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## Review of Prior Literature on Attention Regulators

Osamu SUZUKI\*

### Abstract

The attention of organizational decision makers is argued to be one of the determinants of organizational performance. However, extant literature is yet to explore the factors that regulate the attention of decision makers or attention regulators. This paper aims to review prior works on attention regulators. The focus is on following the framework proposed by Ocasio (1997) to examine the various attention regulators revealed thus far. The mechanisms through which these attention regulators direct the attention of decision makers are also examined. We show that the fourth category of attention regulator or “resources” is particularly under-examined. We conclude the paper by arguing that organizational slack or a unique class of “resources” is worth further study as it entails meaningful research agendas, both theoretically and practically.

### I. Introduction

In this manuscript, we discuss the attention-based view (ABV) (Ocasio 1997). In particular, we focus our argument on the antecedents of attention of decision makers of organizations, as well as the mechanisms through which these antecedents regulate attention, which are revealed by prior research. Our aim of the discussion is to identify the agendas for future research on the ABV. We aim to uncover the possibility that “resources” or organizational slack in particular, play the role of an attention regulator, such that we can emphasize the theoretical as well as practical importance in examining them as antecedents of attention.

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\* Professor, Institute of Business and Accounting, Kwansai Gakuin University

## II. Attention-Based View

One of the key characteristics of the ABV (Ocasio 1997) is a focus on the attention of decision makers as a determinant of adaptive capacity of their organizations. Attention is defined as “*the noticing, encoding, interpreting, and focusing of time and effort by organizational decision-makers on both (a) issues; the available repertoire of categories for making sense of the environment: problems, opportunities, and threats; and (b) answers: the available repertoire of action alternatives: proposals, routines, projects, programs, and procedures*” (Ocasio 1997, p.189). It is a perspective that emphasizes the critical importance of attention of decision makers as attention influences the extent to which their respective organizations appropriately adapt to the competitive environment. As alternative theories explain the differences in organizational performance, some scholars propose a resource-based view (RBV) (Barney 1991; Teece 1982; Wernerfelt 1984) that focuses on resources of organizations as determinants of the degree of sustainable competitive advantage. Other scholars propose a positioning view (Porter 1980) that associates competitiveness to five environmental forces or the degree to which the focal organization is exempted from competition. In comparison to the RBV or the positioning view, ABV is unique as it aims to reveal the source of competitiveness by examining the contents or processes of cognition of decision makers. In other words, proponents of the AVB strongly advocate that key decision makers, including top executives, exercise more definitive influences on the fate of their organizations in comparison to organizational resources or competitive environments.

Considering the ABV which proposes that organizational performance depends on the attention of decision makers, an important question that arises is how the attention is regulated or the mechanism through which a particular locus of attention is selected by decision makers. Stated differently, one may want to ask what should be undertaken to direct and maintain attention that enables favorable organizational performance. Accordingly, we review prior research on the antecedents of attention or “*attention regulators*” (Ocasio 1997) to examine what scholars have uncovered thus far. We particularly aim to argue for the theoretical importance of “*resources*” as one of the four attention regulators by examining the “*attention structure*” proposed by Ocasio (1997), a seminal work which stimulated interests of many scholars on the ABV.

Hoffman and Ocasio (2001) extend Ocasio’s (1997) three principles of the ABV (pp.189-192), where “*selective attention*,” “*situated cognition*,” and the “*structural determination of attention*” are major theoretical building blocks of the ABV (pp.415-416). First, attention is critical as cognition processes of decision makers are characterized with selective attention (Fiske and Taylor 1984; Simon 1957). It is a

straightforward consequence of the fact that cognitive capacity of a decision maker is constrained or limited (Cyert and March 1963; Simon 1957). Accordingly, decision makers will not be able to pay attention to everything, but intentionally or unintentionally select issues, objects, or events they attend to. In other words, attention is a scarce resource. As actions and behaviors of decision makers depend on what they attend to, scarce attention should be allocated to critical aspects of their competitive environments, such that favorable organizational performance is ensured; otherwise, attention is wasted, and disappointing organizational performances ensue. Therefore, *selective attention* is a key construct that associates attention to organizational performance. It is important to note that the locus of attention is not regulated by objective characteristics of issues, objects, and events alone, but also by the manner in which decision makers enact their competitive environment (Hoffman and Ocasio 2001). Accordingly, our examination of the mechanism through which attention regulators influence attention of decision makers should focus on the cognition process of decision makers, rather than on the characteristics of issues, objects, and events selected as a locus of attention.

