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THE ATTENTION - BASED VIEW AND THE ORGANIZATIONAL ENVIRONMENT: A REVIEW OF THE LITERATURE

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Resumo

Desde a sua publicação em 1997, a visão baseada em atenção (ABV) de Ocasio tem sido aplicada por estudiosos no estudo de uma ampla gama de questões e áreas de pesquisa. Uma das linhas de investigação levadas a cabo pelos estudiosos que empregam a ABV conecta a atenção gerencial ao ambiente organizacional e estuda as consequências do foco de atenção no ambiente externo para as escolhas estratégicas das organizações. Várias questões nesta área de pesquisa, no entanto, permanecem insuficientemente investigadas, especialmente os efeitos da escassez de recursos externos sobre os padrões de atenção das empresas. Com o objetivo de identificar os mais recentes desenvolvimentos em atenção gerencial, estímulos ambientais em um contexto de escassez e formulação de estratégias, realizei uma revisão de literatura, cujos resultados são apresentados neste artigo. Os resultados desta investigação, espera-se, ajudarão a apontar para pesquisadores neste campo linhas de pensamento, convergências e lacunas que possam orientar e apoiar seus futuros estudos.

Palavras-chave: visão baseada na atenção; ambiente organizacional; formulação estratégica; revisão da literatura.

Abstract

Since its publication in 1997, Ocasio's attention-based view (ABV) has been applied by scholars to study a widening range of issues and research areas. One of the lines of inquiry pursued by scholars who employ ABV connects managerial attention to the organizational environment, and studies the consequences of the focus of attention to the external environment to the strategic choices of organizations. Several issues in this area of research, however, remain insufficiently investigated, specially the effects of external resource scarcity on the attentional patterns of firms. In order to identify the latest developments in managerial attention, environmental stimuli in a context of scarcity and strategy formulation, I performed a literature review, the results of which are presented in this paper. The findings of this investigation will, hopefully, help point to researchers in this field lines of thought, convergences and gaps that may orient and support their future studies.

Keywords: attention-based view; organizational environment; strategic formulation; literature review



1 Introduction

The study of the actions undertaken by firms to respond to environmental stimuli is a central theme in the strategy field. Several theories try to explain the antecedents and determinants of these actions, providing different and sometimes contradictory explanations for the same phenomena. Building upon the concept of the limited attentional capability of humans – their bounded rationality – Ocasio (1997) proposed the attention-based view of the firm (ABV). This “metatheory of organizational action and adaptation” (Ocasio, 2011, p. 1286) posits that organizational decisions, actions and firm performance are influenced by the focus and distribution of managerial attention.

Managerial attention can be directed toward the external environment (e.g., products and markets, macroeconomic factors, regulations, technology) or toward the internal organizational context (e.g., structures, processes, policies and procedures, resources). The direction of the focus of attention determines the likelihood that changes in the environment will be considered and attended to in the strategic agenda of the firm (Nakdarni & Barr, 2008). And if an organization wishes to succeed and survive in the long run, it has to adapt and respond to changes arising from its external environment (Buyl, Boone & Matthysens, 2011).

The effect of attention to environmental stimuli on the strategic choice of firms has been the subject of a growing number of studies that use the ABV as their theoretical foundation. However, these studies usually deal with different aspects of the environment, such as dynamism/change (Abebe, 2012; Nadkarni & Barr, 2008; Shepherd, McMullen & Ocasio, 2017; Eggers & Kaplan, 2009; Zheng, Liu & Gong, 2016), complexity (Oliver, Calvard & Potocnik, 2017; Guarana & Hernandez, 2015) or dynamism and complexity (Joseph & Wilson, 2017; Miller & Lin, 2014), giving scant attention to munificence. While a few have tackled issues associated with strategic renewal in situations of scarcity (Schmitt, Barker, Raisch & Whetten, 2016), studies on ABV that approached managerial attention in firms facing external threats had their focus on sudden environmental crisis, such as exogenous shocks (Barreto & Patient, 2009) or rare crises (Rerup, 2009), not on a situation of continued reduced environmental munificence, as triggered by an economic recession.

The study of the way firms deal with recession is particularly relevant in developing countries such as Brazil, that has historically experienced substantial and rapid swings in cycles of economic growth and recession (Martincus & Molinari, 2007), the telltale signals of a financially fragile economy (Paula & Alves, 2000; Minsky, 1982, 1986).

In order to identify the latest developments in managerial attention, environmental stimuli in a context of scarcity and strategy formulation, I performed a literature review, the results of which are presented in this paper. The findings of this investigation will, hopefully, help point to researchers in this field lines of thought, convergences and gaps that may orient and support their future empirical studies.

