.*, 1996; Schneider, 1994). Milliken (1990), who did, found that interpretation had little effect on administrator certainty about how to respond.

Ours is thus the first study to confirm that the interpretation of broad-based strategic issues indeed does have an effect on not only organizational intentions regarding response, but also on what these organizations actually did. We call for more SID research using broad strategic issues given their consistency with scholarly conceptualizations of strategic issues as well as the importance of such factors for organizational environments.

Sixth, we developed a ladder of integrative intensity and used it as a basis for developing hypotheses and identifying appropriate statistical methodologies. We think that this has important theory development and research design implications. Bettis (1991) identified a ‘straitjacket’ that the strategic management field had entered because the more traditional ‘depth rigor,’ associated with tight, positivist research methods, often resulted in a narrowing of research scope. Consequently, Bettis (1991) called for a widening of such scope, as have others (Ofori-Dankwa and Julian, 2001; Osigweh, 1989). While such widening can reduce rigor, a scholarly ascent of our ladder provides a method to increase ‘breadth rigor’ through a systematic, theory-based widening of research scope integrating several distinct and potentially conflicting perspectives. The wider adoption of such an integrative approach has the promise to enrich the SID literature, as well as other fields.

Finally, regarding practical insights for managers, our findings suggest implications at a general and specific level. Generally, the current SID literature would counsel executives to envision strategic issues in terms of threat–opportunity,

given the field's focus on this framework. Our findings counsel executives to consider a motivation-based, broader, and more nuanced set of considerations, favorability–urgency–influence, when diagnosing and responding to strategic issues. More specifically, we note that while both favorability and urgency bolstered intentionality and thus could be taken as desirable in generating momentum to respond, the effects of these variables on response were not equivalently sustained: only favorability affected actual external response, while only urgency affected actual internal response. Further, a diagnosis component that one might expect to generate a greater momentum to respond (influence) might actually have the opposite effect. Executives should therefore act with an awareness of the potentially nonuniform effects of different components of the diagnosis process on organizational response intentions and actions.

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