The manner in which decision makers enact their competitive environment depends on organizational contexts in which decision makers are embedded. In other words, their cognition is characterized as *situated cognition* (Ocasio 1997; Suchman 1987). More specifically, cognitive processes of decision makers are embedded in their idiosyncratic organizational contexts. An inevitable consequence of this embeddedness of cognitive processes is that organizational contexts enable and constrain the cognition of decision makers. Accordingly, the organizational context is critical as it characterizes cognitive processes of decision makers.

The third principle of the ABV or “*structural determination of attention*” is an elaboration of the second principle. The aspects of the organizational context are of particular importance as determinants of cognition processes of decision makers are structural characteristics of their organizations. Structural aspects, and therefore relatively stable and enduring, are important as attention is established through reinforcements of repeated cognitive processing (Nadkarni and Barr 2008). Considering structural aspects as most important, Ocasio (1997) more specifically defines four attention regulators as described below.

By drawing on March and Olsen (1976), the four attention regulators are bundled as components of “*attention structures as a set of rules that constrain how problems, solutions, and participants get linked in the garbage can*” (p.188). More specifically, an attention structure is defined as “*the social, economic, and cultural structures that govern the allocation of time, effort, and attentional focus of organizational decision makers in their decision-making activities*” (Ocasio 1997, p.195). Furthermore, attention regulators are specified to make attention structures more ex-

PLICIT and specific. Attention regulators include “*rules of the game*,” “*players*,” “*structural positions*,” and “*resources*.” Prior to examining each attention regulator, it is appropriate to examine the general mechanism or rationale behind how and why attention regulators regulate the attention of decision makers.

According to Ocasio (1997), attention regulators drive and direct the attention of decision makers through a set of values, decision-making activities within the organization, and a set of decision premises and motivations for actions (p.196). First, attention regulators generate “*a set of values that order the legitimacy, importance, and relevance of issues and answers*” (p.196). In other words, attention regulators define a set of values according to which decision makers identify legitimate and relevant issues, objects, and events. Decision makers are provided with “*central guiding concepts*” (p.198) that are instrumental in deciding their locus of attention. Critical issues, objects, and events are defined as an organization-wide understanding shared across organizational members, rather than as individual beliefs and interests of particular decision makers. It is straightforward and rather understandable that “*rules of the game*” and “*structural positions*,” among four previously mentioned attention regulators, are the prime examples of attention regulators to which this explanation is applied.

Second, Ocasio (1997) argues that attention regulators “*channel and distribute the decision-making activity within the firm into a concrete set of procedures and communications*” (p.196). In other words, attention regulators define who is responsible for which decisions, and accordingly, who is responsible to ensure that relevant and appropriate attention required for effective decisions is established. In addition to the organization-wide value discussed above, the distribution of individual roles and responsibilities is also argued to regulate the attention of the occupants of those roles and responsibilities. Needless to mention, the third attention regulator or “*structural positions*” regulate the attention of decision makers by defining the roles and responsibilities of those assigned to the positions.

Third, attention regulators are argued to “*provide the decision-makers with a structured set of interests and identities*” that “*generate in turn a set of decision premises and motivations for actions*” (p.196). The set of decision premises and motivations for actions play the roles of “*normative frames*” (p.199) of decision makers, thereby effectively enabling them to “*interpret meaning in organizational situations*” or “*shape the enactment of issues*” (p.199). It is important to note that the mechanism is associated with the process of cognition and enactment by decision makers as attention regulators regulate the attention of decision makers by influencing their interests and identities. Accordingly, “*players*” as attention regulators are best explained with this argument. The influences of characteristics and beliefs of individual decision makers on their attentions are independent from those of

organization-wide values, and roles and responsibilities formally defined irrespective of the characteristics and identities of the occupants.