2 Theoretical background

The attention-based view of the firm was defined by Ocasio (1997), in a theoretical essay in which the author proposed a new explanation of firm behavior and, particularly, of how firms respond to changes in their environment and internal circumstances. To answer these questions, he went back to Simon (1947), who in his book introduced a new perspective of firm behavior, centered on bounded human rationality as an explanation for managerial decisions. According to Simon, the limited attentional capacity of managers is further influenced by the allocation of roles and responsibilities in the structure of the organization; such allocation channels and directs managers to pay attention to different stimuli or to different aspects of the situation experienced by them. Therefore, firm behavior is a result of limited managerial capacity for attention and of structural and processual factors within organizations that influence managerial attention.



Ocasio proposes an attention-based view of the firm, that extends Simon's original propositions into a new theoretical formulation that defines managerial attention as a multilevel process in which individuals, organizations and the environment inter-relate, and where information processing by individuals is conditioned by "procedural and communication channels and attention structures" within firms (Ocasio, 1997, p. 188).

2.1 The three premises or principles of ABV

Ocasio's proposed attention-based view of the firm is built upon three premises or principles:

- Focus of attention: Actions undertaken by managers are directly influenced by and originate from their attention patterns. In general, managerial attention to potential issues and answers (problems and solutions) determines the subsequent strategic decision making in the organization.
- Situated attention: The issues managers focus their attention on, and by extension the decisions they make, are dependent on the type of situation they are in.
- Structural distribution of attention: The situations managers face themselves in, and the attention they pay to these situations, are conditioned by the structure and social relationships in an organization, that regulate "how the organization distributes, and controls the allocation of issues, answers and decision-makers within specific firm activities, communications, and procedures" (Ocasio, 1997, p. 191).

The principle of focus of attention states that managers are selective in the attention they pay to issues, at any given time, and that the attention paid to these issues guides their decision-making processes. Issues that aren't attended to cannot inform the thought and decision processes of managers, and therefore, do not influence the choices and decisions they make. The selective attention of individuals is a product of their bounded cognitive capabilities, that forces them to focus their energy, efforts and mindfulness on a limited number of issues. In a firm context, when managers limit their attention to few issues they are able to allocate heightened perception and cognitive powers to (LaBerge, 1995).

In his description of the selective focus of attention of managers, Ocasio draws upon Schneider and Shiffrin (1977) and Shiffrin and Schneider (1977) and distinguishes between two modes of attentional processing: automatic and controlled. Except when a target is present, automatic attention operates without the active control of individuals. Automatic attention is parallel in nature, difficult to alter, ignore or suppress once learned and largely unaffected by load. Automatic processing is associated with routinized environmental stimuli, that trigger unreflexive decisions and actions and impose little demand on cognitive capabilities. Controlled attention, on the other hand, is highly demanding on the attentional capacity of individuals and under their control; it is triggered by salient issues that capture their attention. It is serial in nature and strongly dependent on load, which implies that individuals can cope with a limited number of the issues that demand controlled attention at any given moment in time.

According to the principle of situated attention, the focus of attention of individuals depends on the particular situation they're in. Therefore, the attention of an individual varies according to his or her context and this variance in attention also influences his or her behavior. In a firm, the attention of managers is influenced by the situations they face, and these situations, by their turn, are shaped by: 1) the environmental stimuli received for decision-making; 2) the embodiment of issues and answers in the culture of the organization, its symbols, artifacts and narratives, that may or may not warrant salience to them and 3) the communication channels and processes established for interactions among the members of the organization.

The principle of structural distribution of attention stipulates that the focus of attention of managers in an organization varies depending on how the organization allocates issues and



answers to the different functions and areas in its structure. The division of labor among functions in an organization, each with its own set of tasks, local procedures, communication channels and activities, present decision-makers assigned to them with specific issues that demand distinct answers. These differentiated issues and answers, by their turn, lead to variance in the focus of attention of individual and groups of managers within a firm, depending on the functions and areas they're assigned to.

2.2 A model of situated attention and firm behavior

Ocasio's (1997) original paper also included a model for a firm's situated attention that, notwithstanding the author's warning that it did not constitute a fully-fledged theory of firm behavior, was used to explain the mechanisms identified by Ocasio "that outline how attentional processing at the individual, social cognitive, and organizational levels interact to shape firm behavior" (Ocasio, 1997, p. 192).

The main elements of the model proposed by Ocasio (1997) are: 1) the environment of decision; 2) the repertoire of issues and answers; 3) procedural and communicational channels; 4) the firm's attention structures; 5) decision makers, and 6) organizational moves.

Environment of decision: The material, social, and cultural factors, internal and external to the firm, including its past history, that influence its decision activities. The environment of decision provides the stimuli for the structuring of organizational practices and decision-making processes in a firm. However, due to its complexity, only a few selected stimuli from the environment of decision are usually noticed, interpreted and acted upon by decision-makers, in any particular situation.

