



Attention process: A multilevel perspective

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Abstract:

The attention-based view of the firm is a versatile theoretical perspective of organizational behavior. Despite its complexity, it comprises a set of principles, elements and mechanisms capable of explaining organizational behavior phenomena not only at the business firm level, as originally proposed, but also at other levels. We argue that attentional processes have functional equivalence at the team, organizational and social movement levels and propose a multilevel model of attention. By describing the elements of attentional processes within and across different levels of analysis we contribute to theories of attention, to the field of organizational behavior and also to the literature on social movements. A multilevel model of attention enlarges the scope of research on organizational attention and provides a fuller understanding of the relationship between attention and organizational behavior.

Key words: organizational attention, multilevel theory, teams, organizations, social movements

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Introduction

Attention is an inherently multilevel phenomenon (Kahneman 1973, Ocasio 1997, and Jones and Baumgartner 2005). As argued by Ocasio (1997), attention is a two-level phenomenon that involves a decision-maker on one level (i.e. the individual) and the situation in which the decision-maker finds himself on another level (i.e. the organizational). Therefore, the approach adopted by Ocasio (1997) to expose the elements and mechanisms underlying the attentional process restricts the ABV to explaining organizational behavior exclusively at the level of the business firm. On the one hand, the constructs and definitions of the ABV are coherent and consistent with the author's aim to design a process model of organizational attention to explain firm behavior. On the other hand, the approach is disadvantageous in two ways. First, it confines the model and its core constructs to elements pertaining exclusively to the organization. Second, it neglects cross-level interactive effects across other levels of analysis. Limiting the ABV to analysis at the firm level does not do justice to the explanatory power of the model of situated attention. A closer examination of the constructs adopted by Ocasio (1997) indicates that the ABV approach can also explain organizational behavior at lower and higher levels of analysis. In this paper, we argue that the ABV can be generalizable (Chen, Bliese and Mathieu 2005) to explain organizational behavior at team, organization and social movement levels.

From the standpoint of the ABV, organizations are social systems of collective action that structure and regulate individuals' cognition and action through rules, resources and social relations (Ocasio 2001). We contend here that the ABV contains the elements necessary to explain organizational phenomena at the level of the organization *as well as* at the team and social movement levels. The construct proposed by Ocasio (1997) is higher-level or aggregate in nature as it "...is construed as some form of combination of the lower level units" (Chan 1998, p. 235). This helps us to establish the functional relationship between attentional processes in other collectives such as teams and social movements. Additionally, we argue that acknowledging both the multilevel *and* the cross-level character of the attentional process contributes to the field of organizational studies by emphasizing its dynamic nature. As we describe further on in this paper, addressing concepts such as cross-level attentional processes, sedimentation and percolation serves to advance the field of organizational studies in which researchers are currently trying to cope with the "increasingly permeable and blurry boundaries" among collectives (Davis Morrill Rao Soule 2008, p. 393, and Zald 2008).

Following Rousseau (1985) and Johns (1999) we propose a multilevel theory of attentional process, which is generalizable to other levels of analysis and that is functionally equivalent (Morgeson and Hofmann 1999) at team, organization and social movement levels. Functional equivalence exists when two (or more) constructs lead to the same outcome, regardless of differences in structure and manifestation (Morgeson and Hofmann 1999). According to the specialized literature, a multilevel approach based on functional equivalence of constructs contributes to parsimony and increases the breadth of the theory (Chan 1998, and Chen, Bliese and Mathieu 2005).

We do not intend to say that an attentional process approach is capable of explaining every phenomenon in, at, and around organizations. What we propose here is simply that an attention-based view is capable of explaining various organizational phenomena at various levels of analysis in

addition to the level of analysis currently used (i.e. the business firm level). The theoretical approach we put forward here essentially addresses the following question: *to what extent is the ABV generalizable to social collectives at lower or higher levels of analysis than the business firm?*

At the level of the team, the functional analysis of attentional process has been facilitated by previous research that directly addresses the role of attention in teams (Karau and Kelly 1992, and 2003, Hinsz, Tindale and Vollrath 1997, Kelly and Karau 1999, Kerr and Tindale 2004, and Kelly and Loving 2004). Within the ABV framework, some studies have also addressed the relationship between attention at the team level and organizational behavior (Levy 2005, Cho and Hambrick 2006, Nadkarni and Barr 2008, Vissa and Chacar 2009, and Beck and Plowman 2009). By integrating these research streams, we not only expand the span of the ABV to the level of the team. We also provide a distinctive theoretical framework of attentional processes at the team level that is more explicit about the elements and mechanisms influencing attention in and around teams.

In addition to the general increase in the use of literature on social movements in organizational research (Campbell 2005, and Davis, Morrill, Rao and Soule 2008), there are two main reasons for our choice to focus on social movements (as opposed to other inter-organizational levels of analysis) to theorize about attentional processes at higher-levels of analysis. First, the social movements literature adopts a certain set of elements that are homologous to the elements of the attentional process model (Campbell 2005). According to social movements theory, both agency and structure determine movements' success and characteristics of the issues or causes alone cannot explain responses from targeted organizations (King 2008b). Additionally, resource mobilization, framing strategies and political opportunity structures, which are constructs central to this literature, are consistent with some of the elements proposed by the ABV. Second, we believe that an attentional perspective can be a useful framework for understanding the processes and efficacy of social

movements (King, Bentele and Soule 2007, Kaplan 2008b, and Sine and Lee 2009) an area as yet underdeveloped by organizational scholars. Therefore, our study contributes to this literature by responding to recent calls for more systematic theory building on the dynamics and outcomes of social movements (Davis, Morrill, Rao and Soule 2008, and Zald 2008).

Our study offers several theoretical contributions. First, we contribute to the field of organizational studies by proposing a fertile, multilevel perspective of attentional process that is capable of explaining a diverse set of organizational outcomes at the levels of the team, organization and social movements. In doing so, we tackle some of the limitations of studies of attention such as the focus on a two-level, structure-driven process (Gavetti, Levinthal and Ocasio 2007). Whereas the ABV refers in large part to the organizational-level effects on individual attention, our multilevel perspective highlights the embedded and nested character of the attention process. Our work integrates contemporary knowledge about embeddedness and the impact of larger social contextual effects. It also incorporates the multiplicity of lower and higher effects on the situational context of decision-makers. Moreover, our detailed description of the attention process broadens the structural perspective exposing some formal and informal mechanisms in and across levels of analysis that ultimately influence organizational behavior.

Second, the framework we put forward spans different levels of organizational behavior, offering a broader and deeper, yet complex (Klein, Tosi and Cannella 1999), understanding of how attention influences and is influenced by collectives. Instead of limiting the ABV to business firm phenomena, we argue that the multilevel perspective of attentional processes enlarges the scope of research on attention and collective behavior. Third, we describe the cross-level linkages of attention. We contend that the percolation and sedimentation processes integrate micro and macro aspects of the attentional process in order to explain organizational behavior. In the percolation process, attention

seeps into higher levels spreading throughout teams, organizations and social movements and, in the sedimentation process, attention drops from higher to lower levels, leading to the sedimentation of attentional elements in organizations and teams. Thus, we suggest that our multilevel perspective of attention advances the field of organizational studies by offering a comprehensive framework that helps us to understand how social, economic, institutional and cultural aspects and attentional processes interact and influence each other (Thornton 2001). Finally, as was highlighted above, the multilevel theory of attention also contributes to the literature on team and social movements. It offers a distinctive and dynamic framework for understanding team and social movements processes and provides an explanation of organizational behavior at these levels of analysis.

To support our argument for the necessity of a multilevel theory, we briefly present an overview of current, but sparse research on the ABV at the levels of the team and social movements. Next, we address the core assumptions of the attentional process based on the model of situated attention and firm behavior originally proposed by Ocasio (1997). Following that, we discuss our multilevel perspective on attention. Although attentional processes manifest themselves differently at different levels of analysis, we argue that they have the same function at team, organizational and social movements levels. Accordingly, we claim that to explain collective behavior, one needs to explain how attention is situated and distributed in the collective, whether that collective is a team, an organization, or a social movement. To build our multilevel perspective of attention, we first discuss the function of the construct and then expose its structure. Later, we discuss the cross-level mechanisms that affect attentional process at the levels of the team, organizations and social movements. We conclude this paper with a concise explanation of the canonical elements of the multilevel perspective of attention.

ABV research at team and social movements levels

Despite the prevalent use of the ABV to explain organizational behavior at the organizational level, we have identified a few recent studies that either refer to or fully adopt the model of situated attention in an analysis of organizational behavior at both team and social movements levels.

