

STRATEGIC ISSUE MANAGEMENT AS A PROCESS: A REVIEW OF THE STRATEGIC ISSUE CATEGORIZATION LITERATURE

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ABSTRACT

Organizations regularly experience strategic issues through abrupt and unforeseen changes within their business environments. Dealing with such strategic issues is critical for firms to ensure long-term survival and sustainable growth. Throughout past decades, management scholars have produced a steady output of insights on the antecedents, processes and consequences of the entire strategic issue management process, as well as the theoretical lenses with which to analyze them. The purpose of this study is to provide an overview of the state of knowledge in this field by organizing the existing literature into an integrative and comprehensive framework. We find that scholars within this stream of research have thus far primarily focused on the analysis of individual isolated strategic issues, employing an event-based perspective on strategic issue categorization. These findings oppose 1) practical evidence suggesting a long-term effect of strategic issues and their categorization on organizations and 2) findings from related research streams suggesting that a continuous confrontation of employees with threats leads to a decrease of organizational energy, which negatively affects an organization. Through our structured analysis, we have also identified several alleys for fruitful future research. Expanding research efforts by taking a process perspective to strategic issue management and incorporating past categorization behavior will assist scholars to achieve a better understanding of strategic issue management.

Keywords: Strategic issue categorization, strategic issue management, literature review

INTRODUCTION

Organizations are frequently confronted with strategic issues through abrupt and unforeseen changes within their business environments (Laamanen, Maula, Kajanto, & Kunnas, 2017). Dealing with these strategic issues is essential for firms to ensure long-term survival and sustainable growth (Dean & Sharfman, 1993; Dutton & Jackson, 1987; Gilbert, 2002).

Over the past decades, research from several domains has generated interesting insights into the management of strategic issues. They have contributed to the field through employing a wide range of theoretical lenses, research questions as well as methodologies and empirical settings. Despite the well-developed state of knowledge in the field, several conflicting findings on the subject, lead to a continued keen scholarly interest and underline why it remains an important area of research: Depending on the school of thought, findings are inconsistent on the particular impact of opportunity and threat categorizations on organization. Furthermore, two differing theoretical lenses have been established to predict differing organizational responses in the organizations reaction to the respective issue categorization.

Some studies promote that opportunity categorization is advisable (Grégoire, Barr, & Shepherd, 2010; Sharma, 2000), whilst other research projects conclude that a threat categorization of organizations generates the superior response to strategic issues (Christensen, 2013; Christensen & Raynor, 2013; Gilbert, 2002, 2006). The former stream has demonstrated that threats can lead to aggressive commitment (Dutton & Jackson, 1987; Gilbert, 2006; Kahneman & Tversky, 1984) and can thereby induce inflexible rigidities in the organizational response (Staw, Sandelands, & Dutton, 1981). Opportunity categorization on the other hand, they argue, allows for creativity and flexibility in its problem resolution (Dutton, 1992; Gilbert, 2006). Depending on the employed theoretical lens, a categorized opportunity may lead to either to a decrease of risk (prospect theory) or a search for external solutions with a conscious increase of risk (threat-rigidity hypothesis) (Cameron, Whetten, & Kim, 1987; D'aveni, 1989; McKinley, 1993; Shimizu, 2007; Staw et al., 1981). Analogously, this is true for threat

categorization: Depending on the aforementioned school of thoughts, a categorized threat may lead to an increase of risk (prospect theory) or a query for internal solutions with a decrease of risk (threat-rigidity hypothesis). These conflicting findings have led to unclear guidance within strategic issue management for researchers and practitioners alike. In order to better understand the origin of this dissension, we thus review the diverse insights from strategic management, cognition and organizational behavior literature and integrate our findings into a comprehensive framework to create clearer guidance for future researchers.

Our analysis of the state of knowledge reveals that researchers have thus far mainly focused on the management of isolated strategic issues, employing an event-based perspective to strategic issue categorization, suggesting a limited scope. Only a few studies suggest a broader approach, considering the long-term implications of strategic issue management. Our review on the literature suggests that scholars might gain a deeper insight into the behavior of organization if the unit of analyses is shifted from treating each strategic issue as an independent event to treating them as interdependent bundles.

Based on a comprehensive review of four decades of research into strategic issue management we propose a framework integrating the state of knowledge in the field. Based on this framework, we suggest three future research areas, in which additional insights could contribute to a better understanding of the strategic issue management process. (1) Considering strategic issue categorization interrelation and thus incorporating past strategic issue categorization behavior into present strategic issue management; (2) shifting the focus from individual and isolated strategic issue analysis to an aggregated and temporal perspective to understand the cumulative impact of more than one strategic issue; (3) considering the unintentional organizational side-effects of strategic issue categorization. This study hence aims to provide a conceptual basis for consolidating the body of knowledge in the field of strategic issue categorization research as well as identify fruitful future research possibilities.

METHODOLOGY

To take stock of the current state of knowledge and point to potential future directions for research, we systematically reviewed the current body of research on strategic issue categorization by following a structured approach (Cropanzano, 2009; Short, 2009; Tranfield, Denyer, & Smart, 2003; Webster & Watson, 2002). The process of identifying the relevant studies for this review involved three steps. First, we identified all relevant journal publications outlets, amongst academic as well as practitioner-oriented journals. Quantitative citation analyses is most commonly used to assess journal relevancy (Tahai & Meyer, 1999). The *Journal Citation Report*, an analytical tool of the *Thomson Reuters* online database ISI Web of Knowledge depicts such an analysis. In order to not discriminate our results by publication outlet we chose to include all journal with an impact factor larger than 1.0. According to the latest journal citation report of 2016, this results in a total of 254 journals within the subject area of Management.

Second, through screening of the most prominent publications in the field we determined adequate search phrases in order to identify all relevant studies. Scholars over time have used a diverse set of terminologies when referring to strategic issue categorization and the overall management of and around strategic issues. For our search, we thus used several synonyms of `categorization`, including `framing` (Mittal & Ross, 1998), `interpretation` (Barr & Glynn, 2004), `diagnosis` (Dutton & Duncan, 1987; Dutton, Fahey, & Narayanan, 1983; Julian & Ofori-Dankwa, 2008) and `cognition` (Hahn, Preuss, Pinkse, & Figge, 2014). Using basic Boolean search operators such as “AND” and “OR”, all feasible combinations between the main search phrase “*Strategic Issue**” and the following supplementary search phrases were thus formed: *Threat**, *Opportunity**, *Categorization**, *Framing**, *Interpretation**, *Diagnosis**, *Cognition**, *Management** and *Selling**. We searched the ISI Web of Knowledge database as well as the EBSCOHost Business Source Premier, which both offer access to academic and praxis-oriented publications. As the state of research within the field of strategic issue

categorization has been evolving over several decades, we further applied no time restriction to our query. The included body of knowledge thus covers a time span of 37 years between the years 1980 and 2017. Our final query then revealed a total of 197 results.

Third, we manually screened the publications which we identified in our first steps and through a title and abstract screening excluded those articles which did not cover the topic at hand. This led to a remaining 104 articles identified as potentially relevant. The significant decrease of studies between the original query and the post title and abstract screening is mostly due to the application of the search terms within entirely differing contexts. Excluded studies, for instance, employed the terminology “opportunity” to reference a research opportunity within a literature stream. The discrepancy is thus largely explained by the broad and general nature of the terminology used within the strategic issue management literature.

Through a second and more thorough and in-depth screening round, in which all remaining papers were read, a total of 73 articles were determined as relevant and thus contribute to this study. To be included in this review, a study had to deal with strategic issues as well with their categorization. Through backward and forward search an additional five relevant articles were subsequently identified and included in the review.

This process finally led to a total of 78 articles, which were included in this review. Given the diverse and broad scope of the topic, the included studies were published in a diverse set of academic and practitioner journals. This variety also greatly contributed to our analysis and understanding of the literature. See table 2 of a full overview of the included articles as well as table 1 for an indication of the publication frequency of this field of research.

WHAT DO WE KNOW ABOUT STRATEGIC ISSUE CATEGORIZATION?

Ansoff (1980: 131) defines a strategic issue as “a forthcoming development, either inside or outside of the organization, which is likely to have an important impact on the ability of the enterprise to meet its objectives.” Studying the process of how organizations deal with such

changes to their external and internal environment has a long tradition in management research: Beginning in the early 1980`s, there was a surge of research observable on strategic issue categorization (Ansoff, 1980; Diffenbach, 1982; Dutton, 1988; Dutton et al., 1983; Dutton & Jackson, 1987). Figure 1 reveals that this surge in research and publications on strategic issue categorization continued into the 90`s. When analyzing the frequency analysis in table 1, however, we can observe that the share of these publications within the top-peer reviewed journals decreased from almost 100% with 15 of 16 publications in the 1980`s amongst the journals, to below 50% of 12 out of 25 publications in the 1990s`s.

Table 1 – Publication Frequency Analysis by Outlet and Year

Insert Table 1 about here

When depicting the publications per year within the field of research, it becomes apparent that no distinct patterns are observable in the time period reviewed. The topic started to become more widely acknowledged and researched after the highly referenced and cited publications of Dutton and Jackson in 1987 on the link between strategic issue categorization and organizational actions. Before this link was established, strategic issue categorization was typically solely analyzed from a cognition viewpoint. Afterwards, an increasing number of researchers concerned with organizational actions began to investigate the topic. With the start of the new millennium, however, we saw decrease of research within this field. The literature stream was only later revived in 2008 when researchers used the concept to explain how organizations should deal with strategic issues within the context of financial turmoil in the midst of the 2007 real-estate and later financial crisis.

Figure 1 – Publications per Year of Reviewed Studies

Insert Figure 1 about here

During our examination of the strategic issue categorization literature, we found four fundamental strands: (I) Research on the antecedents of strategic issue categorization, (II) studies on the cognitive process of strategic issue categorization, (III) research on organizational actions, organizational outcomes and performance implications of strategic issue categorization and (IV) findings on the multilevel contingencies of strategic issue categorization. Figure 2 summarizes the state of knowledge on strategic issue categorization. According to this depiction, we organized the discussion of our findings and thus next examine and summarize each strand of research.

Figure 2 – Strategic Issue Categorization Research – An Integrative Framework

Insert Figure 2 about here

Multilevel Antecedents of Strategic Issue Categorization

Managers are regularly confronted with more information that they can handle simultaneously (Hahn et al., 2014; Thomas, Clark, & Gioia, 1993). Focal managers must thus be selective in their conscious attention and subsequent interpretation of any issue they may be confronted with (Thomas et al., 1993). The process of searching for any potential issue which may be or become strategic, and hence important, to the focal organization is referred to as 'strategic issue scanning' (Aguilar, 1967; Thomas et al., 1993). The scanning process

fundamentally influences what types of strategic issues will be noticed by the organizations. Decision makers typically scan the environment according to how much information they consider to be necessary to reach a decision (Pfeffer & Gerald, 1978; Thomas et al., 1993). This might differ in regard to the emphasis on external or internal information, as well as on the amount of information the decision maker takes into account (Brønn & Brønn, 2002; Daft & Weick, 1984; Thomas et al., 1993).