Issues and answers: This element comprise the repertoire of cognitive and cultural schemas available and employed by decision-makers to notice, interpret and respond to environmental stimuli. Decision makers resort to cognitive categories of problems, opportunities, that they can use to notice the issues faced by the firm. Managers also have at their disposal a cultural repertoire of schemas that can be used to interpret the issues at hand and to answer to these issues, at least partially borne out of the experience these managers and the firm had in the past with similar issues and the answers selected to deal with them. According to Ocasio (1997), these schemas include standard operating procedures (Cyert & March, 1963), organizational structure and routines (Nelson & Winter, 1982), and a "cultural toolkit" of plans and programs (Swidler, 1986).

Procedural and communication channels: The set of situational contexts created by organizations to direct the attention of individual decision-makers to specific issues and answers. They include formal and informal activities, interactions and communications, such as meetings, quarterly reports, personnel evaluation interactions, operations and capital budgetary planning and control processes, that have a material existence, in specific locations and which are employed for some or for all of the functions within the firm. Ocasio (1997) defines these procedural and communication channels as "a critical part of the firm's attention allocation and serve as conduits for the processing of issues and answers in the making of organizational moves" (Ocasio, 1997, p. 195).

Attention structures: Ocasio identifies four types of structures that guide the use of time, effort and focus of attention of decision-makers, apportion value to issues and answers they attend to and legitimize the procedural and communication channels implemented by the firm: rules of the game, players, structural positions and resources. *Rules of the game* are the standards and principles, formal and informal, that regulate how organizational reality should be interpreted, tasks should be accomplished and people should behave in a given situation to maintain or and obtain social status and rewards. Rules of the game are a collective construction reflecting the history of the organization and its environment (Fligstein, 1990). *Players* are individuals or group of individuals who, through their social influence and power, imprint their beliefs, interests, and values to the firm's attention regulation, and affect the



attentional procedural and communication channels of the firm irrespective of their formal position and role in firm's decisions and actions. *Structural positions*, on the other hand, are the differentiated responsibilities of individuals, arising from the division of labor within the functions of the firm, that situate these individuals in the structure and hierarchy of the organization, define the relationships they maintain with other structural positions, internal or external to the firm and, as a consequence, focus their attention on a particular set of issues and answers. *Resources* are the tangible and intangible assets deployed by the firm to produce its goods and services and to perform its tasks and activities. "Players occupy structural positions and are constrained and enabled by the organizational rules of the game. They employ the firm's resources in their attention processes to collectively direct what, when, how organizations enact and respond to the environment" (Ocasio, 1997, p. 196).

Decision makers: These are the individuals who participate, jointly, in the social construction of organizational moves through the procedural and communication channels that regulate the attention they pay to particular aspects of the environment.

Organizational moves: Are the actions undertaken by a firm in response (or in anticipation) to changes in the external environment or in internal processes and circumstances. These organizational moves are the output of managerial attention and decision-making.

3 Method

I followed the protocol proposed by Tranfield, Denyer and Smart (2003) for systematic reviews, adapted by them from medicine to the context of management.

I started with a preliminary collection of articles on ABV, conducted at the websites of Wiley, publisher of the Strategic Management Review journal (SMJ) and of the Academy of Management, publisher of the Academy of Management Journal (AMJ), Academy of Management Review (AMR) and Academy of Management Annals (AMA). These journals were selected for this preliminary search based on their relevance in the field of strategy and general management. The preliminary search was conducted to get a sense of the studies on ABV published in highly regarded journals and to provide direction to the subsequent systematic gathering of literature in this field. The search used the expression "attention-based view" and returned several studies; predictably, one of them was the seminal article of Ocasio (1997) published in SJM. The abstracts of the articles were read and those judged of possible relevance had their full text downloaded and read; the articles that were ultimately considered potentially relevant to this literature review were stored for further analysis.

Tranfield *et al.* (2003) recommend that the relevant literature to be reviewed should be obtained from searches conducted on bibliographic databases, using key words and search terms. However, searches in bibliographic databases using the key word "attention" generated a large number of results, most of them unrelated to ABV. On the other hand, more focused searches, such as the one using the expression "attention-base view" or variations thereof, failed to capture at least some of the known relevant studies on ABV. Therefore, a different approach was used in the further search for studies on ABV, combining two distinct search strategies: one based on the use of key words and another based on the identification of citations to a seminal work in the development of ABV, the original article by Ocasio (1997). Both searches were conducted using the Scopus database. Scopus was selected instead of ISI Web of Science, the most frequently used bibliographic database (Zupic & Cater, 2015), due to the known limitations of the latter, such as its restricted and inconsistent indexing of books (Bar-Ilan, 2010; Torres-Salinas, Robison-Garcia, Campanario e López-Cózar, 2014) and high selectivity in the journals indexed, that may leave relevant studies out of reach for this review (Torres-Salinas et al., 2014). On the other hand, Scopus' restricted coverage of older publications, especially those published before 1996 (Falagas, Pitsouni, Malietzis & Pappas,



2008), usually mentioned as its major drawback, doesn't represent a problem for our review, considering that ABV was initially defined by Ocasio in 1997.