In contrast to the explanation of Ocasio (1997), the mechanism through which attention regulators regulate the attention of decision makers is more parsimoniously explained by Barreto and Patient (2013) as “*a logic of interest*” and “*a logic of beliefs*.” The former suggests that attention is generated as a pursuit of various interests. It is argued that decision makers select to focus their attention on issues, objects, and events, such that they can ensure favorable organizational performance. This explanation closely follows the rationale developed for “*a set of values*” as well as for “*decision-making activity within the organization*” by Ocasio (1997). A favorable organizational performance calls for a particular mode of behavior or decision, which consequently regulates the appropriate locus of attention. As clarified by the principles of the ABV, available attention is limited. Therefore, attention as a scarce resource should be used as effectively as possible by selectively allocating it to critical issues, objects, and events in organizations.

On the other hand, the latter explanation or “*a logic of belief*,” states that decision makers select issues, objects, and events that are consistent with their belief system, such that they can efficiently establish their attention with limited cognitive efforts. As the available attention of decision makers is limited, it should be used as efficiently as possible. Therefore, establishing attention by building upon their current belief system is a direct consequence of the principles of the ABV discussed above. This second explanation should be of particular theoretical interest for scholars as we can independently define attention regulators from the contents of attention. The alternative explanation by “*a logic of interest*” can be rather convincing, but may sometimes be tautological by defining attention regulators with the content of consequential attention, as examined below.

### **III. Attention Regulator**

In this section, we review prior work to examine the various factors that direct attention. They include organizational goals (Cyert and March 1963; Greve 2008), organizational strategy (Ren and Guo 2011), organizational identity (Hoffman and Ocasio 2001), logic of action specified by the institution (Hung 2005; Thornton and Ocasio 1999), industry characteristics (Nadkarni and Barr 2008), characteristics of decision makers (Tuggle et al. 2010), schemas established by individuals (Hsu 2006) and groups (Barreto and Patient 2013; Hansen and Haas 2001), cognitive models of key decision makers (Kaplan 2008), organizational positions and roles (Barreto and Patient 2013; Ren and Guo 2011; Shepherd et al. 2017), and organizational slack (Ren and Guo 2011). We examine them by applying the framework of the four at-

tention regulators proposed by Ocasio (1997).

### **1. Attention-regulator 1: Rules of the game**

One of the most typical examples of the first attention regulator or “*rules of the game*” is institutions (North 1990). For example, Thornton and Ocasio (1999) argue that institutional logics or “*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*” (p.804) direct or structure the attention of decision makers. Institutional logics are certain norms of behaviors and decisions shared by participants of the industry as legitimate, well-established, and therefore enforcing. As they compete for a larger share of the resources, industry participants mutually imitate to abide to such norms as closely as possible. They aim to gain advantageous positions by sharing such norms of behaviors and decisions, thereby convincing various stakeholders, including shareholders, suppliers, distributors, and customers, that they are legitimate organizations.

Accordingly, institutional logics define how decision makers should allocate their limited attention. By applying this rationale to the higher education publishing industry, Thornton and Ocasio (1999) show that the criteria for the chief executive officer (CEO) succession changed around 1975 from author-editor relationships and internal growth to resources competition and growth by acquisitions. Underlying this shift was the change in institutional logics, with a change from “*an editorial logic*” focused on the quality of specialized books and reputation of editors to “*a market logic*” concerning growth and profitability of publishing business. As institutional logics define normative and legitimate modes of behaviors for industry participants, decision makers changed their locus of attention in selecting their CEO successor such that their decisions were consistent with the change in institutional logics. However, as institutional logics are defined with the function to regulate values, beliefs, and modes of appropriate behaviors, the association between institutional logics and attention of decision makers is assumed *a priori* by definition. As discussed below, other works on the ABV very frequently share the same logical shortcoming, which could be an inherent shortcoming of the current ABV as a whole.