These scanning activities of learning about trends and occurrences affecting the organization, is also a key role of any boundary spanner within firms and a crucial task of decision makers within organizations (Dutton et al., 1983). According to Hambrick (1981), it is the first and crucial step of organizations in adapting to its environment. Hambrick (1981, p. 299) thus defines the process as the “managerial activity of learning about events and trends in the organization’s environment”. While the initial approach of strategic issue scanning was characterized by implicit and unstructured processes (Dutton et al., 1983), during the further development of the strategic issue categorization literature, approaches became more formal and structured in nature through monitoring systems and environmental analyzing procedures (Brønn & Brønn, 2002). According to Babbar and Rai (1993, p.104) “most environmental scanning systems of business firms fall into one of the four phases: primitive, ad hoc, reactive, and proactive”

Strategic issue scanning have been primarily investigated along two central characteristics, the data source as well as the process related to the information acquisition process, i.e. the resource allocation within the scanning process (Daft & Weick, 1984). The source of the data refers to the origin of the issue and has been grouped along issues induced externally, internally, by personal or impersonal occurrences (Aguilar, 1967; Daft & Weick, 1984; Keegan, 1974). While the primary focus during the issue scanning process is often to look outwardly and scan the external environment for any upcoming issues which may become

strategic to the organization (Daft & Weick, 1984; El Sawy & Pauchant, 1988), Thomas et al. (1993) argues that the scanning process should have a greater focus on internal issue detection.

The procedures of data acquisition can vary greatly amongst organizations. The process can be conducted by humans or automated information gathering scanning systems (El Sawy & Pauchant, 1988). If conducted by humans, the process is more often executed by employees on a divisional rather than corporate level (El Sawy & Pauchant, 1988). The scope of the scanning activity as well the involvement is then affected by the managers' degree of goal restrictiveness as well as proactive or reactive behavior (Dutton & Ottensmeyer, 1987; El Sawy & Pauchant, 1988). The process also greatly depends on whether the focal actors are looking for any distinct information within their external or internal environments, or whether they are browsing for any potentially relevant issues (Hahn et al., 2014).

The strategic issue scanning activities are thus coined by 1) where the information is gathered from, 2) who is gathering the information and with which intent and 3) how proactive or reactive the query is conducted.

Understanding this strategic issue scanning process has hence received considerable attention in past research. Within this realm, scholars have identified a number of different influencing factors which coin the strategic issue scanning process. The process of identifying strategic issues is considered to be impacted by *the environment* such as competitor behavior and any market or regulatory developments, *organizational factors* which have their origin within the organization and *individual factors*, which impact the scanning process according to the individual attributes of the focal manager scanning the field.

Environment. Environmental factors critically influence how and if any potentially relevant issue is detected (Lant, Milliken, & Batra, 1992). As any discretionary issue does not necessarily affect the organization, it depends on several factors whether an issue within the environment surrounding the focal actors, becomes salient and ultimately `strategic`, according to the definition of Ansoff (1980). Issues originating within the external environment of the

organization can affect the strategic issue categorization depending on the *market* and *regulatory environment* as well as the *competitor behavior*. Issue emerging from changes within the market environment, can be induced by a number of differing events. El Sawy and Pauchant (1988) for instance studied the effect of technological changes as strategic issue origins. The process can also be affected by any regulatory or similar unfamiliar environmental events (Barr, 1998; Schneider & De Meyer, 1991). Competitive behavior has further shown to influence the strategic issue scanning process. According to Dutton, Ashford, and Wierba (1997), perceiving the external environment as particularly competitive resulting in high economic pressures and an induced urgency, leads to a higher likelihood of identifying issues which later on can be sold more successfully to higher hierarchies within the organization. Competitive posture resulting from competitive interaction within the environment also affects which issues are considered and later on how these strategic issues are perceived (Ginsberg & Venkatraman, 1992). Industry velocity, often induced by a highly competitive environment, further increases manager's attention and subsequently the scanning process. Nadkarni and Barr (2008) discovered that high industry velocity leads to focus and query for specific issues, while lower industry velocity moves the focus to more general issues within the environment.

Another impacting factor is the perceived uncertainty within the external environment. Dutton et al. (1983) show that a low degree of perceived issue comprehension as well as restricted information availability reduces the involvement within the issue identification process. Uncertainty of the environmental context and low perceived feasibility of potential issue resolution actions, correlates negatively with issue interest (Dutton, 1988).

Uncertain environmental conditions can, however, also lead to a more proactive approach with focal managers spending more time and resources in scanning their environment, in an attempt to resolve the uncertain state (Dutton & Ottensmeyer, 1987; Schneider & De Meyer, 1991).

Organization. Organizations employ differing techniques and procedures in order to obtain knowledge regarding all relevant issues surrounding them. The scanning activities can take more active forms, where the organizations is scanning their surroundings for answers to a specific questions or more passive forms, where they welcome information regarding any non-specific but relevant issues (Daft & Weick, 1984). Organizations which employ an active scanning technique may have special issue scanning departments within their organizations and may allocate considerable more resources to this task (Daft & Weick, 1984). More routine procedures in handling such emerging issues also means that managers within organizations that employ an active scanning format, often show a reduced bias about new issues, as they evaluate emerging issue more routinely and in many cases even according to set guidelines (Martins & Kambil, 1999). For active scanning departments, the group composition and heterogeneity (Bantel & Jackson, 1989; Hurst, Rush, & White, 1989), background demographics , employee turnover (Lyles & Mitroff, 1980) have also been found to have an effect on the scanning process. The scanning procedures of organizations are thus influenced by the general systems of information acquisition, the definition of task ownership and department size as well as the degree of information specialization and type (Huber & Daft, 1987; Thomas, Shankster, & Mathieu, 1994).

The cognitive frame further impacts how organizations scan their surroundings for relevant issues. The cognitive frame of an organization is often also referred to the company`s frame of reference (El Sawy & Pauchant, 1988). Studies show that specific organizational `triggers` which may shift the or stimulate certain templates within the organizations as well as organizational `twitches`, which result from tensions originating from triggered templates impacts whether organizations scan their environment actively or passively (El Sawy & Pauchant, 1988). Changes in such organizational templates, triggers and twitches have shown the correlate with adjustments in the scanning processes. Dutton (1988) and Milliken (1990) have further shown that a high perceived effectiveness of an organization results in a decrease

of doubt that any issue may seriously threaten their organization. This can lead to a more objective and active scanning procedure. The competitive posture of the organization has also been shown to affect the scanning process, as a more serious competitive posture steers the direction of the scanning activities outwardly (Ginsberg & Venkatraman, 1992).

Individual. The organization's scanning activities are not only affected by environmental as well as internal, organizational factors but also considerably influenced by the manager's individual preferences and backgrounds. The working background of the focal manager often impacts whether his current organizations employs active or passive scanning procedures, depending on which type the manager was exposed to in his/her earlier positions (Daft & Weick, 1984).

Managers who have previously worked under a proactive scanning regime, might now prefer more flexibility in their scanning approach and design their processes accordingly. This may for instance include more intuition based scanning approaches rather than stringent, established processes (Daft & Weick, 1984). Similar findings have been made on the direction of the scanning techniques. The past exposures of the manager impacts whether he/she now chooses an internally or more externally focussed scanning approach (Hahn et al., 2014).

Cognitive Perspective - Strategic Issue Categorization

The categorization of events was initially studied to understand the cognitive processes employed in conceptualizing natural objects and events (Dutton & Jackson, 1987; Mervis & Rosch, 1981; Rosch, 1975; Rosch & Mervis, 1975). Much like these earlier applications where the description of the environment was proposed to influence the information processing and resulting behavior of the individuals, the theory has been applied to understand how the labelling of strategic issues by decision makers affects their organization and the reaction to the disturbance (Dutton & Jackson, 1987). Numerous scholars have successfully shown, that decision maker's perceptions and interpretations of the environment influence the action of the

organization (D. C. Hambrick & P. A. Mason, 1984; Starbuck & Milliken, 1988; Thomas et al., 1993)

Studies with a cognitive focus within the strategic issue literature have analyzed the categorization of such strategic issues as either threats or opportunities (Dutton, Ashford, O'Neill, & Lawrence, 2001; Dutton & Jackson, 1987; Dutton & Ottensmeyer, 1987; Jackson & Dutton, 1988). This is of crucial importance, since the categorization as an 'opportunity' or as a 'threat' affects the measures, managers adopt to respond to it. The underlying motivations and cognitions of the decision maker have a systematic effect on how the issue is processed and what type of reaction is chosen (Dutton & Jackson, 1987) - and ultimately impact the performance of organizations (Thomas et al., 1993).

Some scholars have argued that opportunity categorization is advisable (Grégoire et al., 2010; Sharma, 2000), but many studies in the field have also concluded that a threat categorization of organizations generates the superior response to strategic issues (Christensen, 2013; Christensen & Raynor, 2013; Gilbert, 2002, 2006). An opportunity is associated with a positive state in which gain is probable and over which the focal actor has a reasonable amount of control (Dutton & Jackson, 1987), whereas a threat implies a negative condition in which loss is likely and over which one assumes little control (Dutton & Jackson, 1987). Threat framing has been demonstrated to lead to aggressive commitment (Dutton & Jackson, 1987; Gilbert, 2006; Kahneman & Tversky, 1984) and can thereby induce inflexible rigidities in the organizational response (Staw et al., 1981). Opportunity categorization, on the contrary, allows for creativity and flexibility in its problem resolution, but lacks the urgency to induce organizational commitment (Dutton, 1992; Gilbert, 2006). As a result of this paradox, Gilbert (2002, 2006) recommends a sequential application of both frames.

While the findings are inconclusive in regard to which of the two categorization types is more advisable to respond to strategic issues, scholars have shown that most organizations tend to have a threat bias within their issue categorization (Jackson & Dutton, 1988). Unless

there is strong evidence to do otherwise, many decision makers must be convinced of the presence of opportunities (Jackson & Dutton, 1988). This tendency to categorize events as threats can be traced back to Cyert & March (1963) who describe decision makers functioning on the basis of problemistic search. Research on this tendency are, however, thus far solely based on cross-sectional data where a majority of surveyed executives identified a certain single strategic issue as a threat instead of an opportunity (Jackson & Dutton, 1988; Schneider & De Meyer, 1991). These findings, however, do not deliver any insight if this threat bias holds up over time or if its magnitude is subject to change over time. Gilbert (2002, 2006) was the first to suggest a dynamic perspective by analyzing one strategic issue over time and suggesting that an alteration from threat to opportunity categorization is advisable to take advantage of both benefits.