ABV research at team level

Levy's (2005) empirical results indicate that attention patterns at the top management team level influence the international strategy of business firms. Cho and Hambrick (2006) use the ABV to explain how environmental changes affect top management team composition, which, in turn, affects organizational attention. In these two studies, the authors identify attention orientation as a property of the top management team. Nadkarni and Barr (2008) also identify the focus of attention as a team property, whereas Beck and Plowman (2009) emphasize the relevance of middle managers' focus of attention on organizational interpretation. Vissa and Chacar (2009, p. 1182) point out that "decision-making within the entrepreneurial team is consistent with the attention-based view of the firm" and show the complementarities of various aspects of the attentional process in their effort to explain entrepreneurial teams performance. Finally, Tuggle, Schnatterly and Johnson (2010) study attention orientation as a property of boards of directors.

In each of these studies, the authors highlight the effects of context on attention. However, with the exception of Tuggle et al. (2010), none of these studies present an analysis of the effects of concrete and contextual structures on attention at the level of the team. Moreover, in spite of Ocasio's (1997) remark that demographic characteristics are less important than the interactions and communication between team members, these studies focus on demographic characteristics to predict attention. Considering the cross-level nature of the ABV and its emphasis on the situated character of

organizational attention, contextual effects (Johns 2006 and Griffin 2007) are an integral part of research on attention. Hence, studies that do not explicitly address cross-level effects on attentional process at team level are inherently limited.

ABV research and social movements

At the social movements level of analysis, scholarly adoption of an attention perspective is even more rare. Kaplan (2008b) combines social movements literature and the ABV to explain strategy making. Sine and Lee (2009) emphasize the role of attention in explaining the emergence of new markets in the context of social movements. It is also worth mentioning the research of King, Bentele and Soule (2007), which aims to explain the effects of social movement tactics on Congressional attention. In their research, they use the literature on social movements to explain fluctuation in attention to ‘right’ issues in the United States Congress. Though their argumentation does not focus on attention, it is of particular interest here due to the explicit link the authors draw between social movements and attention. This and other recent research on social movements (King 2008b, Briscoe and Safford 2008, and Weber, Rao and Thomas 2009) indicate some degree of structural and functional convergence with the literature on organizational attention.

The common ground of research on organizational attention is that it is crucial to understand the process of attention at the organizational level in order to explain organizational behavior in light of the various structural contingencies that have an impact on organizational outcomes. Therefore, the explanatory power of the ABV lies in the function of the construct proposed by Ocasio (1997). In particular, the theoretical role of the model of situated attention is to provide an inclusive conceptual framework of the elements and mechanisms that configure the attention process that ultimately determine how organizations move. We take this claim further by contending that to understand organizational behavior, it is crucial to have a full understanding of the attentional processes in and

around organizations. Moreover, we argue that the function of the model of situated attention, which is primarily based on the role of contextual and concrete structures, is equivalent across team, organization and social movement levels.

Attention process: assumptions of the multilevel perspective

This study is based upon a set of five assumptions that support the multilevel perspective of attentional processes. Namely, the attentional process is a *primer for organizing, contested, structured, instrumental and situated*.

First, attention is a *primer for organizing* (Ocasio and Joseph 2008, and Rerup 2009). According to Weick (1979, p. 3), “to organize is to assemble ongoing interdependent actions into sensible sequences that generate sensible outcomes”. Teams, organizations and social movements are collectives comprised of a series of events and goings on that give rise to the emergence of collective constructs (Morgeson and Hofmann 1999). These *interacts* are organized by contextual and concrete structures that narrow down the number of possible actions (Morgeson and Hofmann 1999). We borrow the term *interacts* from the work of Weick (1979, p. 89) because it captures an important aspect of attention, which is interdependence. In theories of attention, interdependence refers to the idea that one’s attention is a function of others’ attention (March and Olsen 1976). Thus, *interacts*, which are a product of the idea that “the behaviors of one person are contingent on the behaviors of another person(s)” suits our objective well in this instance.

Moreover, Weick’s (1979) definition of behavior in terms of process of attention provides a distinctive and influential perspective. While he concentrates on the cognitive and social psychological processes that lead organizational members to notice and interpret their environment

and act upon it, the perspective proposed by Ocasio (1997) emphasizes the structural effects of the situation on organizational attention. The structural character of the attention process, together with its focusing and selection mechanisms, provides the primer for organizing collectives (Morgeson and Hofmann 1999). Organizing is dependent upon the intertwined linkages between actions and structures over time, and the model of situated attention exposes how distribution of attention works to organize a pattern of action that is a product of the interplay between issues and answers, attention structures, and procedural and communication channels (Dutton et al. 2006, and Ocasio and Joseph 2008).

A second assumption reveals the *contested* nature of the attention process. Accordingly, *interacts* are, among other things, characterized by a diverse set of conflicting interests and divergent demands. Additionally, attentional processes are embedded in social, cultural and economic environments in which there are a broad variety of issues competing for attention (Ocasio 1997, Ocasio 2001, Hoffman and Ocasio 2001, Hansen and Haas 2001, King, Bentele and Soule 2007, Bouquet and Birkinshaw 2008, and Bouquet et al. 2009). In this market for attention, what matters most is not the objective characteristics of the issues, but the manner in which players and decision-makers participating in the process of attention enact the issues vying for attention (Hoffman and Ocasio 2001, and King, Soule and Bentele 2007). Moreover, the number of issues on the demand side tends to be infinite, whereas the supply of attention is both limited and scarce (Simon 1947). This imbalance between demand for and supply of attention has some important consequences for collectives. Teams, organizations and social movements are collectives that can be viewed as loose structures of conflicting demands and interests competing for attention (Morgeson and Hofmann 1999). As suggested by Narayanan and Fahey (1982), these conflicts are never completely resolved, yet there is a prevailing need to balance attention (Rerup 2009).

Our third assumption suggests that conflict resolution is both based and dependent upon the *structured* nature of attention. Attentional processes consist of structural mechanisms of integration and selection that ensure some degree of coherence of focus of attention among members of the collective (Karau and Kelly 1992, and 2003, and King 2008a). Attention structures concurrently provide members with the focus and intermediary objectives that motivate action (Simon 1947) and also prevent attention from being diverted to unimportant or marginal issues (Cyert and March 1963). These structures are essential to the attentional process. They constitute elements that not only guarantee that the attention of the collective is balanced, but also guarantee coherence of attention focus among collective members (Hinsz, Tindale and Vallrath 1997, and Rerup 2009).

Another relevant assumption of the process of attention is related to the *instrumental* character of attention: one pays attention to get it back; one calls attention in order to be attended to. Hence, the mechanisms underlying attentional processes at different levels are motivated and intentional. Attention structures and other elements of the process align individual and social cognitions and provide incentives for attention and action (Kaplan and Henderson 2005, Kaplan 2008a). As such, elements of the attentional processes are manifestations of truces that are negotiated among the members of the collective (Nelson and Winter 1982). Attention structures and practices are dynamic capabilities that lead to value creation (Bouquet et al. 2009, and Rerup 2009). These routines, which put cognition, capabilities and incentives together (Kaplan 2008a), and match prior experience, beliefs and values (Starbuck 1983) can be found at team, organizational and social movement levels because, at all these levels, they simultaneously facilitate interaction and create attention coherence among members and across levels.

Lastly, our fifth assumption suggests that attentional processes are *situated* (Hinsz, Tindale and Vallrath 1997, Ocasio 1997, and King, Bentele and Soule 2007). Although it is the individual who

ultimately pays attention to issues and answers, the focus of attention is dependent upon and a reflection of the context in which the individual finds him or herself (Ocasio 1997). Consequently, from an attentional perspective, the individual cognitive aspect of attention is attenuated and more emphasis is given to the contextual and contingent aspects of attention (Gardner, Dunham, Cummings and Pierce 1989, Hinsz, Tindale and Vollrath 1997, and Ocasio 2001). Players, resources, time and space are the dimensions of the context (Johns 2006 and Griffin 2007) in which the attentional process takes place. The resultant outcome is determined by the interactions between participants of the collective and also by the interplay between them as well as by the physical environment (Ocasio 1997). Thus, the attentional process "...is not property of autonomous individuals but results from prevailing characteristics of the situation." (Ocasio 2001, p. 51).

Attention process: a multilevel perspective

The cross-level nature of attention implies that a relationship exists between the construct at one level, and another construct at a different level (Rousseau 1985). As emphasized by Ocasio (1997), although it is the individual who ultimately pays attention, the attentional process is situated and affected by contextual aspects of the environment. Hence, attention is, in fact, embedded in a higher-level situation that affects, shapes and transforms the process (Johns 2006). As previously discussed, the vast majority of research on attention presents analysis conducted at the organizational level. Therefore, little is known about the cross-level effects of attention and how an attentional process at one level influences attention at another level or even how elements at different levels interact. This is partially justified by the original aim of the ABV and how it is presented. However, this limits the potential of the model of situated attention to explain organizational behavior at other levels of analysis.