Hung (2005) also examines the association between institutions and attention. According to Hung (2005), the locus of attention of the participants of the same industry may not be necessarily identical. Issues, objects, and events selected as decision makers’ locus of attention depend on the type of institutions to which they are embedded, or more importantly, on the degree of such embeddedness. As examples of different types of institutions, Hung (2005) examines a policy system and a business system. Hung (2005) attempts to explain the reasons why organizations under

the influence of the same institutional logics may adopt different behaviors by showing that institutions regulate or constrain behaviors of industry participants to the extent that decision makers are embedded to, and thus attend to different aspects of the focal institutions. Unfortunately, Hung (2005) does not directly measure the attention of decision makers, but merely restates institutional logics as the locus of attention. Ideally, institutional logics and attention of decision makers should be independently defined and operationalized before establishing the association between them. Given the highly cognitive nature of attention, directly operationalizing attention is very challenging.

Hung (2005) merely associates institutions and attention, but some other scholars extend this line of thinking by examining the mechanisms that govern the rise of the relationship between them. For example, Hoffman and Ocasio (2001) argue that whether a particular event is attended to by industry participants depends on how participants enact the focal event. More specifically, they identify “*the extent to which outsiders attribute direct accountability and responsibility to the industry for the event*” (p.424) as well as “*the extent to which insiders examine an external event as a potential threat to the industry’s image*” (p.424) as determinants of attention of decision makers of industry participants. Both define normative and legitimate behaviors of industry participants, which then “*shape*” and “*trigger*” the “*industry-level attention . . . which highlights how industry participants, in their communications and interactions with other industry participants, selectively focus their attention on a limited set of issues, situations, and activities that represent potential problems or opportunities for the industry*” (p.415) on the focal event. Precisely, it appears that Hoffman and Ocasio (2001) employ the saliency of events as a direct regulator of attention of decision makers, while outsiders’ attribution and insiders’ examination are modeled as moderators of the association between saliency and attention. However, they are not very explicit with their distinction. In other words, saliency of events (or issues and objectives) is not sufficient to command the attention of decision makers. In addition to such saliency, events should be enacted as critically influential on organizational performance. Hoffman and Ocasio (2001) also introduce a concept of “*industry identity*” to uncover the rationale behind why some attention is maintained while others are temporary. “*Industry identity*” is defined as “*the common rules, values, and systems of meaning by which industry participants establish rules of inclusion, competition, and social comparison among industry members; create distinctions within and between industries; and delimit industry boundaries*” (p.416). The concept is rather similar to the institutional logics discussed above. Further, Hoffman and Ocasio (2001) argue that attention to events enacted as challenging or inconsistent to the “*industry identity*” is maintained, whereas others are swiftly dissolved. However, it is important to note that the definition of

“*industry identity*” *per se* entails normative and legitimate modes of behaviors expected for industry participants. It is clear by definition that such norms of behaviors regulate the behaviors of industry participants, including the adoption of particular locus of attention. Therefore, it is inappropriate to assume that “*industry identity*” only determines the degree to which attention is maintained. Furthermore, the attention of decision makers is engendered under the influence of “*industry identity*” or the institutional logics, although some other factors also exercise influences. Consequently, established attention enacts, maintains, and redefines “*industry identity*,” while “*industry identity*” also directs attention. In other words, the relationship between “*industry identity*” or some other institutional influences and attention should not be characterized as unilateral, but as mutually reinforcing and coevolving.

As Hung (2005) appropriately points out, not all participants in the same industry share identical attention or behavioral patterns. For example, organizations select their own approach to compete even when they share the same competitive environment. Differences are typically observed across participants in the same industry in terms of their organizational goals (Cyert and March 1963; Greve 2008) or competitive strategies adopted to achieve the respective goals of organizations. Organizations select their unique competitive strategy such that they can most effectively leverage their organizational strength and achieve organizational goals. Accordingly, such differences in competitive strategies are represented in the attention of decision makers. For example, Ren and Guo (2011) argue that decision makers adopt different locus of attention as they differ in their choice of strategic typology (Miles et al. 1978).