Behavioral Perspective - Consequences of Strategic Issue Categorization

A strategic issue may influence the behavior of an organization and the individuals in that organization in two main ways. One, the issue itself will induce certain emotions such as satisfaction or dissatisfaction, stress or happiness which will lead to an adequate reaction. This may also include a conscious non-reaction. The second way a strategic issue influences the organization is through the prominent categorization of the strategic issue as either a threat or an opportunity and the associated communication about this categorization. Dutton and Jackson (1987) revealed the link between categorization and organizational actions, by showing that managers also influence the categorization of the issue, by making certain “issue attributes” salient.

The focus of behavioral research has thus been to understand how organizations choose to react to the strategic issue at hand (Ansoff, 1980; Dutton & Jackson, 1987; Schneider & De Meyer, 1991). A strategic issue may influence the behavior of an organization and the individuals in that organization in several ways. Dutton and Jackson (1987) suggest a process

model linking the strategic issue to organizational actions by integrating psychology research on how cognitive processes influence behavior (Dutton & Jackson, 1987). Cyert and March (1963) further show the impact of the focal actor initially confronted with the strategic issue. Ansoff (1980) was the first to propose the idea of a strategic issue management system, with which he, amongst other features, developed a systematic procedure to ensure a fast and proper response to strategic issues. By doing so, Ansoff also defined the circumstances in which the response to a strategic issue should lie outside of the regular strategic planning process (Ansoff, 1980).

Risk-taking behavior. A key differentiating factor of organizations' response to issues is their risk-taking behavior. Responses to such unexpected issues are usually met with different levels of risk-taking, that is either determined by the organizational preference (Covin & Slevin, 1991; D. Miller, 1983) or the individual manager's traits or pay-off function (Weber, Blais, & Betz, 2002; Weber & Milliman, 1997). The degree of risk inherent in the organization's response to the strategic issue highly depends on how a strategic issue is perceived (Kahneman & Tversky, 1979; Shimizu, 2007; Staw et al., 1981; Tversky & Kahneman, 1992). Tversky and Kahnemann predict a so-called 4-fold pattern of risk behavior: It suggests low risk for gains and high risk for losses of high probability and high risk for gains and low risk for losses of low probability. In essence, the response critically depends on both, gains vs. losses and the probability of these gains and losses (Johnson & Tversky, 1983; Kahneman & Tversky, 1979, 1984; Tversky & Kahneman, 1975, 1985, 1986, 1992). Opposing studies within the reviewed literature on the other hand predict risk-aversion and a state of rigidity when faced with perceived threats and losses of high probability. These studies conclude that organizations might search for external solutions with a conscious increase of risk after having identified a threat (Cameron et al., 1987; Gilbert, 2005; McKinley, 1993; Shimizu, 2007; Staw et al., 1981) (Cameron et al., 1987; D'aveni, 1989; McKinley, 1993; Shimizu, 2007; Staw et al., 1981). Studies on an organizational level have further concluded that negative affect as a result of a

threat categorization induces a much higher propensity towards risk taking (Mano, 1992, 1994; Mittal & Ross, 1998). Bad mood can further increase this level of risk taking and ultimately decrease performance (Jordan, Lawrence, & Troth, 2006). Research on the effect of the affective state of individuals on risk taking behavior has shown, that compared to a neutral mood, when experience positive, emotions resulting from opportunities, people tend to become more risk averse (Mano, 1994; Mittal & Ross, 1998).

Creativity & Information Query. Several studies have demonstrated that a threat categorization can lead to rather aggressive and short-sided commitment (Dutton & Jackson, 1987; Gilbert, 2006; Kahneman & Tversky, 1984). Some studies have thus proposed that organizations have difficulties to find a long-term and sustainable response when faced with perceived threats (Shimizu, 2007). Opportunity categorization on the other hand allows for creativity and flexibility in its problem resolution, but lacks the urgency to induce organizational commitment (Dutton, 1992; Gilbert, 2006). Individuals tend to further constrain the amount of information they consider in order to find a fitting resolution for the problem at hand (Billings, Milburn, & Schaalman, 1980; Cameron et al., 1987; Staw et al., 1981). As a result of this paradox, Gilbert (2002, 2006) recommends a sequential application of both frames. Organizations faced with perceived opportunities often use a more open information query process to find a resolution and further in show a more neutral assessment of the situation (Nutt, 1984). Nutt (1984) concluded that a perceived opportunity leads to a more open information search process and more overt assessments of the situation. Diverse information may lead to overcoming threat rigidity effects, and thus be empowering and lead to a more proactive view of strategic issues (Anderson & Nichols, 2007).

Behavioral Rigidity. Reviewed studies contributing to the threat-rigidity theory propose that organizations often experience difficulties finding a fitting response when faced with perceived threats (Shimizu, 2007). This is explained by an induced rigidity from the exposure to the focal threat. This passive behavior in the face of adversity lies at the core of the threat-

rigidity theory (Cameron et al., 1987; D'aveni, 1989; McKinley, 1993; Shimizu, 2007; Staw et al., 1981) and induces inflexible rigidities in the organizational response (Staw, Sandelands, & Dutton, 1981). The rigidity then often leads to passive and re-active behavior, such as a reliance in faith and hope (McCrae, 1984; Shimizu, 2007; Staw et al., 1981). As individuals show a strong inclination for stability in their beliefs and attitudes (Cialdini, Trost, & Newsom, 1995; Heider, 1958; W. K. Smith & Lewis, 2011) as well as actions (Festinger, 1957), when faced with adversity they often turn to denial or repression (Vince & Broussine, 1996) to avoid the potential instability. This can cause a rigidity in the behavior of the individuals and lead to a greater likelihood for inactions rather than actions (K. K. Smith & Berg, 1987). Organizational dynamics then often reinforce this individual behavior (Eisenhardt & Martin, 2000; Gilbert, 2005), as the actors attempt to decrease the discomfort and frustration. Their defenses and inactions can eventually cause the opposite effect and worsen the underlying complications (Lewis, 2000).

Directionality. Within organizations, individuals can create momentum into a particular direction depending on how they classify the strategic issue. By doing so, i.e. directing all threats to one group and all opportunities to another, they are able to trigger differing behavioral routines resulting in more outwardly or more inwardly reactions (Ansoff, 1980; Cyert & March, 1963). Opportunity categorization for instance tends to lead to much more outwardly focused and visible reactions, including competitor attacks, official corporate communication or marketing campaigns (Grégoire et al., 2010; Staw, 1991; Staw et al., 1981). When faced with threats, however, organizations often select inwardly focused actions such as personal changes, team meetings or changes to the organizational structures (Dutton & Jackson, 1987; Shimizu, 2007; Staw et al., 1981).

Multilevel Contingencies

Ante Categorization. Strategic issues differ along numerous characteristics (Thomas et al., 1993). The perception and detection of these issue characteristics and their subsequent salience to the decision maker or organization significantly affects how the focal strategic issue will be categorized at a later stage of the issue categorization process. Although the characteristics can take a number of different formats, categorized threats are typically associated with issues characteristics such as negative, uncontrollable, and involving potential loss and conversely, opportunities are most often characterized as positive, controllable, and involving potential gain (Dutton et al., 1983; Dutton & Jackson, 1987; Dutton & Ottensmeyer, 1987). Within the reviewed literature, scholars have identified several factors on the environmental, organizational and individual level, which affect the perception and salience of these issue characteristics and thus significantly influence the subsequent categorization.

Environment. The external environment surrounding the strategic issues and the organization does not only affect whether or not any issue emerges on the firms radar, it also influences which characteristics of the issue becomes salient to the organization. The greater the geographic distance between the organization and the noted strategic issue, for instance, the higher the likelihood the issue will be perceived as positive and hence as an opportunity (Barreto & Patient, 2013).

Organization. Which attributes of an emerging issue an organization perceives to be relevant and thus impacts the cognitive categorization process, heavily depends on the organizational identity, the firms shared beliefs, image and culture (Bansal, 2003; Dutton & Dukerich, 1991; Dutton & Duncan, 1987). A greater diversity in beliefs and opinions within organizations has for instance been shown to lead a likelier interpretation of strategic issues as feasible (Dutton & Duncan, 1987). Firms which promote a culture of ‘uncertainty avoidance’ have for instance been shown to assess the controllability of issues more than other issue characteristics (Barr & Glynn, 2004). How the organizational identity is perceived internally,

by the employees of the firm, also affects if certain issues characteristics become more salient than others (Dutton & Dukerich, 1991). The more managers believe in the company commitment to issues such as environmental initiatives, the higher the likelihood will be that related issues will be perceived as positive for the firm and will thus be viewed more opportunistic (Sharma, 2000).

Next to firm culture, previous research has also identified the strategic context or `strategy patterns` of organizations to impact the issue characteristics perceptions (Thomas & McDaniel, 1990). Within this research effort, scholars have differentiated between so called domain defenders and domain offenders or prospectors (Chattopadhyay, Glick, & Huber, 2001; Miles & Cameron, 1982; Thomas & McDaniel, 1990). Organizations which employ an offensive domain strategy often perceive issues as more controllable than firms with a defensive domain pattern (Thomas & McDaniel, 1990), they consequently also categorize more strategic issues as opportunities than threats (Schneider & De Meyer, 1991).

Individual. Individual cognitive frames and personal attributes are often the reason for why similar situation are perceived differently by several people (Jackson & Schuler, 1985; Ramaprasad & Mitroff, 1984). How salient individuals experience the characteristics of different strategic issues depends on their past experiences and educational background (Donald C Hambrick & Phyllis A Mason, 1984), their functional and organizational background (Bantel & Jackson, 1989; Dearborn & Simon, 1958; Fredrickson, 1985), personal values and ethics, their knowledge and skills as well as cognitive frames and other biases. Based on these past experiences and cognitive frames, individuals form categories in order to organize and understand the accessed information. As individual`s interpretations of events and the subsequent emphasis on certain issue characteristics may lead to perceptual differences between people, the process is naturally liable to contain objective errors (Thomas et al., 1994). The individual cultural background also explains how similar or same strategic issues are interpreted differently. Latin Europeans for instance have a tendency to see the negative aspects of issues

over the positive ones and consequently interpret more threats than opportunities (Schneider & De Meyer, 1991).

Post categorization.

Strategic Issue Selling. After the respective strategic issues have been categorized as either threat or opportunity, the categorization and the issue itself often needs to be communicated to either the organization or upper management. This process is referred to as 'strategic issue selling', a process which affects subsequent actions. Whether any categorized issues is 'sold' to the upper management by a confronted middle manager is also influenced by the categorization itself. When issues are categorized as threats and perceived as particularly uncertain and urgent the likelihood of selling the issue to top management increases (Dutton & Ashford, 1993). Dutton and Ashford (1993) firstly established the issue-selling framework to gain a better understanding the different conditions for the issue selling process as well as issue selling frequency and top management attention. The selling process itself is shaped by internal, external and individual factors.