We propose a multilevel perspective of attention (Rousseau 1985, Chan 1998, Morgeson and Hofmann 1999, and Chen, Bliese and Mathieu 2005) that improves our understanding of “how phenomena at one level of analysis are linked to those at another and, in so doing, provide a more rich and complete perspective of a given phenomenon” (Gupta, Tesluk and Taylor 2007, p. 888). In order to achieve our objective, we suggest that attentional process is isomorphic at the levels of the team, organization and social movement. According to literature on multilevel theory, “isomorphic constructs that span levels of analysis have a similar function or causal output but differ in their structure (Klein, Tosi and Canella 1999, p. 246). Scholars also suggest that isomorphic or functionally equivalent constructs exist when the functional relationships underlying the variables lead to the same output (Rousseau 1985, Chan 1998, and Morgeson and Hofmann 1999).

In spite of some differences in its structure across levels, the construct of attentional process maintains its function at the levels of the team, organization and social movements. Centering on the function of a construct generates a ‘level-free metric’ that extends to various levels of analysis. Provided that outputs of the construct are comparable across levels, “one can justifiably speak of collectives ‘thinking, ‘learning’, and ‘behaving’” (Morgeson and Hofmann 1999, p. 255). Therefore, by focusing on the function of the construct of attentional process, we extend the original formulation of the ABV and propose a multilevel theory that spans across the levels of teams, organizations and social movements.

Attentional process function – explaining collectives’ behavior

According to the ABV, attentional processes encompass the firms’ social and economic structures that create, channel and distribute the attention of decision-makers. Organizational behavior, in turn, results from the complex interaction of the various discrete and attentional processes situated in the organization. The effect of an attentional process is an *organizational move*, which is a “...myriad of

actions undertaken by the firm and its decision-makers in response to or in anticipation of changes in its external and internal environment” (Ocasio 1997, p. 201). It is important to mention that from an ABV standpoint, an organizational move may or may not be successful. For instance, if one is adopting the ABV to explain strategic planning, the organizational move is the actual strategy plan resultant from the attentional process of strategizing (Ocasio and Joseph 2008); whether or not the plan will be implemented is a different question (Barnett 2008). The ABV has been used to explain strategic moves as diverse as internationalization (Levy 2005, and Bouquet, Morrison and Birkinshaw 2009), innovation (Yadav, Prabhu and Chandy 2007, and Chen and Miller 2007) and mergers (Yu, Engleman and Van de Ven 2005).

We contend that attentional processes occur in collectives such as teams, organizations and social movements. Collectives’ social and economic structures create, influence and affect members’ attention. Similar to organizational behavior at the level of the organization, attention structures, in combination with the *interacts* of the collective members, expose the elements of the attentional process that convert environmental stimuli into a collective move in teams and social movements as well. In a nutshell, attention structures combine the elements that ultimately explain organizational behavior.

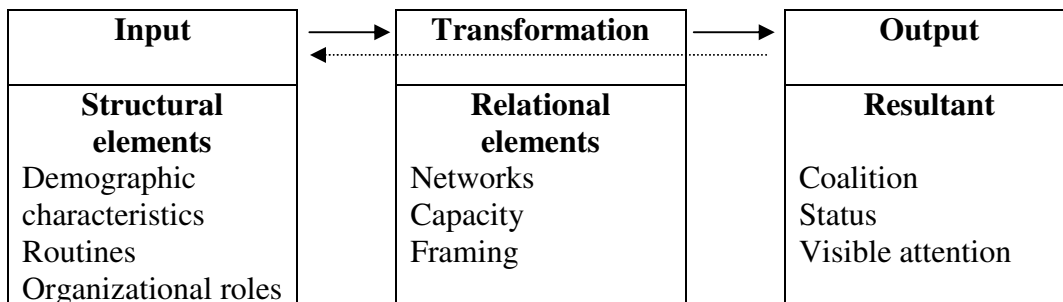
Proposition 1: Attentional processes occur at the team, organizational, and social movements levels of analysis in a functionally similar form.

Attentional process structure - elements of the multilevel approach to attentional process

In order to describe the attentional process structure, we divided its compositional elements according to their role within the process that contributes to the conversion of the raw stimuli into a collective move. In Figure 1, we list each constituent element according to its role in the process,

either as an input, transformation element, or output. Kahneman (1973) suggests that attention, as in any process model, has three main blocks of elements: input, transformation and output. The model of situated attention proposed by Ocasio (1997) can be analyzed and divided in the same manner. Accordingly, the first block of elements, labeled as input, is comprised of the repertoire of issues and answers available in the environment of decision and also the elements that regulate the focus of attention and determine the interests that motivate action. The second block, labeled as transformation, encompasses the set of elements that shape the focus of attention and provide the incentives and resources necessary for action. Finally, in the output block, we list some of the possible outcomes of attentional processes. These process blocks indicate the fluid, dynamic and emergent nature of attention (Kahneman 1973, Narayanan and Fahey 1983, and Ocasio 1997).

Figure 1: Attention process elements according to their role



Inputs of the multilevel attentional process

From a structural perspective of attentional processes, the emphasis lies on how contextual and concrete structures provide individuals with interests and identities that motivate action (Simon 1947). Structural elements of attention are embedded in and influenced by social, cultural and institutional environments. The attention structures are primarily constituted by members of the collective, their structural positions within collectives and also by the rules and resources available to

the collective (Ocasio 1997). Together, these dimensions create the incentives and the normative frames that shape environmental enactment and motivate action (Ocasio 1995).

Demography The influence of individual members on attention has been explored by researchers interested in the effects of demographic characteristics on the focus of attention. When studying the effects of top management team attention on global strategies of multinationals, Levy (2005) includes information about tenure and age of team members to control for demographic effects on attention. Cho and Hambrick (2006) study shows how the effects of industry tenure, experience, and background of top management team members impact attention orientation. Focusing on boards of directors, Tuggle, Schnatterly and Johnson (2010) also find that tenure and background affect attention to entrepreneurial issues. Marginson and MacAulay (2008) include controls for age, gender, education and tenure in their study testing economic and organizational dimensions on short-termism, which is the focus of managerial attention on short-term aspects of organizational performance. In her research on the determinants of organizational change, Kaplan (2008a) explored the role of CEO attention on firms' responses to technological changes. She adopts a context-specific approach to CEO attention, yet she includes some CEO demographic characteristics to provide a proxy measure for the effects of cognitions on situated attention.

In a collective, be it a team (Hinsz, Tindale and Vollrath 1997), an organization, or a social movement, representatives of different constituencies often have distinct objectives. Consequently, collective members may view information differently based on their pre-existing objectives. As is often suggested, demographic characteristics function as proxy measures for the expertise and knowledge of collective members (Karau and Kelly 2003). Alone, demographic characteristics are not capable of explaining the outputs of attentional processes because they do not capture the situated and context-dependent aspects of attention (Kaplan 2008a). However, as previous studies

have shown, they can constitute important inputs for attentional processes. The final effect of demographic characteristics is, as is the case with other elements of attentional processes, contingent upon other compositional elements of the model of situated attention (Hinsz, Tindale and Vollrath 1997, Cohen and Bailey 1997, Cho and Hambrick 2006, and Weber, Rao and Thomas, 2009). On one hand, demographic homogeneity has been identified as an important moderator for pluralistic ignorance in corporate boards because it increases shared attention focus. On the other hand, heterogeneity has been associated with internationalization (Levy 2005) and entrepreneurial orientation (Cho and Hambrick 2006).

Routines One of the elements of attention structures that can attenuate the effects of demographic characteristics on attention are the rules of game (Ocasio 2001), the set of norms, values and incentives that guide and constrain members of the collective (Ocasio 1997). Team processes, in general, are affected by instructions, procedural factors, roles and norms in addition to members' perspectives (Hinsz, Tindale and Vollrath 1997). Scholars suggest that attentional processes at the team level demand an inclusive understanding of the effects of group structure, which includes norms, team composition, role relationships, communication hierarchy and leadership style. Accordingly, "these structures could influence both what general cues [...] the group attends to during its interaction and what pieces of information [...] the group notices and discuss" (Karau and Kelly 2003, p. 198).

To be more precise regarding their role on the attentional process, we identify these formal and informal principles as routines (Corner, Kinicki and Keats 1994). "Action is driven by routines. Individuals attend to decisions when, and because, that is what they are expected to do" (March and Olsen 1976, p. 49). These routines contain some criteria for selection and they serve to induce collective members to attend to certain issues, while ignoring others (Simons 1991). They focus

attention by matching prior experience, values and beliefs (Starbuck 1983). Additionally, routines can constrain or enable noticing and attending (Dutton et al. 2006). Finally, routines serve to stabilize expectations, perceptions of the environment, the range of alternatives considered, and decision rules and premises (Gavetti, Levinthal and Ocasio 2007).

Information extracted from recruitment policies, mentoring programs, and other routines transmit the rules that orient and focus attention (Marginson and McAulay 2008). Additionally, routines provide information about the incentive systems through which interpretations are made (Kaplan and Henderson 2005). Routinization in teams, including planned staff meeting, agendas and prescribed practices increase the salience of situational cues for expected and planned responses (Hinsz, Tindale and Vollrath 1997, and Drach-Zahavy and Freund 2007).