This line of argument is extended by Nadkarni and Barr (2008) who examine the mechanisms underlying the association between competitive strategy and attention. More specifically, Nadkarni and Barr (2008) argue that the degree of industry velocity regulates the attention focus of top managers, resulting in distinct locus of attention observed across high velocity and low velocity industries. Top managers in high velocity industries face different “*cognitive challenges*” (p.1399) from those in low velocity industries. Consequently, “*the nature of interactions and learning that top managers in incumbent firms engage in*” (p.1399) differ. The efforts of top managers to appropriately make sense of the competitive environments and to select effective behaviors drive their attention to particular issues, objects, and events that are critical in their respective competitive environments. Similar to the case of institutional logics as an attention regulator, the underlying rationale is that normative and legitimate modes of behaviors regulate the attention of decision makers.



## 2. Attention-regulator 2: Players

The second attention regulator is “*players*” (Ocasio 1997). Decision makers vary in their characteristics and beliefs, as well as in their cognitive processes. Accordingly, such differences are reflected in the distinct locus of attention they select.

There is a rich accumulation of prior work that associates the characteristics of decision makers and their locus of attention. Many of these are of the proponents of the upper echelon theory (Hambrick 2007; Hambrick and Mason 1984). According to the upper echelon theory, patterns of decisions of top executives are explained by their demographic characteristics as well as by the composition of demographic characteristics found in top management teams. For example, organizational or industrial tenure, age, functional backgrounds, as well as the diversity in those characteristics influence the allocation of attention to new knowledge, technology, or strategic approaches (Bantel and Jackson 1989; Cho and Hambrick 2006; Finkelstein and Hambrick 1990). Functional backgrounds are also reported to influence the attention toward customers, competitors, and operational efficiency (Song 1982; Strandholm et al. 2004). For example, Tuggle et al. (2010) argue for a positive association between the proportion of directors with output-oriented backgrounds and the amount of board discussion of entrepreneurial issues. They also report a negative association between strong background faultlines among top executives and the amount of board discussion of entrepreneurial issues. In their empirical context, the amount of board discussions on new products or new markets operationalizes the degree to which board members attend to these issues. They also found that the associations between the top management’s characteristics and their attention are moderated by the degree of informality of the board meeting. The finding suggests that demographic characteristics of decision makers strongly influence their locus of attention to the extent that decision makers are allowed to express their opinions freely in an informal atmosphere.

Other scholars examine leadership styles of managers as a potential regulator of their attention (Jansen et al. 2009). They report associations between a transformational leadership style and the pursuit of radical innovation, whereas a transactional leadership style is associated with the use of existing knowledge, which is a precursor of incremental innovation. Assuming that the pursuit of a particular type of innovation initiatives is a direct consequence of the attention of decision makers to their respective type of innovation opportunities, the finding corroborates the argument that leadership styles of decision makers are important regulators of their attention.

The beliefs of decision makers are also important determinants of their attention. Barreto and Patient (2013) examine “*cognitive attentional driver*” (Barreto and Patient 2013, p.701), referred to as the “*capability perceptions, defined as the extent*

to which each manager perceives his or her firm as having the resources and capabilities to successfully address the shock” (Barreto and Patient 2013, p.690), with respect to its effects to promote opportunity interpretation of shocks. According to Barreto and Patient (2013), decision makers develop different cause-effect beliefs depending on their capability perception. They consequently establish early attitudes regarding a shock by building on their cause-effect beliefs. Such early attitudes are critical as decision makers direct their attention toward aspects of the shock that are consistent with their early attitudes. It is noteworthy that cognition of decision makers on the cause-effect relationship plays critical roles. However, their rationale should also be criticized as tautological considering that their definition of “*capability perception*” *per se* entails the contents of ensuing attention.

Demographic characteristics, beliefs, and behavioral styles of decision makers regulate their attention as these characteristics are associated with particular cognitive frames of decision makers. Kaplan (2008) examines the reasons for successful as well as unsuccessful adoption of new technologies and shows that the difference between them is whether cognitive models of CEOs enabled them to attend to potential opportunities associated with the new technologies. Shepherd et al. (2017) argue that decision makers attend to core concepts, rather than peripheral concepts, of their knowledge structure to the extent that they face cognition challenges. It is owing to the fact that decision makers can more efficiently deploy their attention capacity, which is limited, by relying on their current knowledge structure. This is the function of an attention regulator as explained by the “*logic of belief*” (Barreto and Patient 2013). It is a straightforward consequence of the fact that decision makers are “*cognitive misers*” (Fiske and Taylor 1984).