Internal organizational processes greatly impact how active or passive middle managers engage in issue-selling practices. Depending on what the hierarchical, management structures and reporting or communication practices are within organization, influences the managers' willingness to shape the firms reaction to the strategic issue at hand. This willingness is greatly impacted by whether or not the focal individuals perceive the internal environment and current incentive structures as favorable or unfavorable (Dutton et al., 1997; Dutton, Ashford, Lawrence, & Miner-Rubino, 2002; Sonenshein, DeCelles, & Dutton, 2014). Internal structures in which superiors encourage open communication and are willing to listen and subsequently support their employees are usually perceived as more favorable. If, in turn, issue sellers need to fear negative repercussions of transmitting critical information, the unfavorable internal environment leads to fewer issue selling or less involvement in the shaping of the organizational response (Dutton et al., 1997). External environmental conditions have also shown to influence

the degree of issue selling within organizations. Within highly competitive and dynamics external conditions where the firm may face greater economic pressures, middle managers often perceive the context more favorable for selling their respective issues to other members of the organization and thereby influence the reaction to them (Dutton et al., 1997).

From an individual perspective, own political motivations, individual goals and incentives and internal credibility affects how and if categorized strategic issues are sold to top managers or the organization as whole. Individual risk and reward calculations often drive this process. If for instance, issues are being dealt with, which disagree with the firm's or management's values or the middle manager has little faith in the success of the issue selling, often the process is not initiated by the individual who came in contact with the issue initially (Dutton et al., 1997; Dutton et al., 2001). Should the issue, on the other hand, be of particular individual interest and the upside is bigger for the middle manager than the downside, additional risk and effort is often accepted in order to shape the subsequent issue reaction strategy (Dutton & Ashford, 1993). Personal relationships between the issue seller and the issue buyer also fosters the selling of strategic issues (Ashford, Rothbard, Piderit, & Dutton, 1998; Sonenshein et al., 2014). The success of the issue selling process, meaning whether or not the individual who was initially exposed to the strategic issue is successful in promoting his categorization of the issue at hand and thus influence any subsequent steps, has also been shown to depend on the manner in which the issue is sold. When issues are presented to upper management in a supportive manner, the receiving manner are more likely to listen and trust their judgement. Should the issue be presented in a challenging or threatening voice, loyalty and trust is questioned (Burris, 2012).

Strategic Issue Sensegiving. If the strategic issues selling process was successful, the receiving party needs to gather support from key stakeholders to proceed with any reactive actions, this process is referred to as 'strategic issue sensegiving' (Gioia & Chittipeddi, 1991; Maitlis, 2005; Narayanan, Zane, & Kemmerer, 2011; Sonenshein, 2006; Tetlock, 2000). The

respective decision makers need to gather support internally and externally to promote their planned response to the confronted issue. This support can be gained through explanatory meetings in which they convey their own interpretation of the situation or even through casual encounters or gossip (Gioia & Chittipeddi, 1991). Before any action is decided upon and will be taken, all stakeholders who were informed about the issue and the proposed reactions will make sense of the information themselves and only then commit to or suggest a specific action in response to the focal issue (Gioia & Chittipeddi, 1991). This entire process is mainly influenced by individual as well as internal factors.

Individually, the hierarchical status and power of the focal actor impacts how many and which type of issues manager focus on giving sense to (Corner, Kinicki, & Keats, 1994). Furthermore, if a manager feels personally threatened within an organization, he or she will spend less time giving sense towards threats. The manager will subsequently focus more on giving sense to potential opportunities (Bartunek, Krim, Necochea, & Humphries, 1999; Maitlis, 2005). Internally, the sense-giving process has been shown to be impacted by power relationships, language as well as organizational focus (Narayanan et al., 2011; Sonenshein, 2006).

A FUTURE RESEARCH PROGRAM ON THE INTERRELATION OF STRATEGIC ISSUE CATEGORIZATION

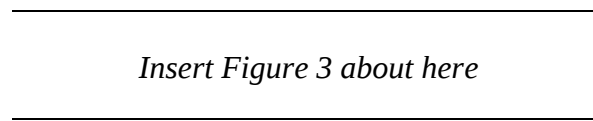
Our review of the extant literature revealed that the vast majority of research within the stream of strategic issue categorization focuses on individual isolated strategic issues (Bansal, 2003; Dutton et al., 1983; Dutton & Jackson, 1987; El Sawy & Pauchant, 1988; K. D. Miller & Lin, 2015; Schneider & De Meyer, 1991). While these findings offer us guidance on how to deal with such individual strategic issues and how their categorization affects the organization, the existing literature almost completely neglects that the preceding categorization processes

and outcomes impact the organization beyond the duration of the strategic issue and may hence also impact how organizational members will construe and react to the next strategic issue.

These findings are contrary to practical evidence that organizations are often impacted by their strategic issue categorization decisions for long period of times. In many cases initial strategic issue categorization significantly impacts how future strategic issues are dealt with. Findings within leadership research has further concluded that a continuous confrontation of employees with threats leads to a decrease of organizational energy which can significantly affect the organization and its performance (Bruch & Ghoshal, 2003; Bruch, Ghoshal, Ries, & Ries, 2004; Bruch & Vogel, 2006). In order to not overstrain their employees, decision makers need to be aware that their current categorization of a strategic issue enters an aggregated equation of the firm, which will additionally affect the organization.

Surprisingly, previous research has not adequately addressed how 1) previous strategic issue categorization affects current strategic issue management and 2) how current strategic issue management could incorporate how today's strategic issue categorization might affect future issue handling. To assist decision makers dealing with strategic issue within organizations, we need to better understand the interrelation of strategic issues over time. We thus aim to address these important considerations within our future research program and thereby reflect upon important literature gaps and corresponding interesting and fruitful research questions to deepen our knowledge within this field of research. The next section will thus discuss the important literature gaps within strategic issue categorization literature. Figure 3 depicts strategic issue categorization as a process. The following sections underline the importance of considering strategic issue categorizations as an interdependent process, considering the pre-strategic issue categorization, the strategic issue categorization and the post-strategic issue categorization phase for a focal strategic issue as illustrated in Figure 3.

Figure 3 –Strategic Issue Categorization as a Process



Pre-Strategic Issue Categorization Phase

Especially the issue screening, categorization and issue selling process (Dutton & Ashford, 1993; Dutton et al., 2001; Gioia & Chittipeddi, 1991; Maitlis, 2005; Sonenshein, 2006) within the issue categorization process will benefit from a consideration of past categorization behavior. Research has shown that managers are often considerably more sensitive to emerging signs linked to threats than to those linked to opportunities (Jackson & Dutton, 1988). This may also be due to flaws in individual reward systems of organizations, as people get rewarded more for preventing the occurrence of loss in the face of a threat, as opposed to achieving a gain in the face of an opportunity (Kahneman & Tversky, 1979). Thus, in order to be able to filter out this threat bias within the strategic issue screening process, organizations need to consider and be aware of their past issue categorizations even before identifying a concrete issue.

Considering Previous Strategic Issue Categorization. Although for analytic purposes it is convenient to treat strategic issue as isolated and independent events, in reality past strategic issues often influence the organization simply because the same organizational members are involved. Organizational members will not entirely forget how past issues have been framed and how this affected them. Following the portfolio theory for instance (Elton, Gruber, Brown, & Goetzmann, 2009; Sharpe, 1970) a product or service is not only included into a firms portfolio based on its own merit but also by considering how it fits in relation to all already offered products and services and the overall diversification of the firm. Analogously, we believe that strategic issue diagnosis should neither solely be understood by studying how firms

deal with isolated, individual issues. Leadership research has furthermore advocated, that a strong imbalance of threats to opportunities in favor of threats can lead to decline of organizational energy amongst the employees (Bruch & Ghoshal, 2003; Bruch et al., 2004; Bruch & Vogel, 2006). Firms hence have an incentive to, if possible, avoid a continuous threat categorization.

A consideration of previously categorized strategic issues has thus far been neglected. As a result, the current body of knowledge is limited in several ways. Our analysis reveals that the main foci of the scholars in the field have been individual components of the strategic issue categorization process for the consideration of discrete strategic issues. We believe that the highly fragmented nature of the current findings can partially be explained by the omitted influencing factor: past categorization. Through extending the categorization process by this parameter, we see the potential for more uniform future findings regarding categorization recommendations.

Within the scope of the current state of knowledge, the categorization itself is affected by the cognitive perception of the decision maker, any political motivations as well as internal and/or external contingencies. Given this research expansion, decision makers should consider how any new opportunity or threat may affect the organization, given the past categorization behavior of the organizations.

Strategic Issue Categorization Phase

Individual vs. Aggregated Unit of Analysis. In order to understand how past categorizations impact the organizations and which retrospective timeframe should be considered, additional research on the entirety of the issue categorizations of one organization over a longer period of time is necessary. Whilst we know from leadership research that a confrontation of employees with threats is not advisable (Bruch, 2003; Bruch & Ghoshal, 2003; Bruch et al., 2004; Bruch & Vogel, 2006; Bruch, Vogel, & Krummacker, 2006; Hinterhuber &

Krauthammer, 2005; Steinle, 1978, 2015), we do not know how this applies to strategic issue categorization and further how multiple and sequential threat categorization affects employees and the organization. We furthermore do not know what percentage of all strategic issues should be opportunities or threats as well as what time-period is sensible to consider. Some findings suggest that a slight tendency to categorize more threats than opportunities is advisable for certain issue types (Christensen, 2013), but we do not know how big this tendency should be, in which direction, and calculated for which period of time. Hence, studying in detail the temporal sequence strategic issue categorization would be able to make significant new contribution to the literature.

Post-Strategic Issue Categorization Phase

We further lack insights into how repeated issue confrontations within an organization lead to specific categorization patterns or impact performance. Findings in leadership research have shown that a continuous confrontation of employees with threats leads to a decrease of organizational energy which can significantly affect the organization and its performance (Bruch, 2003; Bruch & Ghoshal, 2003; Bruch et al., 2004; Bruch & Vogel, 2006; Bruch et al., 2006; Steinle, 1978, 2015)

Conflicting Findings

Our systematic review of the strategic issue categorization process also enables future scholars to focus their research efforts on pathways within the process that appear understudied or any conflicting findings which do not suit our framework. For instance, based on our findings we have identified the need to 1) expand research efforts on the influencing factors of the scanning process and 2) understand how any contingent factors specifically affect the different steps within the model. Gaining a better understanding of this full picture we can then easier determine where exactly the consideration of the organizations past issue categorization comes into play.