The first search was conducted as described below:

- The expression “attention-based view” was used for a search in Scopus, which returned 98 items. The older item published was Ocasio's article from 1997.
- Items from subject areas not related to this review, such as Engineering, Psychology, Arts and Humanities, Computer Science, Environmental Science, Medicine, Agriculture and Biological Sciences, Chemical Engineering, Mathematics, Neuroscience and Nursing, were excluded, resulting in 81 items, comprising articles, conference papers, reviews, articles in press and book chapters.
- The resulting list was further refined, with the selection restricted to articles published in peer reviewed journals, considering that, according to Ramos-Rodríguez and Ruíz-Navarro (2004), these articles represent certified knowledge, that is, research that has been submitted to the critical review of researchers of the same field of knowledge and that has obtained their approval for publication. 57 documents remained in the list generated by Scopus.

The data indexed at Scopus for these 57 documents was downloaded, to be added to the data to be obtained from the second search, described below.

The second search follows the example of Meinhardt, Junge and Weiss et al., (2018), in their review of the literature on organizational environment. These authors selected as their approach the identification of “seminal work and their subsequent dissemination” (Meinhardt et al., 2018, p.197). This second search was therefore conducted according to the steps described below:

- A search for the citations to Ocasio's article from 1997 in Scopus retrieved 1,149 items. An initial analysis of the results of this search revealed that many of them weren't relevant to this study, and additional criteria were deemed necessary to restrict the number of items.
- Item classified as belonging to subject areas not directly related to management (Computer Science, Arts and Humanities, Psychology, Engineering, Environmental Science, Mathematics, Medicine, Energy, Earth and Planetary Science, Neuroscience, Nursing, Agricultural and Biological Sciences, Chemical Engineering, Health Professions and Multidisciplinary) were excluded, after which 905 documents remained;
- As per the first search, documents that weren't articles published in peer reviews journal were subsequently excluded, resulting in 722 documents;
- The sample was further whittled down to consider only the remaining items that were indexed based on the “Attention” keyword and variations, such as “Attention-based View”, “Attention-based Views”, “Managerial Attention”, “Organizational Attention”, “Attention Based View” and “Organizational Attentions”, resulting in a total of 88 documents.

Data from the articles obtained in the second search was downloaded from Scopus and merged with the data obtained from the first selection. In total, 112 documents were added to the list of items to be reviewed.

The texts of the documents not previously obtained during the preliminary collection of articles on ABV were then downloaded and read, and from the textual analysis of all 112 articles the sample of documents for this review was selected. Two selection criteria were employed: the adoption of the ABV theoretical framework and the consideration of organizational environmental issues. In order to rule out studies with a weak connection with ABV, only empirical articles that had as their theoretical background at least one of the principles of ABV proposed by Ocasio in his seminal study were considered; as for



theoretical essays, only the ones exposing further developments of those principles were included. Regarding the organizational environment, only empirical studies and theoretical essays that addressed the impact of organizational environment opportunities, threats, changes or similar issues on managerial attention, or focused on internal organizational characteristics that could influence attention to the organizational environment were selected. Only 45 articles met both criteria, and, as a consequence, were ultimately incorporated in this review.

The 45 articles were then carefully studied; for each of them a summary was developed and an entry in a data-extraction table built using Excel was generated, following the recommendations by Transfield et al. (2003). The review of these 45 articles led to the identification of other studies on ABV that somehow escaped the search procedures described above. The full text of these additional articles was downloaded and the data for them retrieved from Scopus. An analysis of these article revealed different reasons for their exclusion from previous searches; for instance, the application of the rule that only articles indexed at the Scopus database by the word “attention” or related terms should be retrieved caused some articles from AMJ to be overlooked, as this journal doesn’t provide keywords and Scopus, differently from ISI Web of Science, doesn’t generate new ones. After the application of the same criteria employed to the selection previously downloaded articles, 18 were added to this review, resulting in a final list of 63 studies. Following the same procedures employed for previously selected studies, summaries and entries in the data-extraction table were generated for these additional articles.

The data collected from the 63 studies was synthesized through a narrative review (Transfield et al., 2003), presented in the next section. Due to the limitations of an article length, the review addresses only the studies directly related to themes of my research, namely the principles of ABV, environmental stimuli, managerial attention and strategy formulation.