Although not necessarily in the context of organizational decision making, Hsu (2006) empirically shows that one can economize their cognitive capacity by relying on their cognitive schema. More specifically, Hsu (2006) found that critics are more likely to critique movies of particular genres for which they have established coherent and well-structured schema (or belief system). This is due to the fact that “*they can easily and comfortably review*” (p.472) if they have the schema to rely on. It is also shown that such tendency to rely on pre-established schema is more salient when the carrying capacity of critics or the amount of available attention is constrained. Therefore, schema or cognitive frames associated with the characteristics of decision makers direct their attention as an attention regulator.

### **3. Attention-regulator 3: Structural positions**

Considering prior work on the third attention regulator or “*structural positions*,” Ren and Guo (2011) is noteworthy. They examine the determinants of attention of middle managers on exploratory as well as exploitative opportunities in a

context of corporate entrepreneurship. They particularly adopt the perspective to examine attention regulators as firms' structures and contexts, or attention structures (Ocasio 1997). Their focus on attention of middle managers is noteworthy as most of the prior work on ABV examines the attention of top managers. In addition to a strategic typology (Miles et al. 1978), Ren and Guo (2011) argue that structural positions of middle managers exert strong influences on the attention of middle managers. More specifically, whether middle managers are assigned to the responsibilities of product champions or not, whether they belong to a corporate venture unit or not, as well as whether their positions are boundary spanning or not, are argued to be important determinants. Structural positions indicate the roles and responsibilities expected of the occupants of those positions. Accordingly, structural positions define appropriate modes of behaviors and associated attention for decision makers who occupy those positions.

Shepherd et al. (2017) follow this rationale to develop a further argument on the relationship between "*structural positions*" and attention. Namely, Shepherd et al. (2017) argue that in a context where top managers' attentional processing is characterized as top-down, organizational members attend to incremental changes in their organizational or competitive environments. On the contrary, when top managers' attentional processing is characterized as bottom-up, attention is directed toward discontinuous changes. Similarly, Ren and Guo (2011) argue for the possibilities that the locus of attention of middle managers may differ to the extent that top managers reinforce the importance of issues, objects, and events that are closely relevant to the current business. These issues, objects, and events are easily articulated or precisely understood in advance, whereas those which are irrelevant are unpredictable and less easily articulated. Accordingly, "*structural positions*" are closely associated with "*the top-down cognitive (and motivational) structures that generate heightened awareness and focus over time to relevant stimuli and responses*" (Ocasio 1997, p.1288). Such characterization of attentional processing either as top-down or bottom-up can be considered as an example of "*structural positions*" as an attention regulator owing to the fact that attentional processing of top-managers regulates the degree to which expected behaviors are explicitly defined and communicated.

In addition to the "*capability perception*" discussed above, Barreto and Patient (2013) also examine "*structural positions*" of decision makers as a determinant of their attention. They argue that "*shock distance as the distance from a manager's structural position (i.e., his or her subgroup) to the locus of direct impact of a given shock*" decides the political interests of decision makers, thereby enabling opportunity interpretation toward the shock. Their underlying rationale is that decision makers objectively recognize the shock by weighing both opportunity aspects and threat

aspects of the shock to the extent that their interests are distant from the locus of the focal shock. Although it is not very clear why the objective perspective enables attention on opportunity aspects rather than threat aspects (as it appears to be also possible to argue that one can recognize the opportunities and threats seriously to the extent that their interests are closely tied to the locus of shock), Barreto and Patient (2013) is noteworthy as they attempt to uncover the mechanism in which “*structural positions*” regulate the attention of decision makers. Further work is required to associate structural determinants, such as organizational positions with qualitative aspects of attention, including opportunity perception and threat perception.