In an ethnographic study on compassion, Dutton et al. (2006) identify a set of routines, such as customer and community services or harm notification rules that enable collective attention to human pain, which is a fundamental part of compassion organizing, as they theorize. Additionally, routines facilitate coherence of attention focus among team members and enhance decision-making effectiveness, as is shown by the simulation studies presented by Jett and George (2005). Routines can also be detrimental, however, as they have the capacity to limit attention to a narrow set of alternatives and make it more difficult to take notice of weak cues (Rerup 2009).

Organizational roles Another relevant input of the attention process is the organizational roles of members of the collective. As highlighted by Ocasio (1997), while routines play a central role on organizational attention, the availability of issues and allocation of attention is a joint product of structural elements that include the effects of structural positions. The role and the position occupied by the members of the collective affect attention because structural positions "... [allow] actors to

focus their attention on narrower patches of complicated reality” (Jacobides 2007). When occupying a certain position, a member of the collective is encouraged to attend to certain issues and answers. Consequently, he or she will exhibit a focus of attention related to the position (Allison 1971 cited by Ocasio 1997 and by Jacobides 2007). Furthermore, research on teams suggests that some members, depending on their position within the group, can be more influential in affecting focus and attentional process (Corner, Kinicki and Keats 1994, and Kerr and Tindale 2004). Allocation of tasks, responsibilities and authority provides teams with an attention structures that bridges organization-level and team-level decision-making processes and serves to minimize ambiguity and redundancy (Drach-Zahavy and Freund 2007).

As suggested by Dearborn and Simon (1958), position bias is a result of structural aspects of the collective and will lead to different selection mechanisms. Recent research suggests that the effects of position bias on attentional process can be attenuated by other integrative mechanisms or other structural aspects (Ketokivi and Castaner 2004). Finally, at the level of social movements, structural positions also affect attentional processes. As suggested by McCammon et al.’s (2001) empirical work on suffrage, changes in the roles of women and men in US society at large affected attention dedicated to voting rights in the period between 1866 to 1919. Gender roles were also found as to be a determinant aspect of social movement around the adoption of domestic partner benefits as shown by Briscoe and Safford (2008).

Proposition 2: Demographic characteristics, routines and organizational roles are structural elements of the attentional process. They determine the availability of issues and answers and provide collective members with attention focus.

Transformations of the multilevel attentional process

The intertwined effects of structural elements of attention are amplified when we consider the transformational elements of the attentional processes. A fundamental part of attentional processes at the team level is related to distribution and exchange of information. Shared cues are particularly important in determining teams' attentional processes and outcomes (Kerr and Tindale 2004). Interaction among team members is equivalent to what the ABV labels as communication and procedural channels (Ocasio 1997) as it "...constitutes the means by which ideas, resources, information, norms, strategies, and so forth are exchanged" (Hinsz, Tindale and Vollrath 1997, p. 44).

Networks Recently, researchers interested in entrepreneurial teams have shown that both demographic characteristics and network aspects matter for team performance. Vissa and Chacar (2009) suggest that demographics and networks are complementary aspects of entrepreneurial team performance, particularly under the conditions of resource scarcity. According to their study, these findings are of interest because they conflict with findings derived from research focused on teams established within organizations in which teams are formed on a functional basis. Vissa and Chacar's (2009) study describes some of the important elements of attentional processes and also provides support for the argument in favor of the inclusion of various contingencies to explain collective action. Moreover, they suggest that the effects of the structural and relational elements of the attentional process vary according to the situation in which members and collectives find themselves.

Networks are social and relational structures that shape individuals' behavior and constitute the conduits for diffusion of attention (Hung 2005). Both in and around collectives, networks are communication and governance channels that influence attentional processes by simultaneously providing attention focus and situated attention to members (Ocasio 1997, and Ocasio and Joseph

2008). More specifically, networks function as media of information exchange (Benjamin and Podolny 1999) and help to distribute norms and procedures (Pfarrer Bartol Khanin and Zhang 2008) among and across collectives. Actors use their social connections to signal credibility and gain attention (Lounsbury and Glynn 2001). Therefore, from an attentional perspective, network ties function as procedural and communication channels. As a result, the situations in which collectives and their members find themselves within the network, influence attentional processes in and around them. Depending on the position of the collective in its network, it may be able to influence the flow of attentional resources that can be deployed for its own benefit (Mahon, Heugens and Lamertz 2004, Hung 2004, and Overbeck and Park 2006).

As suggested by Benjamin and Podolny (1999, p. 545), “a firm’s position in the status ordering influences the attention that others pay to quality, their assessment of quality, and their regard for the product more generally.” Additionally, firms pay close attention to other network members in order to use this information to determine how these other organizations responded to past situations that they currently face (Gulati and Higgins 2003). At the level of the team, scholars have suggested that centrality in the network both inside and outside team affect focus of attention and interactions among members (Kerr and Tindale 2004). At the organizational level, Bouquet and Birkinshaw (2008) test the effects of network on attention. According to their research, the position of a subsidiary within the parent company network affects the amount of attention from the headquarters.

Structural position in the network influences attentional processes at the social movements level of analysis as well. Interpersonal networks have been associated with mobilization in the social movements literature. Through interpersonal networks, individuals are drawn into collectives where they share and cultivate interests and identities with other members (King 2008a). Or, as suggested by Briscoe and Safford (2008), larger and more prominent firms are more attractive targets for social

movements. Due to their centrality in the network, they might elicit certain responses from other firms and organizations in the field (Weber, Rao and Thomas 2009). Additionally, the empirical work of Briscoe and Safford (2008) reveals how board interlocks, information sharing and diffusion affect corporate attention to controversial issues and consequent adoption of contentious practices such as partnership benefits.

Capacity Resources are an essential part of the transformation stage of the attentional process. Both tangible and intangible resources are used to build organizational moves. When granted tangible resources, the issues that are the focus of attention can result in (new) activities (Ocasio and Joseph 2005). We refer to these resources as attentional capacity, which refers to the collective capacity to deploy resources to affect attention. According to Ocasio (1997, p. 198), the transformation of issues and answers into organizational moves "...requires that either existing resources be deployed or that new resources be acquired or developed".

Attentional processes at the social movements level are highly dependent on financial and human resources (Campbell 2005, and King 2008a). McCammon et al. (2001) show that social movements, like organizations and teams, either have a pool of resources or must mobilize capabilities in order to gain support and further movement effectiveness. Activists might need additional capacity in order to make use of more institutionalized channels including lobbying and direct negotiation. Moreover, if activists adopt extra-institutionalized tactics, such as boycotts, their need to mobilize capacities becomes more salient and is a necessary condition for the effectiveness of the movement (King 2008b).

Framing In addition to the effects of networks and capabilities, framing is also an important element of attentional processes. Framing explicitly incorporates the idea of enactment, indicating that the

situations in which players, decision-makers and collective members find themselves are not objectively given, but socially constructed (Ocasio 1995, Ocasio 1997, and Ocasio 2001). Furthermore, frames direct attention and, thus, influence attentional processes, outcomes and behavior (Kaplan 2008). Thus, framing involves the strategic use of shared meanings and definitions to focus attention in and around collectives (King 2008a and 2008b).

Research on attention in teams (Kelly and Loving 2004) suggests that interactions among team members are more relevant to the output of the attentional process than the initial focus of attention of each individual member. Furthermore, researchers interested in team effectiveness and outcomes (Hinsz, Tindale and Vollrath 1997, and Kelly and Loving 2004) suggest that the framing of issues can have significant impact on attentional processes and, consequently, on the effectiveness of the team. Empirical studies on information processing in teams indicate that members who mention conflicting arguments regarding the group's common understandings receive negative reactions (van Ginkel and van Knippenberg 2008). Thus, the framing of issues within teams is also a relevant part of attentional processes because it may have an effect upon the content and quality of focus in communication and procedural channels.

The literature on social movements emphasizes the way in which frames facilitate coding and decoding of raw stimuli, and also the manner in which a different vocabulary may affect a movement's success (Weber, Rao and Thomas 2009). At the organizational level, Kaplan (2008) shows that framing is not only a practice, but also a reflection of members' sensemaking that affects "ways of seeing". The role of framing in attentional processes is to create resonance among members (McCammon Campbell Granberg and Mowery 2001), attain shared focus and influence and mobilize members (Campbell 2005). Frames activate action by linking stimuli to certain categories of issues and also by referring to past experience (King 2008b). This linkage occurs through attention flows.

Proposition 3: Framing, attention capacity and networks are relational elements of the attentional process. They affect and transform the salience of issues and answers and influence collective members' focus of attention.

Outputs of the multilevel attentional process

The outputs of attentional processes are better understood as reflecting the context and the transformations that shape the focus and flow of attention (Gavetti, Levinthal and Ocasio 2007). The instrumental character of attention in combination with its contested nature suggest that there are some potential rewards and benefits associated with paying attention (as well as costs associated with inattention) (Hoffman and Ocasio 2001). In addition to visible attention, we also highlight status and coalitions as important output elements of attentional processes.