4 Results and discussion

4.1 Structuring of organization attention in ABV

In his original proposition of ABV, Ocasio (1997) explicitly links the information processing and behavior of individuals to the organizational structure of firms. And the primacy clearly rests with the organization, as “what particular context or situation decision-maker find themselves in, and who they attend to it, depend on how the *firm’s rules, resources, and social relationships regulate and control the distribution of attention and allocation of issues, answers, and decision-makers into specific activities, communications and procedures*” (Ocasio, 1997, p. 188, emphasis added by the author). Several scholars that applied ABV in their studies sought to empirically confirm and theoretically expand this approach. In our sample of articles of ABV and environment, Crilly and Sloan (2014), for example, identified organizational architecture as a driver of corporate attention to a wide range of stakeholders, based on the attention distribution across the firm and on the interplay between top managers and their subordinates engaged in attending to stakeholders. Vissa, Greve and Chen (2010) investigated the effects of organizational form on attention and decision making, contrasting how Indian firms affiliated with business groups and unaffiliated firms evaluate performance and react by adjusting their internal technology search and external market search. The authors found out that firms unaffiliated to business groups focus their attention and rely exclusively on internal (i.e., historical) performance in setting aspirations, while business group affiliates are more externally focused while setting aspirations for market search, but like unaffiliated firms they show an internal focus for R&D search.

To Ocasio (1997), the distribution of attention among multiple functions and organizational levels in a large firm is an inevitable consequence of the division of labor in social organizations. Complex organizations demand distributed cognition and information



processing in order to notice and interpret the large number of cues from the environment, and to coordinate the activities of individuals and groups in response to them. Distributed attention also facilitates the routinization and simplification of tasks, speeding up the decision-making process. The structural distribution of attention, however, also has negative effects, as pointed out by Rerup (2009) in his research on the link between attention to weak cues and learning from a crisis. He remarked that attention allocation approaches “can prevent organizations from recognizing weak cues about topics...narrow attention to a few selected issues potentially reduces an organization’s ability to detect subtle changes in both existing and emerging issues” (Rerup, 2009, p. 877). In order to overcome the downsides of distributed attention, organizations must practice "attention triangulation", blending three different dimensions of attention to grasp the same issue: stability, vividness, and coherence. Joseph and Wilson (2017), in their case study of a technological breakthrough at Motorola, also pointed out the importance of bottom-up, or stimulus-driven attention processing to enable firms to break away from established patterns of structural, top-down, or schema-driven processing that may constrain their ability to notice, interpret and react to emerging environmental signals. Their study establishes organizational tensions as both a consequence and cause of the structural distribution of attention.

The consequences of attention allocation among different levels in the firm’s structure is a subject tackled in a theoretical essay by McMullen, Shepherd and Patzelt (2009), in which they proposed a model to explain why appeals by middle managers for top managers to attend to specific threats of emerging rivals go unheeded. The authors suggested that differences in regulatory *foci* of different structural positions within the firm influence the allocation of attention to competitive intelligence (CI), creating a certain "dissonance" in threat perception and attention between the middle-level manager(s) directly responsible for CI and the senior management of the firm. The role of middle managers was also studied by Ren and Guo (2011), who in their theoretical essay examined the strategic role of middle managers in the corporate entrepreneurial process from an attention-based perspective. They posited that middle managers, constrained by the attention structures of the firm, prescreen entrepreneurial opportunities from lower organizational levels and attend primarily to those that align with the strategic orientation of the firm.

Some scholars extended the ideas contained in Ocasio’s original paper to the external ties of a firm. Maula, Keil and Zahra (2013) investigated whether and how interorganizational relationships guide top managers' attention either to or away from technological discontinuities. The authors found out that heterophilous ties through corporate venture capital (CVC), which connect senior management to high-status venture capitalists through co-investments, have a special role in directing top managers' attention to technological discontinuities and related business opportunities. The authors concluded that corporations can direct top management's attention to technological discontinuities by creating an appropriate external structural context for a firm. This perspective was further advanced by Oh and Barker (2018), who investigated whether social ties have influence in the process of strategic imitation, examining the effects of CEO outside directorships on R&D spending. They found out that CEOs pay attention to and imitate the R&D intensity of tied-to firms in their own firm’s R&D decisions. The results showed evidence of selective attention/imitation: CEOs have a stronger propensity to imitate when they have longer tenure as a director of a tied-to firm and when the tied-to firm is performing well.

A few studies on structural allocation of attention focused on managerial information systems, tools employed by firms to control and direct the attention of managers to specific issues and answers (Ocasio, 1997). Bourmistrov and Kaarbøe (2017) showed via a case study of a telecommunications provider how change to a management accounting system (MAS) failed to integrate top and line managers’ attention toward common issues, creating a "tension



in attention". On a similar vein, Yu, Engleman and Van De Ven (2005) analyzed the time that senior managers in one unit of a large healthcare firm formed after a merger spent discussing various integration topics and issues in their meetings from 1995 to 2002. The paper shows that senior managers of the focal unit attended primarily to integration within the unit, with little attention to linking that unit with the larger organization or to the external environment. A main contributor to this internal focus was the firm's accounting system, that did not allocate to the unit the financial contributions it made to others divisions of the firm, and, as a consequence, attributed to the focal unity recurring losses. The recurring losses became a perennial problem and focus of attention, and a cause of repeated attempts by the management of the focal unit to reduce costs and increase revenues, in some occasions adopting initiatives that were contrary to the overall firm strategy (and an additional source of interfirm conflict).