Our review has further exposed, that despite the research efforts on the individual issue scenarios, there is still no clear answer to the question whether opportunity or threat categorization is superior in terms of organizational performance and outcomes. Scholars have argued that opportunity categorization is superior (Grégoire et al., 2010; Sharma, 2000), the more prominent research efforts in the field have concluded that a threat categorization of organizations generates the most successful responses to strategic issues (Christensen, 2013; Christensen & Raynor, 2013; Gilbert, 2002, 2006). Threat diagnosis is proven to lead to aggressive commitment (Dutton & Jackson, 1987; Gilbert, 2006; Kahneman & Tversky, 1984) but can also induce inflexible rigidities in the organizational response (Staw et al., 1981). Opportunity categorization on the other hand allows for creativity and flexibility in its problem resolution, but lacks the urgency to induce organizational commitment (Dutton, 1992; Gilbert, 2006). Depending on the school of thought a categorized opportunity may lead to either to a decrease of risk (prospect theory) or a search for external solutions with a conscious increase of risk (threat-rigidity hypothesis) (Cameron et al., 1987; D'aveni, 1989; McKinley, 1993; Shimizu, 2007; Staw et al., 1981). Analogously, this is true for threat categorization: Depending on the aforementioned school of thoughts, a categorized threat may lead to an increase of risk (prospect theory) or a query for internal solutions with a decrease of risk (threat-rigidity hypothesis). This theoretical paradox can only be solved by thoroughly investigating the theoretical foundations of strategic issue categorization on an aggregated level.

Another critical area of investigation is to understand if any negative or positive effects of continuous one-sided issue categorization are merely experienced in the working groups/teams that are directly affected by the issue, or by the whole organization. If they are only experienced locally, another ally of future research would be to investigate if the decision makers then also only consider past issue categorization that were conducted within this firm unit.

DISCUSSION AND CONCLUSION

Finding the correct response to change is a central concern in management research as it is essential for firms to ensure long-term survival, competitive advantage and sustainable growth (Dutton & Jackson, 1987; Gilbert, 2002). The strategy literature has put particular attention on strategic issues, due to their importance to the overall success of the firm (Ansoff, 1980; Dean & Sharfman, 1993; Dutton & Jackson, 1987). However, the literature on strategic issue categorization is broad and fragmented in terms of publication outlet, context, methodological rigor as well as findings. Management scholars have studied the antecedents of strategic issue categorization, the cognitive process of strategic issue categorization as well as the impact of the categorization on the organization (Ansoff, 1980; Barr & Glynn, 2004; Chattopadhyay et al., 2001; Diffenbach, 1982; Dutton et al., 1983; Dutton & Jackson, 1987; Dutton & Ottensmeyer, 1987; Grégoire et al., 2010; Sharma, 2000).

Our conclusion from reviewing the relevant contributions to this field are twofold: First, the majority of publications consider the categorization process a binary decision between threat and opportunity. Scholars early on in the literature have advocated that either a sole threat or sole opportunity categorization for all issues is most appropriate (Christensen, 2013; Christensen & Raynor, 2013; Dutton & Jackson, 1987; Grégoire et al., 2010; Sharma, 2000). Scholars within the stream have thus mainly focused on the analysis of individual isolated strategic issues (Bansal, 2003; Dutton et al., 1983; Dutton & Jackson, 1987; El Sawy & Pauchant, 1988; K. D. Miller & Lin, 2015; Schneider & De Meyer, 1991). Based on this analysis a categorization as either threat or opportunity was deemed adequate (Christensen, 2013; Christensen & Raynor, 2013; Dutton & Jackson, 1987; Grégoire et al., 2010; Sharma, 2000). Such a limitation in scope can be misleading, as it suggest that organizations view any strategic issue entirely independent from any previous or subsequent strategic issue

Examples from practice would suggest otherwise: The European Union's initial introduction of the mandatory emission standards for new passenger vehicles in 2009 poses as

only one fitting example. The European Union commission announced the aim of enforcing an emission of no more than 130g/km for the fleet average of all manufacturers by 2015 (ICCT, 2014). Such a strategic issue could potentially affect the entire automotive industry. Independent of how organizations categorized the strategic issue back in 2009, the implications of this legislative decision still affect the decisions of European automotive manufacturers until today. Many subsequent strategic issues and their meaning for the focal organizations were affected by how that strategic issue was initially dealt with.

We thus believe, in order to truly understand what drives strategic issue categorization behavior and if the magnitude of the threat bias identified by cross-sectional research is subject to change over time, we must investigate this phenomenon longitudinally. However, only a few publications consider a more contingent perspective on the topic: Gilbert (2002, 2006) recommends a sequential application of both frames. The author concludes that the most successful mode is to induce urgency and organizational commitment through threat categorization, while allowing for creativity and flexibility in the implementation of the issue resolution, by switching to an opportunity categorization. Julian and Ofori-Dankwa (2008) on the other hand propose a more flexible approach, interweaving the opportunity/threat and the feasibility/urgency framework rather than insisting that manager should start with threat framing and then move to an opportunity framing.

Furthermore, the literature almost completely disregards the cumulative impact of handling strategic issues within any one organizations. Research on organizational energy for instance has shown that a continuous confrontation of employees with threats leads to a decrease of organizational energy which in turn significantly affects the organization (Bruch & Ghoshal, 2003; Bruch et al., 2004; Bruch & Vogel, 2006). Thus, firms need to be aware of their past strategic issue categorization or overall issue categorization tendency in order to avoid an overstraining of their organization.

TABLES AND FIGURES

Table 1 – Publication Frequency Analysis by Outlet and Year

Frequency Analysis of Relevant Strategic Issue Categorization Literature by Year and Source of Publication																			
Year	Top 25 academic management journals ranked by impact factor (2016)																		Total
	A O M A	A R M	J P O B	A I J Q	M I S T	J I S M	J I S R	J I S M	J I S M	A A O M	A A O M	A A O M	A A O M	A A O M	A A O M	A A O M	A A O M	A A O M	
2017																			1
2016			1																1
2015										1									1
2014		1		1														1	3
2013																			1
2012																			
2011																			2
2010																			2
2009																			4
2008																			2
2007																			2
2006		2																	2
2005				1															1
2004																			1
2003																			1
2002																			2
2001				2															2
2000		1	1																2
1990-1999	1		5							1				4	1				12
1980-1989	4		1							3				7					15
Total 1980- 2017	8	1	12							1	4			15	1	1			43
Total in all reviewed journals																			78

Note: AOMA = Academy of Management Annals; AMR = Academy of Management Review; JoM = Journal of Marketing; AROPOB = Annual Review of Organizational Psychology and Organization Behavior; AMJ= Academy of Management Journal; MISQ = Management Information Systems Quarterly; JIIT= Journal of Information Technology; JIBS= Journal of International Business Studies; JSCM= Journal of Supply Chain Management; IJMR= International Journal of Management Review; JOM= Journal of Operations Management; AMP= Academy of Management Perspectives; ASQ= Administrative Science Quarterly; ORM= Organizational Research Methods; TM= Tourism Management; RP= Research Policy; SMJ= Strategic Management Journal; PP=Personnel Psychology; JAP= Journal of Applied Psychology; SCMI = Supply Chain Management- An International Journal; IJPM= International Journal of Project Management; OIJMS= Omega International Journal of Management Science; JOMS = Journal of Management Studies; OE= Organization & Environment; JPIM= Journal of Product Innovation Management

Table 2 – Overview of reviewed articles

Author(s) (year)	Research Focus	Theory	Method	Key findings
Agarwal & Helfat (2009)	Antecedents- Issue Scanning (I)	No explicit theory	Conceptual study	Strategic renewal has not only an impact on the involved organization but also for entire economies.
Amason & Mooney (2008)	Categorization- Outcomes/ Performance (I-II)	Prospect Theory	Empirical study: Survey, n= 51 CEOs and 45 top management teams	Performance is associated with framing issues as threats rather than opportunities. Performance is associated with less comprehensiveness in decision-making
Anderson & Nichols (2007)	Issue Scanning - Issue Categorization (I-II)		Empirical study: Longitudinal research design, multiple and process-oriented measures, n=52 executive MBA students and 25 Masters of Technology students, in 2000	Time spent searching for information leads to changes towards seeing the issue as more of a threat, the diversity of information found leads to changes towards seeing it as less of a threat. No effect of information on opportunity perception
Ansoff (1980)	Antecedent - Categorization - Outcome (I-II-III)	No explicit theory	Conceptual study	Ansoff suggests a framework (Strategic Issue Management System (SIM)) which enables firms to recognize and handle strategic issues almost at real. SIM includes the stages identification (internal/external events), labelling (opportunities/threats/weaknesses/strengths), diagnosing (impact/urgency), assigning and action (immediate/delayed)
Babbar & Rai (1993)	Antecedents- Issue Scanning (I)	No explicit theory (competitive intelligence, international business environment)	Conceptual study	Conceptualise your environment carefully, build in strategic flexibility, focus on consumer-based scanning. Learn to learn, assume an aggressive posture in seeking opportunities, instill a culture for continuous improvement, institutionalize involvement and open channels for communication
Bansal (2003)	Antecedent - Categorization - Outcome (I-II-III)	No explicit theory	Empirical study: Qualitative (observation, informal discussion, documents, interviews), n= 2 companies; 10 & 13 senior manager, between 1995 to 1996	The author states that both congruence with organizational values and individual concerns are required for organizational responses. These two factors impact organizational actions in terms of initiation, scope, scale, and speed.
Barr & Glynn (2004)	Categorization (II)	No explicit theory (link culture and strategy)	Empirical study: Questionnaire, n= 276 American and international respondents	Perceptions of controllability in discriminating threat and opportunity exhibited cultural variations in accord with the value the culture placed on uncertainty avoidance.
Barreto & Patient (2013)	Issue Scanning - Issue Categorization (I-II)	Attention-based view; Strategic issue diagnosis theory; Construal level	Empirical study: Quantitative questionnaires, n= 116 middle managers	1) Divergent desirability and feasibility consideration cause variation in attention to issues labelled as opportunities or threats. 2) The article elaborate shock distance and capability perception as attentional drivers.
Barreto (2011)	Categorization- Outcomes/ Performance (II-III)	Entrepreneurial interpretation theory	Conceptual study	1: in the presence of a shock, opportunity interpretation is more likely to lead to a decision to exploit when the interpretive resolution is high than when the interpretive resolution is low or moderate 2: in the presence of a shock, opportunity interpretation is more likely to lead to inaction when the interpretive resolution is low than when the interpretive resolution is high or moderate 3: In the presence of a shock, opportunity interpretation is more likely to lead to interpretive absorption actions when the interpretive resolution is moderate and ex post ignorance is mainly driven by equivocal information than otherwise 4: In the presence of a shock, opportunity interpretation is more likely to lead to directed search when the interpretive resolution is moderate and ex post ignorance is mainly driven by unknown missing information than otherwise 5: In the presence of a shock, opportunity interpretation is more likely to lead to directed action when the interpretive resolution is moderate and ex post ignorance is mainly driven by unknowable missing information than otherwise
Bockmühl, König, Enders, Hungenberg & Puck (2011)	Categorization- Outcomes/ Performance (II-III)	Prospect theory, threat-rigidity hypothesis	Empirical study: Questionnaire and interviews, n=320 firms	1) Market sensitivity has a positive influence on timeliness of response. 2) Opportunity framing has a positive influence on intensity (threat framing a negative) 2.1) Opportunity framing has a positive influence on timeliness (threat framing a negative)