Coalition Participation in governance and communication channels is fluid. Collective members vary in the amount of time and effort they dedicate to various issues and domains (Cyert and March 1963, and Cohen, March and Olsen 1976). The multiple claims on participant attention derive both from the collective as well as the external environment, and the final outcome depends on the mix of participants who engage with one another and attach themselves to the situation in which they find themselves (March and Olsen 1976). Organizational roles refer to a set of issues to which the participant must attend. However, the structural elements of the attention process, such as routines, interact with relational elements influencing not only the things that are attended to, but also the individual who exercises the attention rights (March and Olsen 1976).

Cho and Hambrick's (2006) study provides a good illustration of how organizational attention process leads to the formation (or dissolution) of coalitions. In their study on the effects of industry

deregulation, they show how changes in environmental regulations lead to changes in the composition of the top management team (TMT) of firms in the airline industry. As suggested by Cyert and March (1963, p. 39), “the composition of the viable set of coalitions will depend on environmental conditions”. According to Cho and Hambrick’s (2006) findings, the alterations to the composition of the TMT were a resultant of the attentional process triggered by the substantial deregulation of that industry in the U.S. in 1978.

As suggested by Mahon, Heugens and Lamertz (2004), coalition formation is also triggered by the need to secure resources, control power dependencies, manage uncertainty and gain and sustain legitimacy. From an attentional perspective, these environmental situations elicit attentional processes that govern the formation and dissolution of coalitions among collective members and those involving external parties (O’Mahony and Bechky 2008).

Status Status represents an organization’s quality as perceived by its peers (Podolny 1993). It is a signal of the underlying quality of the organization’s product or service, and is also a signal that the loose linkage between status and quality is mediated by the organization’s network. An important aspect of this concept is that “status flows through the ‘interlinkages’ between individuals and groups” (Podolny 1993, p. 833) and might cause attention to be directed to those collectives that are central or proximal in the network. Hoffman and Ocasio (2001) argue that status is not only an important part of the attentional process, but also an antecedent in explaining variance in attentional levels in the context of critical events. The role of status in the attentional process was also addressed by Pfarrer et al. (2008) in their research on the way in which external forces affect disclosure and compliance. To retain their structural position, certain companies are more prone to come forward and restate their earnings.

As we argued when discussing the role of networks in the attentional process, the formation and dissolution of networks impacts attentional processes both in and around collectives, which, in turn, may advance the status of certain collectives in their networks. Moreover, the status and the centrality of the collectives within a network attract attention flows and resources that can benefit them (Starbuck 1983, and Podolny 1993). Additionally, central and high status members and collectives use others' "...perception as an instrumental resource to achieve their aims" (Overbeck and Park 2006, p. 235).

In addition to their network, collectives can use framing to acquire status. In particular, keeping in mind that status is not an objective aspect, but rather a perceived characteristic, framing strategies may help collectives to not only direct attention to specific issues and answers, but also to enable them to obtain higher status. Issues may be selectively conveyed and transmitted to others in the network (Mahon, Heugens and Lamertz 2004) that will influence behaviors that have a primary effect on attentional processes.

Visible attention As highlighted by Bouquet and Birkinshaw (2008), visible attention is one of the outcomes of the attentional process. While these authors emphasize the explicit attention expressed by company documents (i.e. annual reports), we argue that resource allocation also indicates visible attention (Durand 2003). Annual reports, as well as other documents produced and publicized by teams, organizations and social movements depict the major topics attended to by the collective. At the level of the organization, content analysis of company documents has been adopted by scholars as a successful technique to establish a proxy measure of visible organizational attention (D'Aveni and MacMillan 1990, Levy 2005, Cho and Hambrick 2006, Yadav, Prabhu and Chandy 2007, Nadkarni and Barr 2008, and Kaplan 2008). In support of their argument for a "middle-range theory" of organizational attention, Hoffman and Ocasio (2001) used content analyzed data collected from

business press (i.e. trade journals) to provide a proxy measure for industry attention to external events. The use of organizational documents as data source for the measurement of visible attention is not limited to content analysis. In their study on knowledge markets, Hansen and Haas (2001) were interested in understanding competition for organizational attention among suppliers of electronic documents. They used the number of hits on the organization's databases as a proxy measure of visible attention. Their work makes important contributions to studies on organizational attention, not only because they provide an additional proxy measure for visible attention, but also because they describe and expose the contested nature of the attention process.

A different approach to visible attention is adopted by Durand (2003) in his work on organizations' forecasting ability. This work was focused on the role of organizational attention in the risk assessment process. He adopts resource allocation as a proxy of attention to market competition and employee capability (specifically, he uses relative expenditures in market information and investments in education and training) and found that organizational attention improves the accuracy of forecasts. Another interesting example of visible attention is offered by King, Bentele and Soule (2007) in which a number of Congressional hearings are used as an indicator for the attention paid by policy makers to rights issues. The number of hearings is the output of the attentional processes triggered by social movements and organizations. All these examples of visible attention, as well as status and coalitions, indicate some of the outputs of the attentional process. More importantly, they are examples of the way in which structural and relational elements of attention interact to result in what is generally referred to as attention (James 1890).

Proposition 4: Coalition formation, status and visible attention are some of the outputs of the attentional process. They reflect the structural and transformational aspects of the attentional process.

Percolation and sedimentation: explaining the cross-level effects of the attention process

Hitherto we explored the function and the structure of the attentional process at the levels of the team, organization and social movements. Since we build our multilevel perspective by demonstrating homology across levels (Chen, Bliese and Mathieu 2005), we will now discuss the relationships between the parallel constructs across the various levels of analysis (Rousseau 1985, and Johns 1999). Given the early stage of development of the ABV (Sonpar and Golden-Biddle 2008), we acknowledge the exploratory nature of this current work.

Percolation and sedimentation are physical processes that describe movement dynamics of cross-level phenomena. Percolation refers to the movement of fluids through porous materials and sedimentation refers to the settling of suspended particles or fluids. According to Chen, Bliese and Mathieu's (2005) typology of homologous multilevel theories, the use of metaphors helps to describe phenomena that reside in multiple levels and across levels. In light of this, we label the upward and downward cross-level processes of attention, percolation and sedimentation, respectively. It is worth noting that the use of the term percolation as a metaphor is new in the field. The term sedimentation, however, has been used by organizational scholars in the past (Clegg 1981, and Cooper et al. 1996).

In the *percolation process*, attention seeps into higher levels, passing slowly through the structures, processes and agents of attentional processes and spreading throughout the team, the organization and/or the social movement. Percolation is distinct from a simple diffusion process in which the spread of the phenomena is arbitrary (Winsor 1995). In its upward movement, we argue, the attentional process is influenced and shaped by contextual aspects encountered in the higher-levels. Issue selling literature offers good insight into the percolation process (Dutton et al. 2001, and

Dutton et al. 2002). This research stream demonstrates how collective members can shape organizations' strategic actions by channeling others' attention to particular issues (Howard-Greenville 2007) and also how contextual aspects influence the upward attentional process (Sharma 2000). The ethnographic study of organizational responses to natural environmental issues by Bansal (2003) provides another interesting illustration. Her research reveals that senior managers influence organizational strategic agendas through allocation of resources. Additionally, organizational members' individual concerns play a crucial role in affecting the salience of natural environmental issues within the organizations. As a result of these two upward movements, one of the organizations under analysis adopted an environmentally friendly practice.

The recent published work by Weber, Rao and Thomas (2009) indicates that the internal process of organizations can work in concert with social movements. In this case, as they describe, individuals, groups and organizations can work as social activists as well as "internal advocates". As a consequence, they may be able to influence not only the attentional process within the organization, but also the attentional process across organizations and upwards, spreading their concerns and values, as is described by Bansal (2003).

Proposition 5: Given the role of the structural and relational elements of the attentional process and the benefits of its outputs, attention percolates to higher levels of analysis. Percolation affects the salience of issues and answers and members' focus of attention across levels.

In the *sedimentation process*, attention drops from higher to lower levels, leading to the sedimentation of attentional elements within organizations and teams. The sedimentation movement suggests that attention settles, falling out of one level to rest in another, causing layering and accumulation of structural aspects (Clegg 1981) of the attentional process. Weber, Rao and Thomas

(2009), cited above, show how social movements can penetrate organizational-level structures and influence lower-level attentional processes. Considering the embedded nature of both social movements and organizations, they argue, “the external contestation manifests itself in the internal polity of organizations.” (Weber, Rao and Thomas 2009, p. 109). Thus, attention penetrates from higher level to the level of the organization garnering access to shareholders’ annual meetings, shifting investments to alternative businesses and, ultimately, affecting the formation of coalitions penetrating into the composition of executive boards (Davis and Thompson 2006, King 2008 and Weber, Rao and Thomas 2009).

Proposition 6: Given the role of the structural and relational elements of the attentional process and the benefits of its outputs, attention sediments at lower levels of analysis. Sedimentation leads to the persistence of certain issues and answers and members’ focus of attention across levels.