4.2 ABV and managerial cognition

When he proposed ABV, Ocasio aimed to rediscover the central role of the organization's social structures in channeling and distributing the attention of managers, as originally proposed by Simon (1947) (Ocasio, 1997). Some authors interpreted Ocasio's proposition as a call to place a lower importance on the role of managerial cognition in organizational attention. Ferreira (2015), citing Hung (2005), for example, stated that "according to ABV, *cognition and action are not predictable on the basis of individual characteristics*, but are consequences of the situations in which decision-makers find themselves, such that attention is linked to the immediate context in which cognition and action are situated" (Ferreira, 2015, p. 132, emphasis added by the author). Several other researchers, however, have enriched the ABV with perspectives that bring back managers, personal traits and cognition to the forefront, reinstating their relevance in the application of ABV to organization studies.

Arguably considering the complementary aspects of ABV and of the upper echelons theory (UET), both derived from the bounded rationality theme of the Carnegie School (Cyert & March, 1963; Gavetti, Levinthal & Ocasio, 2007; March & Simon, 1958), several authors incorporated concepts of UET, such as the consideration of demographic characteristics of top management teams (TMT) or of the CEO, in their studies of managerial attention.

Souitaris and Maestro (2010) introduced the concept of polichronicity, defined as the extent to which team members mutually prefer and tend to engage in - pay attention to - multiple tasks simultaneously or intermittently instead of one at a time and believe that this is the best way of doing things. They studied the impact of TMT polichronicity on strategic decision speed and comprehensiveness and, subsequently, its effect on new venture financial performance. They found out that that TMT polichronicity has a positive effect on firm performance in the context of dynamic unanalyzable environments, arguing that TMT polichronicity is an important concept to introduce to strategy research in attention, because it reveals and reflects how top managers allocate their own time.

Surroca, Prior and Giné (2016) employed a panel data extension of Data Envelopment Analysis (DEA) to gauge CEOs' focus of attention on cognitive groups, defined as groups of firms in which the CEOs focus their attention on similar strategic elements when seeking to maximize their firm's competitive advantage. The authors identified groups of CEOs who share similar attention focus and also found support for a relationship between cognitive groups and performance.

Tuggle, Schnatterly and Johnson (2010) investigated whether heterogeneity on a board of directors influences discussion of entrepreneurial issues in board meetings. They found that tenure variance, firm/industry background heterogeneity, and the proportion of directors with output-oriented backgrounds are positively associated with a board's discussion of entrepreneurial issues; these discussions are also positively correlated with factors such as firm/industry heterogeneity in the board and industry dynamism, among other factors.



Faultlines within the board, defined as “the hypothetical dividing lines that may split a group into subgroups based on one or more attributes” (Lau & Murnighan, 1988, p. 328) also play a role: weak faultlines increase and strong faultlines decrease such discussion. Meeting informality moderates these relationships: functional background heterogeneity decreases discussion of entrepreneurial issues, but the proportion of directors with output-oriented backgrounds and strong faultlines increase it.

Managerial discretion, a theme strongly associated with UET (Hambrick & Finkelstein, 1987; Wangrow, Schepker & Barker, 2015) was also the subject of a theoretical essay by Hutzschenreuter and Kleindienst (2013), who identified managers as the driving force of discretion. They concluded that although the context sets the basic constraints on the availability of discretion, it is the manager’s allocation of attention that is ultimately responsible for the actual degree of discretion. The allocation of scarce and limited managerial attentional resources is driven not only by personal, but also by relational and situational characteristics. They also pointed out factors that may influence the extent of managerial attention to stimuli from the external environment or to organizational issues.

Another area explored by the scholars that addressed the managerial cognition aspects of ABV was the interpretation of external events either as opportunities or threats. Barreto (2012) confirmed the use of the “opportunity prospect rule” – a set of rules based on simplified representations of the environment that decision-makers use to evaluate an opportunity – by decision-makers when attending to multiple choices in the expansion of bank branch networks, in the aftermath of deregulation in the Portuguese bank sector.

Barreto and Patient (2013) studied why managers in the same firm differ in their attention to opportunity versus threat aspects of the same exogenous shock. Their research shows that managers pay more attention to one or the other depending on their contextual political interests and cause-effect understandings, derived from specific experience in a domain. The attention paid to opportunity or threat aspects of the shock leads to positive versus negative early beliefs regarding the shock. In turn, these early beliefs can activate attentional mechanisms that reduce the ambiguity of the event, triggering selective attention toward aspects of the shock that are consistent with these early attitudes. According to the authors, “attention...depends on characteristics of both the stimuli and the person directing attention” (Barreto & Patient, 2013, p. 688).

In a manner similar to Joseph and Wilson (2017), Shepherd, McMullen and Ocasio (2017) developed, in a theoretical article, a model explaining how top managers form opportunity beliefs for strategic action. The authors consider that top managers’ knowledge structures direct top-down attention to aspects of the firm’s environment that are expected to be relevant. However, bottom-up processes of attention allocation—where striking aspects of the environment capture attention whether they are expected or not—supplement top-down processes. Knowledge structures then partially determine whether top managers notice incremental, architectural, or discontinuous changes in the environment.