Author(s) (year)	Research Focus	Theory	Method	Key findings
Dutton & Jackson (1987)	Categorization- Outcomes/ Performancec (II-III-IV)	Organisational decision making Cognitive categorisation theory	Conceptual study	Decision makers' cognitions and motivations systematically affect the processing of issues and the types of organisational actions taken in response to them. Categorizing and labelling an issue as a threat vs. An opportunity has significant effects on the responses and performances of firms. Confirmation bias
Dutton & Ottensmeyer (1987)	Issue Scanning - Issue Categorization (I-II-IV)	Organizational theory; Managerial theory	Conceptual study	The authors suggest that environmental uncertainty, pressure for accountability, company's differentiation and information equivocality impact the form in terms of active and passive and the function in terms of symbolic and instrumental of strategic issue management systems.
Dutton (1988)	Categorization (II- IV)	Organizational theory; Behavioural theory	Empirical study: Quantitative Survey, n= 55 middle managers; 38 students	1) The authors argue that uncertain contexts and perceived infeasibility correlate negatively with issue interest. 2) They state that the context and type of an issue influence the motivation for cooperative actions.
Dutton (1992)	Categorization- Outcomes/ Performancec (II-III-IV)	No explicit theory (Organizational Change)	Conceptual study	1. Major mechanisms through which opportunity frame affects individual and collective behaviour (Psychological effects on opportunity frame: positive gloss effect and threat suppression, Organizational effects on opportunity frame: transmitter of organizational values and signalling new beginnings.) 2. More likely to be constructed as opportunities when issue sponsors have characteristics similar to transformational leaders, issue sponsors are located centrally in an organizational network, issue sponsors have potential authority
Dutton, Ashford & O'Neil (1997)	Issue Scanning - Issue Categorization (I-II-IV)	Impression management; Upward influence	Empirical study: Triangulation (interviews, questionnaires), n=First study: 30 middle-level managers interviews; Second study: 118 middle-level managers questionnaires, in 1992	The author suggest that there are favourable or unfavourable contexts for issue selling. Further, risk awareness also impacts issue selling. Therefore, middle managers read the organizational context in order to determine whether or not they will initiate issue selling.
Dutton, Ashford, Lawrence & Miner-Rubino (2002)	Issue Scanning - Issue Categorization (I-II-IV)	Impression management; Upward influence	Empirical study: Quantitative questionnaires, n=317 women	The authors state that organizational culture mediated by image risk and probability of success is the most influential factor that affect issue selling of gender-equity issues.
Dutton, Ashford, O'Neil & Lawrence (2001)	Antecedent - Categorization - Outcome (I-II-III-IV)	Attention-based view	Empirical study: Qualitative interviews, n= 42 middle managers	Packaging moves, involvement moves, and process moves are characteristics of the issue selling process. These attributes influence issue selling's success. Further, contextual knowledge (normative, strategic, and rational context) also impacts the issue selling process.
Dutton, Fahey & Narayanan (1983)	Antecedent - Categorization - Outcome (I-II-III-IV)	Organisational decision making Cognitive categorisation theory	Conceptual study	Diagnosis is a critical phase in strategic decision making. How issues are diagnosed determines in large part, however implicitly, the subsequent course of action in decision making. Diagnosis outputs need to be characterized not only by their substantive elements (assumptions, cause-effect understanding, predictive judgements) but also by their symbolic elements (language and labels). These outputs constrain or facilitate ensuing phases of decision making such as alternative generation, evaluation, choice and implementation.
Dutton, Fahey & Narayanan (1983)	Categorization (II- IV)	Cognition theory	Conceptual study	The authors introduce the expression strategic issue diagnosis and define it in terms of its scope, importance and dominant characteristics.
Dutton, Stumpf & Wagner (1990)	Categorization- Outcomes/ Performancec (II-III-IV)	Organisational decision making	Empirical study: Questionnaires, simulation, n=79	Not assessed isolated individuals' assessments of issues in terms of urgency and interdependence correlate significantly with making an issue an agenda priority, issue interdependence is the sole predictor of the allocation of a divisional budget to an issue, while issue urgency is the sole predictor of the allocation of personal time and corporate cash to an issue.

Author(s) (year)	Research Focus	Theory	Method	Key findings
Elsawy & Pauchant (1988)	Issue Scanning - Issue Categorization (I-II-IV)	Organizational theory; Organizational learning theory	Empirical study: Qualitative Interviews, n= 17 professionals and managers, in 1986	The authors state that cognitive frames of references (templates, triggers, and twitches) impacts strategic issue scanning (either reactive or proactive) processes.
Garriga (2009)	Categorization- Outcomes/ Performancec (II-III-IV)	Stakeholder theory	Empirical study: Questionnaire interviews and field notes	Network structure may create a context for selective cooperation but does not explicitly determine it, collective identity fostered the overlapping stakeholder interest, reciprocity plays an important role both in the framing process and in balancing of the stakeholders' interest. Cooperative action in stakeholder network is likely to be a function of network and of strategic orientation of the stakeholder.
Gartner, Shaver & Liao (2008)	Categorization (II- IV)	Attribution theory approach	Empirical study: Open-ended questionnaire from the Panel Study of Entrepreneurial Dynamics, n= 438 nascent entrepreneurs	Entrepreneurs interpret opportunities as dependent on their abilities and effort rather than interpretations about the importance of their external circumstances.
George, Chattopadhyay, Stikín & Barden (2006)	Categorization- Outcomes/ Performancec (II-III-IV)	Prospect theory; Threat-rigidity hypothesis; Institutional theory	Conceptual study	1) When legitimacy-related events occurs, decision makers respond isomorphic or nonisomorphic (level of risk). 2) The interpretation of an issue as potential opportunity for gaining legitimacy has an impact on organizational actions. 3) When decision makers are uncertain about issues, they initiate decoupled actions.
Ginsberg & Venkatraman (1992)	Antecedent - Categorization - Outcome (I-II-III-IV)	Managerial interpretation theory	Empirical study: Triangulation (interviews, questionnaires), n= 430 firms, between 1987 to 1988	This study found the direct influence of firms' competitive postures (organizational context) on their responses to technological innovation (strategic issue) to be more powerful than their indirect influence through managerial (individual context) interpretations.
Ginsberg & Venkatraman (1995)	Antecedent - Categorization - Outcome (I-II-III-IV)	Organisational decision making Cognitive categorisation theory	Empirical study: Field interviews, questionnaires, structural equation modelling & qualitative longitudinal observations, n=424	Three dimensions of issue interpretation (urgency, understandability and manageability) shape the level of commitment devoted to actions designed to resolve the issue. Intra-organisational strategies were considered before inter-organisational strategies. The response consideration has a sequential nature with respect to target, the interpretation of an issue can be related to the target of response but has more influence on the magnitude.
Gioia & Thomas (1996)	Categorization- Outcomes/ Performancec (II-III-IV)	No explicit theory (sensemaking, strategic change)	Empirical study: Qualitative and interpretive interviews with 611 executives from 372 colleges and universities in the U.S for 6 months	Top management team members' perception of identity and image, especially desired future image, are key to the sensemaking process and serve as important links between the organization's internal context and the team members' issue interpretation
Grégoire, Barr & Shepherd (2010)	Antecedets- Issue Scanning (I)	No explicit theory (structural alignment, cognitive theories)	Empirical study: Verbal protocol study, n= 9 senior executives with new venture and founding and managing experience	Superficial features and structural relationship influence issue interpretation. Noticing parallels between higher-order relationship appears to be acritical step in the process of recognising opportunities. Prior knowledge is systematically associated with executives' considerations and alignment of structural relationships.
Hahn, Preuss, Pinkse & Figge (2014)	Antecedent - Categorization - Outcome (I-II-III-IV)	Managerial cognition; Corporate sustainability; Strategic paradoxes	Conceptual study	The two frames influence issue scanning in terms of breath and depth, interpretation in terms of issue valence and sense of control, and response in terms of scope, novelty, swiftness, and riskiness.
Hambrick & Mason (1984)	Outcome/ Performance (III-IV)	Upper Echelon	Conceptual study	organizational outcomes (strategic choices and performance levels) are partially predicted by managerial background characteristics.

Author(s) (year)	Research Focus	Theory	Method	Key findings
Hambrick (1981)	Antecedents- Issue Scanning (I)	Organization Theory	Empirical study, questionnaire and interviews, n=195	Neither of these two role variables is closely or consistently related to the focus or overall amount of scanning. Relationship between hierarchical level and scanning, Relationships between functional area and scanning
Hazer & Highhouse (1997)	Categorization- Outcomes/ Performance (II-III-IV)	No explicit theory (HRM)	Empirical Study: Scenarios, n= 179 managers from various organisations in a Midwestern metropolitan area	Managers perceived utility analysis as most credible and were most likely to use it when the 40% procedure was used to calculate SD. Interaction between framing condition and manager comprehension of the utility material.
Highhouse & Paese (1996)	Categorization- Outcomes/ Performance (II-III-IV)	Prospect Theory	Empirical Study: Simulation (decision problems), n1=215; n2= 178	Prospect framing effects were observed in both problem domains (opportunities/threats). The framing effects observed for the opportunity problems were not accompanied by a reframing of an opportunity into a threat when prospects were framed negatively. Decision maker's perceptions of the decisions as threats or opportunities did not mediate framing effects on risky choice.
Highhouse & Yuice 1996	Outcome/ Performance (III-IV)	Prospect Theory	Empirical study: Scenarios, n=244 undergraduates introductory psychology course/ 84 students in management and business administration courses	Risky alternative was perceived as an opportunity when the decision makers where in the loss domain, but perceived it as a threat when they were in the gain domain. More risk taking for opportunity-framed problems and risk averse for the threat-framed problems. More risks for the loss problem than for the gain problem. Threat and opportunity perceptions are theoretically and empirically distinguishable from loss and gain perspectives.
Highhouse, Paese & Leatherberry (1996)	Categorization (II- IV)	No explicit theory	Empirical study: Context manipulation scenarios with 176 undergraduate psychology students	Contrast effects occurred only for participants exposed to unequivocal opportunities prior to reading an equivocal problem. Those exposed to unequivocal opportunities framed an equivocal issue as a threat. Those exposed to an unequivocal threat did not view the same equivocal issue as threatening. The contrast effect extends beyond simple perception to actual intention and behaviour.
Howell & Shea 2000	Antecedent - Categorization - Outcome (I-II-III-IV)	Social cognitive theory	Empirical study: Measures of individual differences, environmental scanning, innovation framing and champion behaviour. N= 47 champions, 47 division managers, 237 innovation team members of large (in terms of sales) North American companies	Scanning the environment for new ideas, the most effective source of information is the champion's personal network of people inside and outside the organisation. The labelling of an idea as a threat appears to diminish a champion's perceived influence and encode credibility in promoting an innovation. champions make a positive contribution to project performance over time.
Jackson & Dutton (1988)	Antecedent - Categorization - Outcome (I-II-III-IV)	No explicit theory	Empirical Study: Questionnaires, n=83	Threats have a negative connotation, involve the likelihood of loss without gain, low feelings of control. Opportunities are positive issues, high potential for gain without loss and successful resolution of such issues is considered likely, feelings of control are likely to be high. Both threats and opportunities are major, high-priority issues that are difficult to resolve and involve direct competition with others. Threat and opportunity inferences do not follow the same cognitive rules. Respondents were more sensitive to threat-consistent information and less sensitive to threat-discrepant information.
Julian & Ofori-Dankwa (2008)	Antecedent - Categorization - Outcome (I-II-III-IV)	Theory-building literature	Empirical study: Quantitative questionnaires, 280 CEOs	1) The authors argue that FU is a better approach than TO for predicting intentions and actual responses. 2) They suggest that threat is positively related to urgency and negatively to feasibility, converse for opportunity. 3) They argue that the TO and FU combined result in FUJ (favourability, urgency, and influence) which is most and more predictive than TO or FU alone.
Kabanoff & Brown (2008)	Antecedent - Categorization - Outcome (I-II-III-IV)	Cognition theory	Empirical study: Quantitative, n= 5000 annual reports, between 1992 to 2003	1) The article contains a theory-based framework of a strategic knowledge structure content. 2) The authors argue that certain strategic types achieve better financial performances than others do because they focus their attention on different strategic issues.
Kovoor-Misra (2002)	Antecedents- Issue Scanning (I)	Social learning theory	Conceptual study	Top managers are likely to envision and notices those potential crisis that pertain to their task domain other types of crises will receive less attention, crises that they have experienced other types of crisis that have not been experienced will receive less attention, crises that challenge the core attributes of the organisations identity other types of crises will receive less attention, crises that are consistent with their organisation's culture other types of crisis will receive less attention