Cross-level attention: from the lower level

We argued that attentional processes matter at the team level. Teams are open and complex collectives composed by “...members who perform specific functions and interact through coordination networks with one another, as well as with the larger social context in which the team is embedded” (Perretti and Negro 2006, p. 760). In our study, we focus on teams within organizational settings, which include teams that deliver services, produce goods, recommend improvements and decide upon the strategic orientation of their organizations (Cohen and Bailey 1997). Hence, teams are situated and context sensitive. Therefore, in order to comprehend team processes in general, and attentional process in particular, it is necessary to consider contextual effects (Griffin 2007). This is particularly relevant to an understanding of sedimentation of attention at the team level and also to an explanation of how team attention percolates to organizations and social movements.

The majority of the research available on attentional processes at the team level adopts experiments for hypothesis testing. This research design implies a limitation in their findings both in terms of an understanding of the attentional process in teams within organizations as well as in terms of an explanation of the various aspects that influence attention at the team level. Teams within organizations are embedded in an environment of decision that is composed by concrete and contextual structures that go beyond the characteristics of the team members and the task at hand. Consequently, current research on attention in teams acknowledges the context dependent nature and contingent character of attention, yet it does not explore the diverse inputs and relational elements affecting attentional processes.

“Attentional processes in groups raise the question, what information is the focus of attention? [...] We consider three particular aspects of attention in groups: (a) how groups influence members to focus attention internally or externally, (b) how the distribution of information in a group influences what information becomes a focus of attention, and (c) how group interactions focus attention on particular information” (Hinsz, Tindale and Vollrath 1997, p. 46).

The attention focus model

Team attentional processes have been explored by scholars interested in comprehending the effects of time on group performance and team effectiveness. Karau and Kelly (1992 and 2003) and Kelly and Karau (1999) propose the attentional focus model (AFM), which is equivalent to the ABV. The AFM comprises the structural and relational elements present in teams that explain how members' focus of attention and their interactions combined explain team outcomes. The AFM suggests that time pressure together with other situational factors interact with task characteristics and team structural variables to influence team attention, which in turn affects the content and outcomes of team interaction (Karau and Kelly 2003).

According to the AFM, time assigned to a task impinges on the environment of decision affecting the issues to which team members attend. In doing so, it has an effect on the interaction among members as well as on the outcome and performance of the team. Facing time constraints, members will focus their attention on issues that are more closely related to task completion. Conversely, facing an abundance of time, team members will be less focused on task completion, and attention will be distracted to unrelated issues. Karau and Kelly (1992) further propose that time works in conjunction with other factors such as individual differences, task demands, and group structure to determine environmental aspects that are most salient. Additionally, attention differences between team members are likely to affect interaction and information processes, which also impact the resultant of the attentional process. It is important to note that not all members of the team must have the same focus for the issue to be attended to (Hinsz, Tindale and Vollrath 1997).

Therefore, according to the AFM, time pressures affect focus of attention directing team members to attend to those issues more closely related to task completion and avoiding unrelated issues (Karau and Kelly 1992 and 2003). An important component included in the attentional focus model is the effect of interactions among team members on the output of attentional processes. To understand the effects of time restriction (or time abundance) on task completion, it is important to consider both the attentional focus of group members, but also the pattern of interactions among them. As suggested by the model of situated attention (Ocasio 1997) and by our functional equivalent model at the team and social movements levels, attentional process at the team level is also comprised of structural and relational elements.

Time is unlikely to operate in isolation (Kelly and Loving 2004). The relationship between time and attentional focus is also affected by contextual and contingent variables such as task complexity, demographic characteristics, social influence, framing, roles and normative systems. According to

the AFM, input elements of attentional processes are likely to affect the content of the interaction among members of the team (Kelly and Karau 1999). In line with the ABV, structural elements of attention will affect both the salience and the distribution of issues on procedural and communication channels. Thus, the final effect of the focus of attention of group members is also dependent upon the interaction processes among members (Kelly and Loving 2004).

Distributed and shared attention indicate implicit consensus, which is the linking mechanism between the various levels of attentional processes (Corner, Kinicki and Keats 1994). An interesting suggestion put forth by the ATM is that time scarcity creates a “resource problem” such that teams cannot adequately attend to or process the environment of decision (Karau and Kelly 1992). Demographic characteristics, routines and other aspects of the attention structures channel the focus of attention of team members to very specific issues and answers, blinding them to what may be other relevant cues and unrelated issues. “Programs focus perceptions on events their creators believe important, so the programs blind organizations to other events that often turn out important” (Starbuck 1983, p. 92).

This focusing mechanism is reinforced by the fact that teams usually discuss and focus on common issues, rarely considering unique facts (Parks and Cowlin 1995). Additionally, considering the difficulty that team members have in expressing arguments that contradict the team’s preferences (van Ginkel and van Knippenberg 2008), the process of attention will be directed to the same issues and answers with little variation in response to changes in stimuli, causing attention to sediment and remain the same. Our point here is that the influence of context (Johns 2006) on organizational behavior at lower levels is reinforced by structural and relational elements of the attentional process. Moreover, collective members can benefit from the outputs of the process.

Proposition 7: Structural elements of the attentional process at the level of the organization interact with structural and relational elements of the attentional process residing at the level of the team. At the level of the team, interaction effects lead to the persistence of issues and answers and attention focus at lower levels of analysis of organizational behavior.

The sedimentation process is illustrated by the empirical research of Perretti and Negro (2006). According to their study, the distinction between different levels of experience in teams matters both at the team and the organizational levels. This distinction is relevant to group interactions, as well as group effectiveness and organizational socialization. The authors suggest that inexperienced and experienced team members use different attentional processes leading to explorative and exploitative moves. Old-timers are more accustomed to the status quo “ways of seeing” at the level of the team and also at the level of the organization. Different from newcomers, who usually bring forth novel interpretations and influence attention by means of ingenuity or improvisation, old-timers are source of rigidity and inertia (Perretti and Negro 2006). Rigidity and inertia lead to the sedimentation of structural elements of attention both at the team and organizational levels.

Cross-level attention: from the higher-level

The social movements literature is particularly applicable to acquiring an understanding of percolation and sedimentation of attention. As is often suggested, social movements are dynamic multilevel processes (King 2008a and Briscoe and Safford 2008) in which individual and organizational activists influence others by penetrating their attention structures or altering their governance channels (King, Bentele and Soule 2007, King 2008b and Sine and Lee 2009). Furthermore, the pervasiveness of social movements both in and around organizations (King 2008a and 2008b, Davis et al. 2008, and Weber, Rao, and Thomas 2009) provides us with a literature that is

in a privileged position to address both the multilevel and also the cross-level aspects of attentional processes.

Political opportunity structure is a core concept in the literature on social movements. Political opportunity structure is the concrete and contextual structure that offers opportunities for mobilization and action. It comprised of the formal political structure and its capacity, but also the broader social, economic and cultural context (McCammon et al. 2001, Campbell 2005 and King 2008a). Thus, the political opportunity structure sets the limits for the effectiveness of movement strategies (Campbell 2005 and King 2008b).

The concept of political opportunity structures converges with the multi- and cross-level perspectives of attentional process first, because it treats the effectiveness of social movements as situated in an environment that extends beyond the immediate political structure (King 2008b and Weber, Rao and Thomas 2009). Second, it leaves room for agency, which, in combination with structure, is likely to provide an explanation of social movement outcomes (McCammon et al. 2001). “Fleshing out the nature of this agency gives organizational scholars [...] an improved understanding of the context in which organizations operate and change” (King 2008a, p. 43).

Recent research on social movements has shown how activists are capable of conducting organizational attention in the direction of their specific demands or issues. The penetration process described by this literature outlines the manner in which internal and external collectives infiltrate lower and upper level attentional processes, even when they have little access to formal and institutionalized channels (King 2008b and Weber, Rao and Thomas 2009). “Lacking a better channel of influence, social movements seek to disrupt the status quo and force policy makers to pay attention to issues that they would not consider otherwise” (King 2008a, p. 39).

The function of the concept of political opportunity structure adopted by social movement scholars is equivalent to the function of the concept of organizational attention proposed by Ocasio (1997).

According to Campbell (2005, p. 45), political opportunity structure is a

“... set of formal and informal political conditions that encourage, discourage, channel, and otherwise affect movement activity. Political opportunity structures are said to constrain the range of options available to movements as well as trigger movement activity.”

Furthermore, political opportunity structures can be conducive (Briscoe and Safford 2008 and King 2008b) and are said to influence strategy, structure and effectiveness of social movements (McCammon et al. 2001, Campbell 2005, Weber, Rao and Thomas 2009). These functionally equivalent aspects of the social movements literature, in conjunction with recent developments combining the internal and external dynamics of collectives (Zald 2008) provide support for the conceptual framework described by the percolation and sedimentation processes of attention.