#### **4. Attention-regulator 4: Resources**

Considering the fourth attention regulator or “*resources*,” there is relatively limited prior work. One of these limited works that examine “*resources*” as an attention regulator is Ren and Guo (2011) discussed above. They argue for the possibility that organizational slack regulates attention on exploratory initiatives by proposing a curvilinear (inversed U-shape) relationship between them. However, Ren and Guo (2011) closely follow Nohria and Gulati (1996) for their theoretical rationale, while Nohria and his colleague deal with the relationship between the amount of organizational slack and innovation achieved by the organization. Therefore, it is critically important to carefully examine the validity of the argument by Ren and Guo (2011) who assume a direct relationship between attention on exploratory initiatives and achieved innovation. Furthermore, while the central interests of Ren and Guo (2011) rest on the distinction between exploratory and exploitative entrepreneurial initiatives, no argument on differential influences of organizational slack on respective initiatives is developed, thereby leaving further room for future studies.

Considering information as an important class of organizational resource, some other authors also argue that the amount of information, or the manner in which the information is provided, regulates the attention of decision makers. According to Hansen and Haas (2001), “*in information-rich contexts, where organization members are likely to experience information overload (i.e., a very high ratio of readily available information to the information needed to complete a task)*” (p.1), organizational members are more likely to attend to the suppliers of information who selectively focus on particular themes and topics of their expertise. Organizational members are so constrained by their level of cognitive capacity available as they may not be able to precisely evaluate the relevance and value of all the information provided to them. Consequently, they satisfice themselves by attending to the suppliers of information who are known to be specialized, and therefore experts of par-

ticular themes and topics. In other words, attention is regulated by established mental models with respect to the quality of information suppliers. Shepherd et al. (2017) also find that attention is focused on local issues, objects, and events under information overload. Accordingly, Hansen and Haas (2001) provide a useful perspective to examine the mechanisms through which “resources” as an attention regulator direct attention of decision makers. Unlike “rules of the game” or “structural positions,” it is unlikely the case that “resources” define particular modes of appropriate behaviors. Therefore, it is conceivable that “resources” regulate the attention of decision makers by enabling cognitively less challenging (or demanding) attentional procedures.

#### IV. Discussion

Our examination of prior work on various attention regulators reveals that scholars have uncovered various alternative choices of attention regulators by loosely building upon the framework proposed by Ocasio (1997). On the other hand, there remain significant amounts to learn about the mechanism through which alternative attention regulators direct the attention of decision makers. Authors develop explanations unique to a particular attention regulator they examine, while there remains a lack of parsimonious theoretical framework that can be employed to explain the mechanism shared by various attention regulators. Therefore, developing such a theoretical framework is one of the most important research agendas in the ABV. One promising direction is to follow the framework of “a logic of interest” and “a logic of beliefs” proposed by Barreto and Patient (2013). Explanations built on “a logic of interest” is likely to be appropriate for “rules of the game” and “structural positions.” On the other hand, “a logic of beliefs” appears to be appropriate for “players.” Considering “resources,” no robust rationale is proposed yet. Therefore, examining the mechanisms of “resources” as an attention regulator should be the highest theoretical interest among others. We discuss each attention regulator below.

Scholars have uncovered relatively more concerning the first attention regulator or “rules of the game.” It is very straightforward to understand how “rules of the game” direct attention of decision makers as by their definition, “rules of the game” define appropriate modes of behaviors for organizations under the influence of the rules. In other words, influences of the “rules of the game” on attention are self-explanatory. Scholars leverage this self-explanatory nature of “rules of the game” to accumulate robust and rich findings. Similarly, “structural positions” share the function to define appropriate modes of behaviors at the level of individuals, rather than at the level of a whole organization. Therefore, it is relatively easy to understand a

mechanism through which “*structural positions*” regulate the attention of decision makers, although findings on “*structural positions*” from prior work are not necessarily very abundant.