Author(s) (year)	Research Focus	Theory	Method	Key findings
Lang, Calantone, Gudmundson (1997)	Outcome/ Performance (III-IV)	Organization information interpretation, perceived environmental uncertainty (PEU), categorization theory	Empirical study: Mail survey, n= 671 employees of companies with less than 100 employees in a midwestern state	Positive relationship between perceived threats/opportunity and information seeking. Negative relationship between perceived threat and perceived opportunity
Lairt & Milliken (1992)	Antecedent - Categorization - Outcome (I-II-III-IV)	Strategic change, organisational learning processes	Empirical study: Content analysis of annual reports, 40 computer software firms and 40 furniture firms	Poor past performance, environmental awareness, top management team heterogeneity, and CEO turnover increased the likelihood of reorientation. Poor past performance was more strongly associated with reorientation in the stable environment than in the turbulent environment. The tendency to make external attributions for poor performance outcomes decreased the likelihood of reorientation in the turbulent environment, but not in the stable environment.
Maitlis (2005)	Issue Scanning - Issue Categorization (I-II-IV)	Organisational theory	Empirical study: Qualitative (interviews, observations, orchestra tours, and documentary analysis), n= 120 interviews and 114 observed meetings (within 3 orchestras)	The author argues that the social process of organizational sensemaking includes two main dimensions: animation and control. Further, he states that different combination of leader and stakeholder sensegiving result in four distinguish forms of organizational sensemaking: minimal, restricted, fragmented, and guided followed by different outcomes; accounts and actions.
Markóczy (1997)	Categorization (II- IV)	Cognition theory	Empirical study: Quantitative questionnaires, n=91 managers	Functional background, age, nationality partially influence individual beliefs. Whereas, organizational membership fully impacts individual cognitions. However, hierarchical position does not affect individual beliefs.
Martins & Kambh (1999)	Antecedents- Issue Scanning (I)	No explicit theory (adaptive interpretative learning, strategic issue interpretations)	Empirical study: Questionnaires, n=103 in Aug. 1994	Success with an existing IT resulted in a positive bias in managers' interpretations of new IT. This bias was stronger among managers who had greater amounts of experience with the existing technology and among managers whose companies did not engage in proactive information seeking about new information technologies.
Martinsuo, Korhonen & Laine (2014)	Issue Scanning - Issue Categorization (I-II-IV)	No explicit theory (uncertainty, cognitive categorization)	Empirical study: Qualitative and thematic interviews, n=10 R&D intensive companies in Finland	In all categories more uncertainties were labelled as threats. The framing of the uncertainty shows how uncertainty information is processed as part of managers' personal and social sensemaking during project portfolio management. All projects are interrelated and resources must be divided. Environmental uncertainties were similarly framed as threats and neutral or ambiguous but less actively labelled as opportunities. Organisational-complexity uncertainty was mainly labelled as threats, and less as opportunities (except inter-project relations were more labelled as opportunities). Individual perceptions affect labelling the issues.
McMullen, Shepherd & Patzelt (2009)	Issue Scanning - Issue Categorization (I-II-IV)	Attention based View and Regulatory Focus Theory	Conceptual study	There is a substantive difference between threat evaluation performed by individual managers with limited knowledge of the organisational landscape and threat evaluation performed by top managers of the organisation who are supposedly privy to more information. Because middle and top management have different concerns, they are also likely to evaluate threats differently. (environment, saliency of past attacks, received recommendations)
Meyer (1982)	Categorization- Outcomes/ Performance (II-III-IV)	No explicit theory (Adaptation)	Empirical study: Expert panel assessment, questionnaires, structured interviews, n=19 hospitals in march 1975	Ideological and strategic variables are better predictors of adaptations to jobs than are structural variables or measures of organisational slack. Diversifications diminishes impacts, slack cushions impacts, ideologies shape responses, structural constraints on responses,
Miller & Lin (2015)	Issue Scanning - Issue Categorization (I-II-IV)	No explicit theory	Empirical study: Experiment, n=404	Interpretation accuracy improves over time for best available match and exact match reasoning but often declines for satisfying reasoning (in dynamic environments organisations should abandon satisfying behavior or promote unlearning of distant past experiences). Environmental dynamism encodes performance in the short term but enhances experiential learning in the long run.
Mitchell & Lant (2013)	Issue Scanning - Issue Categorization (I-II-IV)	Social choice theory; Agency theory	Empirical study: Quantitative questionnaires, n= 362 managers and principles of 49 schools, over 3 years	Managers fit their social ego network with the framing of strategic issues and thus, they have access to different social capital depending on the issues.

Author(s) (year)	Research Focus	Theory	Method	Key findings
Mital & Ross, Jr. (1998)	Categorization- Outcomes/ Performance (II-III-IV)	No explicit theory (Strategic decision making, cognitive theory)	Empirical study: Experiment (manipulation and simulation) n= 63 advanced undergraduates and MBA students in strategic marketing course	Transient affective states have a small but systematic influence on interpretation and risk taking. Affect moderates the effect of issue framing on issue interpretation
Nutt (1993)	Categorization- Outcomes/ Performance (II-III-IV)	Decision making theory	Empirical study: Quantitative (generic interviews), n=163 interviewees	The author identify four types of formulation processes whereas only two of them are relevant for our work, namely issue process and reframing process. The latter is the most promising formulation process of all.
Palich & Bagby (1995)	Categorization (II- IV)	Cognitive theory	Empirical study: Scenario approach, four page self questionnaire with 92 members of a business organization	Entrepreneurs do not perceive themselves as being more predisposed to taking risks than nonentrepreneurs. Entrepreneurs categorised equivocal business scenarios significantly more positively than did nonentrepreneurs. These perceptual differences were consistent and significant.
Parida, George, Lahti & Wincent (2016)	Issue Scanning - Issue Categorization (I-II-IV)	No explicit theory (saravathy framework of causation and effectuation)	Empirical study: Survey, n= 104 CEO'S , in 2012	A higher perception of control increases the likelihood of initial sales from low to medium levels when entrepreneurs interpret the environment using causation. The higher the perceived gain, the more positive the influence of effectuation and the likelihood of achieving initial sales.
Rossel (2009)	Issue Scanning - Issue Categorization (I-II-IV)	Weak signals theories	Conceptual study	To identify and interpret weak signals in their early stage beware of easy picks (odd/new/...) and check for system dynamics a manager should engage in various weak signal analytical activity a pragmatic approach should be chosen for an open-ended analysis start exploratory futures exercises with a backcasting approach link weak signals to several cones of possibilities envisage no return points or tipping points for ineluctable decisions and actions
Schneider & De Meyer (1991)	Categorization- Outcomes/ Performance (II-III-IV)	Organizational theory	Empirical study: Quantitative questionnaires, n= 303 students (134 MBA students, 169 executive students)	This study indicates that different cultures are likely to interpret and respond to the same strategic issue in different ways. In particular, Latin European are more likely to interpret threats and crises than others.
Sharma (2000)	Categorization- Outcomes/ Performance (II-III-IV)	Institutional theory, strategic choice theory	Empirical study: Self-report questionnaire, n= 3-5 people from different levels of 99 firms	Managerial interpretations have an influence on the environmental strategies of companies, the legitimization of environmental issues as an integral aspect of corporate identity has an influence on the issue interpretation. The discretionary slack available to managers for creative problem solving is associated with managerial interpretations
Shepherd, McMullen & Jennings (2007)	Antecedent - Categorization - Outcome (I-II-III-IV)	coherence theory and belief formation	Conceptual study	This model puts new weight on the rapid, preattentive processes that guide entrepreneurs. This model incorporates the notion of the environment as opportunity into entrepreneurial decision making as exploitation,
Sonsenshein (2006)	Issue Scanning - Issue Categorization (I-II-IV)	Influence literature; Discourse theory	Empirical study: Quantitative questionnaires, n=95 MBA students	1) The authors argue that economic embellishing and normative subtracting is particularly used by individuals to shape issues in public. 2) Issue crafting occurred when individuals are characterised by less power and when organizational values contradicted with private reasons.