Proposition 8: Structural elements of the attentional process at the level of the social movements interact with structural elements of the attentional process residing at the level of the organization. At the level of the organization, interaction effects influence the saliency of issues and answers and decision-makers' focus of attention. At a higher level, these interaction effects partially explain the effectiveness of the social movement.

Networks and collective members' dual role

Individuals are part of a larger social context and can simultaneously be a member of a team or organization and have a shared identity as an activist. This dual role, as a member and also an advocate, helps to explain how social movements garner support from targeted organizations

(Briscoe and Safford 2008, Weber, Rao and Thomas 2009). It also provides supporting for our percolation of attentional processes argument. Individuals with dual roles can have a passive influence on attention structures by the sheer fact of their social identities (Hillman, Nicholson and Shropshire 2008). However, they can also actively influence or manipulate attentional processes in their role as a supporter (Briscoe and Safford 2008, Kaplan 2008).

The role of networks in multilevel phenomena (i.e. innovation) has been studied previously. According to Gupta, Tesluk and Taylor (2007, p. 889) “networks are based on multiple types of ties among various constituent entities, whether they are individuals, teams, or firms and constructs that are best understood when considered in terms of the overall patterns of relationships (e.g. network density) and individual actor’s position in and relation to the network (e.g. centrality).” In attentional processes, networks play the same role and are particularly influential because they provide collective members with different identities, and thus, a different focus of attention.

Networks exist in and around organizations and, as such, affect attentional processes in and across teams, organizations and social movements. Network ties include personnel exchange, board interlocks and professional, trade and union associations, to name only a few. Organizations such as boards, associations, media, as well as stakeholder groups can fill structural holes and function as intermediaries, thereby transforming general issues into collective issues (King 2008a and Deephouse and Heugens 2009). Additionally, boundary organizations also function as intermediaries to the extent that they facilitate cooperation and bridge divergent interests across organizations. These organizations allow collectives to focus on issues that facilitate cooperation by enrolling members “on the basis of their convergent interest” (O’Mahony and Bechky 2008, p. 426). These indirect connections are part of the external and internal dynamics of these collectives and are, therefore, likely to affect the focus of attention and organizational attention (Benjamin and Podolny

1999 and Gulati and Higgins 2003) both within the collective and outside it. Thus, networks function as conduits of attention and as channels of governance both within and across levels.

Proposition 9: Networks span team, organizational and social movement levels. They work as governance and communication channels of cross-level attentional processes. As such, they affect the salience of issues and answers and attentional processes across the various levels of analysis of organizational behavior.

The concrete and contextual structures at the levels of the team, organization and social movement are made up of rules and practices that are socially embedded and linked to institutional logics and conceptions of control (Weber, Rao and Thomas 2009). This helps to explain the influence of collective identities on attentional processes as well as how collectives acquire certain types of reputation according to their previous responses to social pressures (Benjamin and Podolny 1999, Briscoe and Safford 2008 and Weber, Rao and Thomas 2009).

Briscoe and Safford (2008, p. 464) suggest that organizations can be recognized as prone or resistant to activist influence.

“The adoption of a contentious practice by a company perceived to be impervious to activism generates surprise: the actions conflict with expectations about how resistant companies will behave in the face of activism. Such dissonance serves as a trigger for deeper reflection [...], focusing observers’ attention and potentially leading to more systematic information processing activities among observers.”

Thus, institutionally established collectives, organizations with certain reputations or central knots of the network are the targets of intense activism due to their visibility and power (Weber, Rao and Thomas 2009). These collectives are not only concerned about their external image, but are also

concerned about their status within the collective and outside it (King 2008b and Weber, Rao and Thomas 2009).

Mobilization and support are also crucial to the processes of percolation and sedimentation of attention. An important aspect of framing, closely related to the idea of mobilization and capacity, which was not highlighted earlier, is the role of media (Briscoe and Safford 2008 and Weber, Rao and Thomas 2009). Media can have a direct effect on attention orientation, influencing framing at all levels when narrating and, thus, (re)framing collective actions (Hoffman and Ocasio 2001).

Cross-level attention: from the organizational level

There are two additional literature streams that provide support for our claims regarding the sedimentation and percolation processes. Issue selling and project championing studies offer theoretical arguments and empirical evidence explaining the way in which framing and other attentional elements percolate and sediment across levels. An important aspect highlighted by these literatures is that the issue seller or project champion has to believe organizations are amenable to their ideas (Barnett 2008). This idea converges with earlier suggestions regarding support and mobilization and also about the idea of (political) windows of opportunity often mentioned in the social movements literature (King 2008b). “Issue selling is the process by which individuals affect others’ attention to and understanding of the events, developments, and trends that have implications for organizational performance” (Dutton et al. 2001, p.716). Although primarily developed to explain the advancement of issues within organization, issue selling can also take place outside the organization and can influence the distribution and allocation of attention in and around collectives. It is an important cross-level aspect of attention because an issue-selling perspective proposes that members and collectives direct the attention of insiders and outsiders to often-unnoticed issues (Dutton et al. 2001 and Ocasio and Joseph 2005).

Based on the issue-selling literature, Bouquet and Birkinshaw (2008) propose that visible attention can be a response of a bottom-up attentional process. Accordingly, lower level units of analysis can use voice to garner upper level attention (King 2008a). Although Bouquet and Birkinshaw (2008) focus on headquarters' attention, their relational perspective of attention based on the concept of voice, is of particular interest for our understanding of the percolation process. Their study suggests that lower level units can use two strategies to penetrate the higher-level attentional process. The first strategy involves taking the initiative to actively generate flows of attention towards their issues, usually via concrete actions and visible outcomes that are presented to upper level units as new stimuli. The second strategy by which lower levels can penetrate upper levels involves the adoption of strategies designed to improve image and reputation, aiming at profile building. In this case, attentional processes are affected due to framing practices that influence perceptions at the upper-levels.

King (2008a, p. 35) adopts the construct of "voice" to build the arguments that underpin his propositions on stakeholder collective action. According to his study, stakeholder groups use ruptures in the corporations' structures "to voice their claims and exert influence". In studies on social movements, framing is emphasized not only as an important element for mobilization, but also as means to penetrate the political structures and the organizational field to influence decision-makers' agendas and gain external support (McCammon et al. 2001).

Proposition 10: Collectives and their members engage in framing strategies in order to influence attentional processes at the various levels of analysis. Framing, like networks, works as a governance and communication channel of cross-level attentional processes. It also interacts with

structural elements of attentional processes, affecting the salience of issues and answers and attentional processes across the various levels of analysis of organizational behavior.

Why does it matter? The canonical elements of attentional processes

The multilevel perspective of attentional process offers a fruitful theoretical framework with which to understand organizational behavior as it addresses important elements that advance our current knowledge by tackling some of the limitations of past studies of attention (Gavetti, Levinthal and Ocasio 2007). This framework also bridges the micro-macro divide and spans different levels of organizational behavior offering a broader and deeper, yet complex (Klein, Tosi and Cannella 1999), understanding of how attention influences and is influenced by collectives. Even in its metaphoric stage, our multilevel perspective offers a composite model of attentional process and suggests a parsimonious starting point to expand the ABV to levels of analysis other than that of the business firm (Chen, Bliese and Mathieu 2005).

After having provided an overview of the current research on attention at the levels of the team and social movement, we discussed the function and the structure of the attentional process. Then, we argued in favor of a homology of attention at team, organizational and social movement levels of analysis of organizational behavior. Additionally, we delineated the cross-level linkages of attention putting forth our conceptual argument for the percolation and sedimentation process, which integrates micro and macro aspects of attentional process to explain collective behavior. As highlighted earlier, we do not intend to explain all organizational behavior using the multilevel view of attention, nor do we intend to suggest that the elements and mechanisms described here are exhaustive. However, we believe that our framework advances the field by suggesting that the

analysis of attentional processes at multiple levels and across levels is crucial to understanding how social, economic, institutional and cultural aspects enter into lower levels of attention, and how lower levels of attention “scale-up to collective outcomes” (Thornton 2001, p. 308). In the following sections, we discuss the canonical elements of this first effort to compile the elements of attention at the team, organizational and social movement levels to propose a multilevel theory of organizational attention.

Embeddedness - because the context matters:

Attention is situated. At all levels of analysis, social, political, cultural and institutional aspects impinge on the structural, relational and output elements of attentional processes. Thus, a multilevel theory of attention is inherently context dependent. Here, we adopt the view of context as consisting of constraints and opportunities that shape functionally equivalent processes that explain organizational behavior (Johns 2006).

As the percolation and sedimentation processes describe, context is not only the situation in which members and collectives find themselves (Ocasio 1997), but it is also a cross-level effect (Johns 2006). Additionally, structural positions, organizational roles, communication channels and other contextual and concrete structures of attention (Barnett 2008) are themselves embedded in the social, economic, cultural and institutional environment (Ocasio and Joseph 2005) suggesting a reciprocal effect. Therefore, organizational behavior in general and attentional process in particular can hardly be understood unless embeddedness is taken into consideration (Gavetti, Levinthal and Ocasio 2007).