4.3 ABV and the environment

Although the influence of the organizational environment on a firm’s strategies, structures and performance has been an enduring field of study, the research conducted thus far has failed to generate a common and consistent definition for the concept and its major characteristics (Boyd, Dess & Rasheed, 1993; Meinhardt, Junge & Weiss, 2018). Several scholars have proposed dimensions to describe environmental characteristics, such as homogeneity (Dill, 1958), turbulence (Emery & Trist, 1965), dynamism (Lawrence & Lorsch, 1969), complexity (Child, 1972) and velocity (Bourgeois & Eisenhardt, 1988), to name a few. Meinhardt et al. (2018), in their extensive study of past publications on organizational environment, concluded that the mostly frequently used are the ones proposed by Dess and Beard (1984): dynamism, munificence and complexity. These dimensions “have been used



frequently...and have maintained a clear lead over other dimensions.” (Meinhardt et al., 2018, p. 203). As a consequence, these will be the dimensions considered in this review.

Dynamism is the dimension addressed by most of the articles that investigate effects of the organizational environment in ABV. Besides the aforementioned article by Tuggle *et al.* (2010), Abebe (2012) examined the relationship among executive attention patterns, industry dynamism and corporate turnaround performance in firms that experienced decline and turnaround. He found that declining firms operating in dynamic industry environments tend to improve their turnaround performance when executives focus their attention more on market-related sectors (i.e. customer, competitor and technological sectors). Conversely, corporate turnaround performance of declining firms seems to be adversely affected by a disproportionate focus on input-related sectors of the task environment (i.e. suppliers and creditors).

Bouquet, Morrison and Birkinshaw (2009) studied the performance consequences of international attention, defined by them as “the extent to which headquarters executives in the multinational enterprise (MNE) invest time and effort in activities, communications, and discussions aimed at improving their understanding of the global marketplace” (Bouquet et al., 2009, p. 108). The study revealed that attention headquarters executives paid to their subsidiaries has an inverted U-shape relationship with MNE performance. Its effects are beneficial up to a point in which the loss of attention to other strategic issues (assuming a limited cognitive capacity of headquarters executives) negates the benefits of the extreme focus on international attention. Bouquet et al. (2009) also found that the performance benefits of international attention increase with three categories of moderating factors: the international assignment experience of headquarters executives, the independence of value-adding operations at local subsidiaries, and the degree of industry dynamism.

Cho and Hambrick (2006) investigated the transformation of industry attention patterns following an environmental shift (airline deregulation), and the role of TMT composition and incentive systems in that process. The results show a sharp increase in attention to entrepreneurial problems (compared to engineering problems) as a consequence of the higher levels of dynamism in the airline industry after the deregulation, and indicate that managerial attention plays an important role in converting managerial demography and pay arrangements into company strategy.

Nadkarni and Barr (2008) developed and empirically tested an integrated model that establishes relationships between industry velocity, the structure of top management's cognitive representation of the environment (attention focus and environment-strategy causal logics), and the speed of response to environmental events. They found that industry velocity influences the structure of cognitive representations, which in turn influence the speed of response to environmental events. The results support their contention that both industry and cognition variables are critical in developing explanations of strategic actions.

Zheng, Liu and Gong (2016) empirically studied the relationship between leader attention scope (LAS) and innovation ambidexterity (exploratory innovation and exploitative innovation) through the mediating role of transformational leadership (TL) behavior. The moderating effect of environmental dynamism (ED) on the relationship between TL and innovation ambidexterity was also examined. The authors concluded that LAS has a positive effect on innovation ambidexterity, and the relationship is partially mediated by TL. ED negatively moderates the relationship between TL and innovation ambidexterity.

4.4 ABV and strategy formulation

Some of the empirical articles reviewed connect managerial attention with performance outcomes, such as corporate turnaround performance (Abebe, 2012), subsidiary performance (Ambos & Birkinshaw, 2010) or MNE performance (Bouquet et al., 2009). Quite a few, however, established a relationship between attention and the formulation of



strategies, either directly or through the mediating effect of another variable. These later studies included the aforementioned articles by Cho and Hambrick (2006), that addressed entrepreneurial strategy, and Zheng *et al.*, 2016), that dealt with strategies in innovation.

Blettner, He, Hu and Bettis (2015) developed and empirically tested a model of learning from organizational experience that explains heterogeneity of attention allocation to different reference points in adaptive aspirations and strategic decisions. In a longitudinal study of German magazines belonging to different competitive groups, they concluded that early in their life cycle and as they or their parent company age, organizations tend to focus more on their own aspirations; however, when at the verge of bankruptcy, they increase their attention to competitors' performance and adopt imitative strategies.