Author(s) (year)	Research Focus	Theory	Method	Key findings
Sonenshein (2016)	Antecedents - Issue Scanning (I)	Institutional theory	Conceptual study	The authors argues that multiple levels of meanings impact social issues within a organization. Social issues can be attributed with equivocality and illegitimacy. In turn, these two impediments account for four issue types (convertible, blurry, safe, and risky). A match between issue types and meaning-making tactics (framing, labelling, maintaining, and importing) influence manager's support to social issues. This influencing process is reciprocal.
Sonenshein, DeCelles & Dutton (2014)	Antecedent - Categorization - Outcome (I-II-III-IV)	Motivation lens	Empirical study: Triangulation (study 1 qualitative; study 2 quantitative), n= Study 1: 29 participants (students, alumni); Study 2: 91 members of environmental groups, between 2006 to 2007	1) The authors suggest that individuals' self-evaluations are developed from the interpretation of issue support challenges in multiple contexts inside and outside work settings. 2) They state that individuals with a self-affirmer profile have the highest level of issue supportive motivation and behaviour.
Siaruck & Milliken (1988)	Issue Scanning - Issue Categorization (I-II-IV)	No explicit theory (Retrospective sensemaking, effective perceptual filtering)	Conceptual study	Organisations' environments act as impartial evaluators of executives' perceptions, analyses and actions. Retrospective explanations of past events encourage academics to overstate the contributions of executives and the benefits of accurate perceptions or careful analyses. Retrospection distors people's understanding of their worlds by emphasizing one or the other of two logical consequences: Two modes of noticing: controlled & volitional and automatic & involuntary. Filtering can provide a nonjudgemental framework for looking at past, present, and future events.
Thomas & McDaniel (1990)	Categorization (II-IV)	Cognitive categorisation theory	Empirical study, questionnaire, analysis of annual trade publications with 151 chief executives	Strategy and information-processing structure are related to how chief executives label strategic situations and the range of variables the use during interpretation. If CEOs want to alter the interpretation they may wish to manage their top management's capacity to gather, process, and convey information. Change in information-processing capacity may alter CEO's conceptual lenses and subsequently, their range of possible actions.
Thomas, Clark & Gioia (1993)	Categorization- Outcomes/ Performance (II-III-IV)	Organisational decision making Cognitive categorisation theory	Empirical study: Case-scenario questionnaire, n=156, between 1987-1990	High Information Use (scanning) strongly influences interpretation, the interpretation of a strategic issue as control- lable had a positive effect on product-service change (action). More or better strategic action has lead to better performance on all three performance measures. Associations between external scanning behaviors and interpretations of controllability serve as sensemaking antecedents to strategic actions, focus of information search during scanning had direct linkages to both action and performance. Sensemaking process must not be executed in a linear or normative fashion.
Thomas, Shankster & Mathieu (1994)	Issue Scanning - Issue Categorization (I-II-IV)	Upper echelon	Empirical study: Quantitative (questionnaires), n= 611 questionnaires (372 institutions)	Individual-, group-, and organization-level context affect managers' interpretation of organizational issues as political. In contrast, only group-level context influence managers' interpretations of organizational issues as strategic.
Tsai, Chang & Peng (2016)	Categorization- Outcomes/ Performance (II-III-IV)	Theory of planned behavior	Empirical Study; n= 1563 (taiwan) and 2220 (china) GEM database, in 2010	Capability positively affects entrepreneurial intention through perceived opportunity perceived opportunity has a stronger mediating effect in linking perceived capability and entrepreneurial intention than fear of failure, perceived capability has a stronger indirect effect on entrepreneurial intention through perceived opportunity among men than among women, age negatively affects perceived opportunity and entrepreneurial intention
Van Burg, Berends & Van Raaij (2014)	Categorization- Outcomes/ Performance (II-III-IV)	Knowledge transfer theory; cognitive framing theory	Empirical study: Longitudinal qualitative study - interviews, triangulation, n=18 initial interviews, 24 additional follow-up interviews, 42 in-depth interviews with 30 actors, between 2005-2011	how discontinuous changes in interorganizational knowledge transfer are shaped by the actors' future-oriented framing of the innovation, shifts in framing lead organisational actors to leverage their relational context and knowledge base in new ways.
Williams & Wood (2015)	Categorization (II- IV)	No explicit theory (prospective theory of entrepreneurial processes, cognitive theories)	Conceptual study	rule-based reasoning underpins how individuals evaluate opportunities, rule-based reasoning as an overarching theoretical framework to understand opportunity evaluation, environmental factors opportunity-related cues and individual differences are judgement rules to discern the personal attractiveness of an opportunity

Figure 1 – Publications per Year of Reviewed Studies

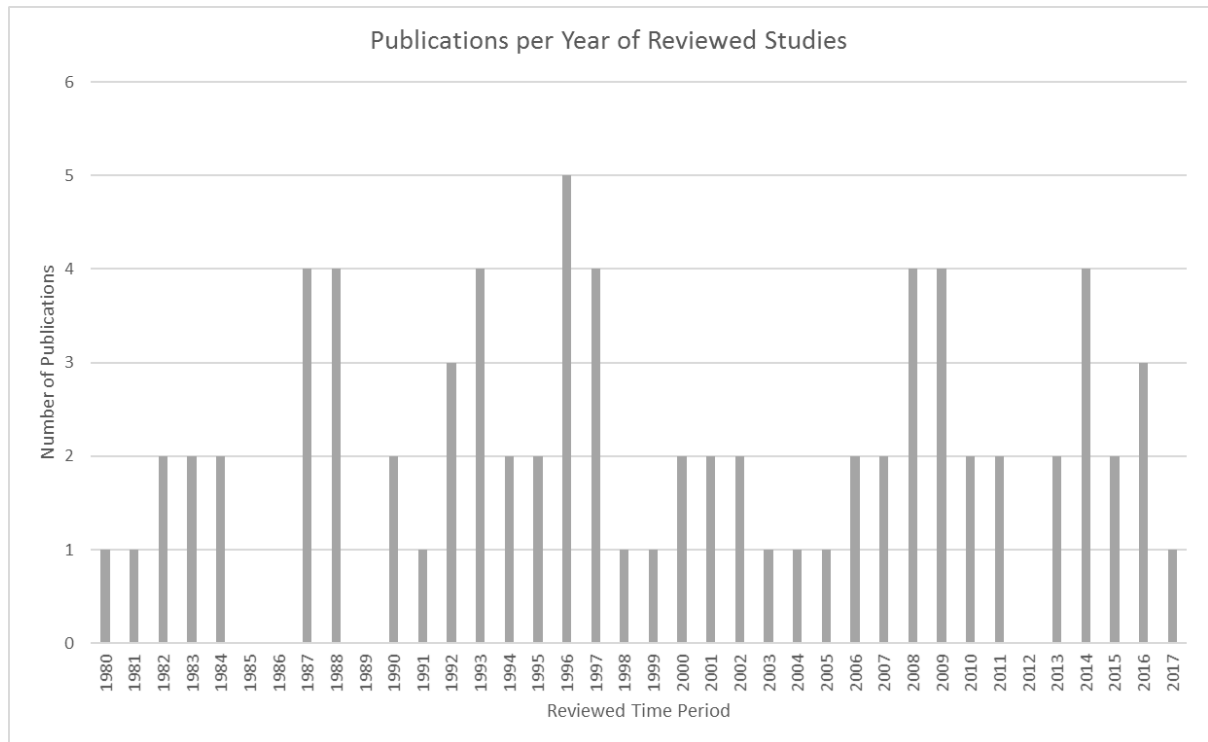
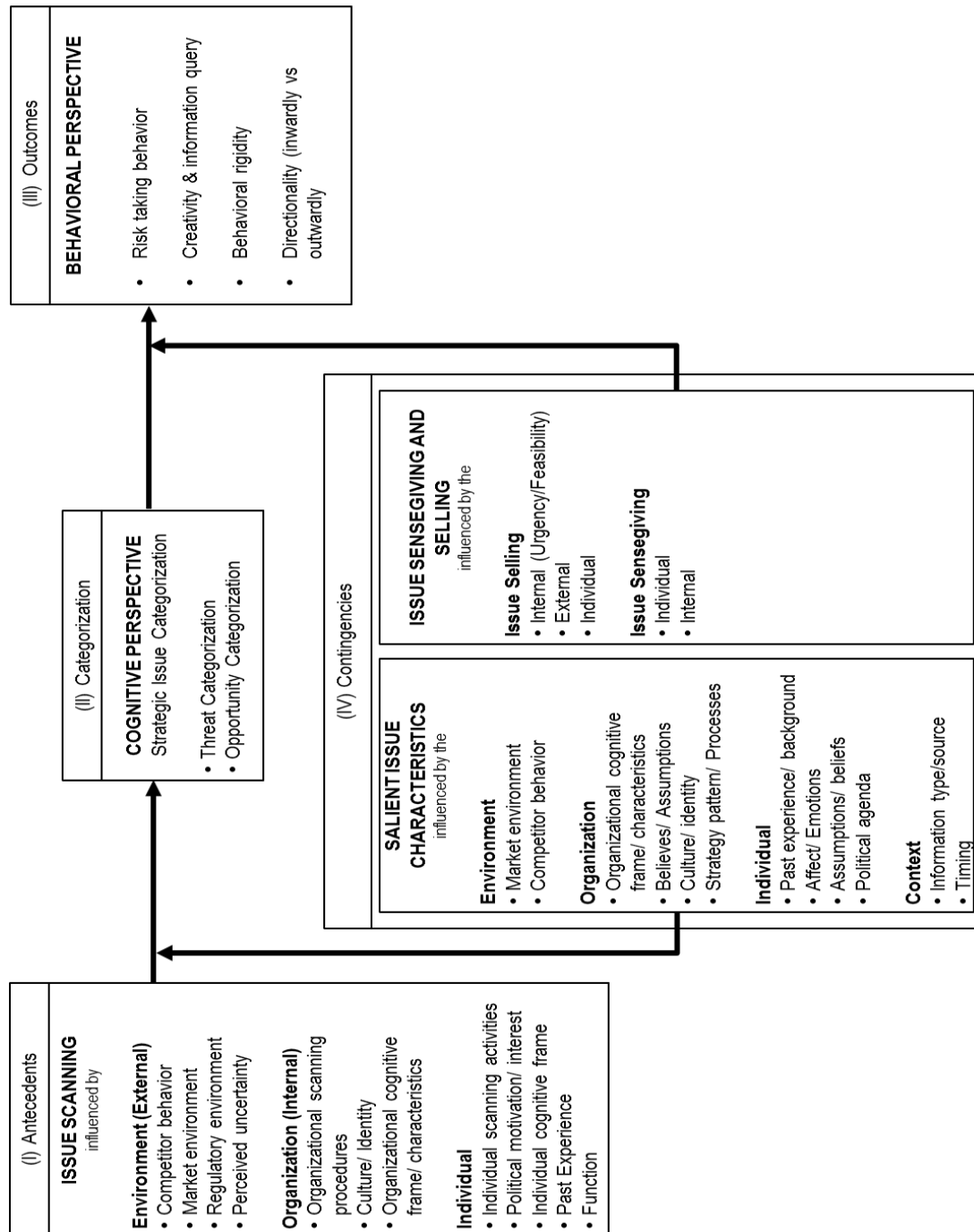


Figure 2 –Strategic Issue Categorization Research: An Integrative Framework



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