Embeddedness is also important in light of the effects of institutions, which are seen here as nested systems in the sense that they are both “products of action” and “frameworks for action” (Holm 1995). An important consequence of this specific aspect of embeddedness is that both first and

second order levels of action are structured and integrated (March and Olsen 1976). Therefore, disturbances at a lower level can be absorbed at the upper level and higher-level processes may also trickle down to lower levels (Holm 1995).

Institutions - because logic matters:

“The double nature of institutions, as both frames for action and products for action” (Holm 1995, p. 417) has further implications for the multilevel perspective of attentional processes. Institutional theorists have shown how organizational attention is structured by the institutional logics prevailing in the environment (Thornton 2004 and Thornton and Ocasio 1999) while, at the same time, suggesting that interests, identities and values are embedded within the dominant institutional logics (Thornton and Ocasio 2008). Institutional logics are “the socially constructed, historical pattern of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality” (Thornton and Ocasio 1999, p. 804). Moreover, institutional logics are multiple (Schneiberg and Lounsbury 2008) and operate across multiple levels of analysis (Thornton and Ocasio 2008).

An emphasis on the pervasiveness of institutional logics in attentional processes at team, organizational and social movement levels is not necessarily novel (Thornton and Ocasio 1999, Thornton 2001 and Luo 2007). Take for instance the homologous concept of dominant logic (Prahalad and Bettis 1986 and Bettis and Prahalad 1995). Similar to institutional logics, the dominant logic permeates the organization, interacts with structural and relational aspects of attention, thereby affecting organizational behavior (Bettis and Prahalad 1995 and Ocasio and Joseph 2005). Yet, our understanding of the multiple, conflicting and dual nature of these logics is relatively new (Holm 1995, Schneiberg and Lounsbury 2008 and Purdy and Gray 2009).

As was previously suggested, institutional logics can be both inputs and outputs in processes explaining organizational behavior. Additionally, the presence of multiple and conflicting logics implies the existence of various processes of attention and, consequently, a wider portfolio of outcomes. Moreover, these logics, together with context, help to link macro and micro aspects of attention and organizational behavior.

Attention structures – because distribution matters:

It is not only context and institutional logics that shape attention. Attention structures also impose constraints upon and elicit opportunities for collective members and may attenuate conflicts (Cyert and March 1963). Not all collective members have the same attention focus or are driven toward the same orientation (Cho and Hambrick 2006 and Rerup 2009). Attention structures distribute and allocate these differences and direct members' focus towards specific issues in order to guarantee some cohesion or convergence of collective attention.

Attention structures, which include a variety of formal and informal conduits for the flow of attention, are central to attentional processes because they distribute members' focus within and across levels. The distribution of attention enables collectives to attend to a vast number of issues at distinct levels at different points in time (Ocasio and Joseph 2005). An overlap between issues and attention focus confer coherence (Rerup 2009) across levels, whereas the distribution of attention allows for dispersion of attention. Finally, by distributing attention, these structures allow demands to be attended sequentially and, more importantly, they foreshadow some of the conflicting and divergent issues faced by the collectives (Cyert and March 1963).

Moreover, attention structures are both concrete and contextual aspects that affect salience and influence the valuation and rank ordering of issues (Barnett 2008). They result in and are embedded

in the broader social, cultural and economic context (Ocasio 1995 and 1997). Thus, they not only include organizational policies, routines and resources, but also relational aspects of the attention process. Therefore, the structural characteristics of attention not only explain distribution, but also help to explain why certain issues are given precedence over others, and why still others are neglected altogether. In concert with one another, the structural aspects of attention produce multiple flows of attention, influencing the distribution and salience of issues (Williams and Mitchell 2004).

Processes – because selection matters

“Attention provides a label for a set of mechanisms that determine the salience of stimuli” (Kahneman 1976, p. 2). The emphasis on process in our multilevel theory explains how attention narrows down the stimuli, limits the abundance of information and also how collectives select certain aspects, values and behavioral alternatives while discarding others. Contexts impose a series of stimuli upon collectives that also face competing logics and conflicting demands. It is the attentional processes within and across levels that elucidate the manner in which collectives resolve the trade-offs between what they attend to and what they ignore (Kacperczyk 2009).

The nature of attention as a process indicates that visible attention is only part of a complex and abstract set of formal and informal mechanisms that affect the focus of attention of individuals and collectives (Yu, Engleman and Van de Ven 2005 and Pfarrer et al. 2008). The benefits of attention, as well as the costs of inattention, provide additional incentives to collective members to attend to a stimulus, regardless of certain structural constraints (Weber, Rao and Thomas 2009). An emphasis on what we ordinarily know as attention (James 1890) distracts our scholarly attention away from the underlying selection process, which, in fact, explains environmental enactment and organizational behavior.

Agency – because actors matters:

In presenting our multilevel perspective of attention processes, we discussed the role of demographic characteristics as input elements of attention. We also argued that the effects of demographic characteristics on the process interact with other elements and, consequently, as suggested by Ocasio (1997), these characteristics are just part of an explanation of organizational behavior. However, our work also suggests that individuals play an active role in the attentional process not only due to their organizational role, but also due to their structural positions and multiple identities (Hillman, Nicholson and Shropshire 2008 and Weber, Rao and Thomas 2008).

Collective members act on the basis of what they know, perceive and believe and “what they look at, what they notice, the weights they give to contradictory stimuli” reveal themselves in the process output as well as in the collective behavior (Cho and Hambrick 2006, p. 466). Despite the influence of organizational structures on channeling attention, members can actively alter and direct the attentional process (Bansal 2003 and Dutton et al. 2006). Even among the dominant coalition members, where attention scarcity is even more pronounced (Simon 1947, Cyert and March 1963 and Ocasio 1997) there are differences in attention focus. In this case, due to their organizational roles, structural positions and status, and despite some structural constraints, members of the collective may exercise their discretion and participation rights (March and Olsen 1976) according to their own concerns, which in turn affects the process and its outcomes (Kacperczyk 2008). More importantly, a multilevel perspective of attention process shows that these effects are not restricted to one level of analysis, but several.

Collective members often find themselves in ambiguous and conflicting situations where they do not necessarily know how to act or move (March and Olsen 1976 and Holm 1995). As was previously suggested, members usually have dual roles, participating in a certain collective while at the same

time being a member of another. Consequently, in any situation, a collective member attends to only a limited number of issues depending "... on the extent of his involvement in the organization and on the demands of the other commitments on his attention" (Cyert and March 1963, p. 35). These other commitments (Hillman, Nicholson and Shropshire 2008), which may or may not be related to the collective, provide different roles and structural positions, and are essential components of the percolation and sedimentation processes. They provide collective members with other identities such as those of issue sellers, champions, activists and status seekers to name a few, that can actively transform and affect the outcomes of attentional processes.

Symbolism and substance – because attention matters:

Finally, attention is both substantive and symbolic. It is difficult to understand attentional process at any level and across levels without also considering a symbolic perspective (March and Olsen 1976). First, attention can be viewed under a rational lens revealing that processes are largely explained and outcomes determined by the costs and the benefits associated with paying attention. Second, there are various symbols associated with these processes, such as status and image (Hoffman and Ocasio 2001). Yet, the distinction between the substantive and symbolic character of attention can be assessed if the other stages of the attentional processes are well understood.

Recognition of the distinction between symbolic and substantive attention is important in understanding and explaining attentional processes. Substantive attention, as indicated by actual resource allocation, is primarily important in the transformation phase of the attentional process. As described earlier, attentional resources in the form of attentional capacity can play a definitive role in determining process outcomes. Examples drawn from the social movements literature (King 2008a and 2008b), as well as from organizational studies (Ocasio and Joseph 2005 and Bouquet and

Birkinshaw 2008), indicate the centrality of substantive attentional resources in driving collective moves and influencing effectiveness.

The symbolic nature of attention, however, is particularly manifest in the output of the attentional process. We argued that structural and relational elements of the attentional processes lead to outputs such as coalitions, status and visible attention. All of these output elements share an important characteristic that has implications for the understanding of attention. Coalitions, status and visible attention, specially as expressed by company documents, send signals and indicate who and what matters to the collective. Thus, like substantive attention, they represent symbolic resources that may have an effect upon other attentional processes in and around the collectives.

Final remarks

As suggested by Ocasio (1997) the complexity of the ABV is both a virtue and a weakness. Yet, we argue that attentional process, regardless of the substantive and / or symbolic outputs in which it may result, is a construct that is vital to expanding our current understanding of collectives in general and, organizations in particular. We also believe that a multilevel process theory of attention, which comprehensively integrates environmental and structural elements and agency (Gavetti, Levinthal and Ocasio 2007 and Schneiberg and Lounsbury 2008), constitute an advancement of theories of organizational behavior. We further argue that expanding the breadth of theories of attention to other levels of analysis opens the field to various new and interesting research opportunities.

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