Durand and Jacqueminet (2015) studied how subsidiaries respond to normative demands related to corporate social responsibility (CSR) strategies formulated by their headquarters. They found that subsidiaries pay selective attention to demands from headquarters, and conform with new CSR practices depending on their context – the behavior of their local market competitors and their internal peers (other subsidiaries of the MNE). When competitors demonstrate high conformity with local regulations, the subsidiary increases its attention to the demands of local stakeholders and reduces attention to demands from headquarters. When internal peers show high conformity to the internal norms, however, the focal subsidiary increases its attention to both headquarters and local constituencies demands. The authors concluded that the influence of peers' conformity on subsidiaries' implementation of practices was a strategic response to internal and external competitive threats, mediated by managerial attention.

Eggers and Kaplan (2009) investigated the relevance of the direction of CEO attention to the timing of the entry into the fiber optics (a technological breakthrough) product market by incumbent telecommunications firms. They found that attention toward the emerging technology and the affected industry is associated with faster entry, and attention to existing technologies is associated with slower progress; CEO attention to the emerging technology amplify the effects of industry orientation.

Kim, Fairclough and Dibrell (2017) studied whether and to what extent family-influenced firms (FIFs) differ from their nonfamily counterparts in terms of the relationship between managerial attention to natural environmental issues and environmental actions. Their analysis indicate that family firms positively moderate the relationship between top managers' attention to natural environmental issues and proactive environmental action. Nonfamily firms demonstrate less proactive environmental action as their attention to environmental issues increases, suggesting greenwashing. Attention and action behaviors in family firms are intimately connected with their desire to preserve socioemotional wealth and indicate a lower propensity to greenwash, whereas nonfamily firms' short-term financial objectives may motivate a different response pattern, intimating that FIFs and non-FIFs organizational attention and actions are motivated by different logics.

5 Conclusion

The objective of this research was to identify emerging developments in the application of the principles of ABV to organizational environment and strategic formulation issues, to orient and support future empirical research. To achieve this goal, 63 articles from peer-reviewed journals were reviewed, allowing the identification of some trends and areas in which further studies are warranted. The literature reaffirms the influence of organizational factors on managerial attention to environmental trends, events and shocks, and on the strategic moves firms initiate to respond to them. Papers in this review identified the effects of organizational form (Crilly & Sloan, 2014), affiliation to business groups (Vissa *et al.*, 2010) and management information system (Bourmistrov & Kaarbøe, 2017; Yu *et al.*, 2005) on managerial attention. Attention allocation also has negative consequences, such as reduced



ability to recognize weak clues from the environment (Rerup, 2009), “dissonance” in threat perception (McMullen *et al.*, 2009) and the loss of entrepreneurial opportunities (Ren & Guo, 2011). One line of research that may be promising is the examination of the positive and negative effects of the distribution of care in a company - no study in our sample has addressed them simultaneously.

Several authors seek to incorporate the consideration of managerial cognition to the studies on ABV, complementing the emphasis the original theoretical proposition placed on the organization’s social structures. Demographic characteristics and faultlines (Tuggle *et al.*, 2010), polichronicity (Souitaris & Maestro, 2010), cognitive groups (Surroca *et al.*, 2016) and knowledge structures (Shepherd *et al.*, 2017) were some of the themes of the papers reviewed, with a focus on CEOs and TMTs. The study of the effects of both organizational factors and managerial cognition on attention, as investigated by Barreto and Patient (2013), may be an interesting avenue for future research.

The papers reviewed that explicitly investigated the relationship between managerial attention and aspects of the organizational environment (Tuggle *et al.*, 2010; Bouquet *et al.*, 2009; Cho & Hambrick, 2006; Nadkarni & Barr, 2008; Zheng *et al.*, 2016) addressed the dimension of dynamism. Considerations of environmental munificence or its opposite, scarcity, were not significant, and this dimension was relegated to the role of a control variable, at best (e.g. Kim *et al.*, 2017). New studies addressing environmental munificence would be especially useful for the advancement of the management science in emerging countries.

Finally, the connection of managerial attention to strategy would benefit from further studies of the influence of the selective attention of managers on the strategic choices of firms, as only a few papers in this review went beyond the confirmation of the performance effects of managerial attention (Cho & Hambrick, 2006; Blettner *et al.*, 2015; Durand & Jacqueminet, 2015; Eggers & Kaplan, 2009; Kim *et al.*, 2017).

The limitations of the present study open opportunities for future research. The need to keep manageable the number of articles to be reviewed led to the application of successive selection criteria, that winnowed the total of items down from more than 1,000 to 63. Although the procedures employed have support in the literature, the use of an alternative method, such as a bibliometric study, could supplement the narrative review performed with additional insights into ABV, especially on the co-citations and couplings among studies and researchers that focus on the main themes of organizational environment and strategic formulation. A bibliometric study could also help identify connections among different research streams and metatheories that are used by scholars dedicated to these themes.

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