On the other hand, one may be criticized to be tautological when she explains the influences of an attention regulator by its function to define the appropriate modes of behaviors. As discussed previously, one of the most important characteristics of the ABV is to ascribe the differences in organizational performance to the extent that decision makers select the appropriate locus of attention. Given that the attention of decision makers are regulated by appropriate modes of behaviors defined by the “*rules of the game*” or “*structural positions*,” it is highly likely that the decision makers are directed to attend to issues, objects, and events closely relevant to favorable organizational performance. If this is true, the attention of decision makers is, by its definition, directed to ensure favorable organizational performance. This is inconsistent with the core argument of the ABV that the extent to which decision makers select the appropriate locus of attention determines organizational success. Furthermore, it would be very challenging to answer the important theoretical as well as practical question on the determinants of the degree to which the appropriate locus of attention is selected.

Accordingly, the second attention regulator or “*players*” is of a particular theoretical interest as “*players*” as an attention regulator do not share the same mechanism of influences similar to “*rules of the game*” or “*structural positions*.” More specifically, they are not appropriate modes of behaviors, but cognitive frames adopted by “*players*” that regulate the locus of attention of decision makers. Decision makers are characterized by their unique cognitive frames associated with their characteristics, beliefs, and behavioral styles. Further, the cognitive frames drive the attention of decision makers with limited cognitive capacity. Considering this approach to explain the mechanisms of attention regulators, we can avoid the tautological explanation associated with “*rules of the game*” and “*structural positions*.” However, the argument may be too deterministic as is often the case with the theory of upper echelon (Hambrick 2007; Hambrick and Mason 1984). If favorable organizational performance is attained by certain characteristics, beliefs, and attitudes of decision makers, it is of no use to carefully examine the complicated organizational processes as the influences of those processes on organizational performance are marginal.

In contrast, there remains significant amount to uncover on the fourth attention regulator or “*resources*.” Ocasio (1997) indicates that “*resources*” are an attention regulator as it influences cognitive schemas of decision makers when he argues that the repertoire of “*answers*,” or “*the cognitive schemas of alternatives considered by organizational decision makers in making decisions and enacting moves*,” “*is*

*shaped, but not fully determined, by existing organizational resources*” (p.198). However, he does not specify which aspect of cognitive schemas of decision makers is influenced by the “*resources*.” Ocasio (1997) shows the directions of our future inquiry when he suggests certain possible locus of our further examinations, including “*answers and solutions embedded in organizational resources*” (p.198), “*the division of labor inherent in the firm’s resources*” (p.199), and “*the degree to which their human capital is associated with the various resources of the firm*” (p.200). However, it is challenging to deny that suggested influences of “*resources*” are redundant with those of “*players*” and “*structural positions*.” Unfortunately, we are yet to identify which “*resources*” direct what type of attention of decision makers.

Considering the possibility that “*resources*” define specific patterns of behaviors, even those who emphasize the performance implications of resources are not aggressive enough to specify close associations between resources and behaviors of organizations. Traditionally, the proponents of the RBV argue that differences in organizational performance are due to differences in organizational resources. However, some recent RBV authors revised the simple and direct relationship between resources *per se* and organizational performance. As determinants of organizational performance, they emphasized on the importance of managerial actions to bundle and deploy resources (Ndofor et al. 2011; Sirmon et al. 2008) or incentives of employees in the process of absorbing and deploying resources (Wang et al. 2016). Therefore, it is highly unlikely that “*resources*” *per se* define particular modes of behaviors. The influences of resources on organizational performance depend on which other resources are combined or what strategy is adopted to employ the focal resources. Accordingly, the mechanism through which “*resources*” as an attention regulator direct the attention of decision makers should be different from that of “*rules of the game*” or “*structural positions*,” where there is no link with the appropriate modes of behaviors. As Ocasio (1997) appropriately indicates, “*resources*” regulate the attention of decision makers through a similar mechanism with the second attention regulator or “*players*” by influencing cognitive schemas of decision makers. Therefore, our future efforts to reveal how “*resources*” regulate the attention of decision makers should focus on examining the influences of “*resources*” on cognitive schemas of decision makers.

In our future efforts to deepen the understanding of “*resources*” as an attention regulator by examining the mechanisms through which “*resources*” regulate the attention of decision makers, organizational slack (Bourgeois 1981; Cyert and March 1963) is of particular theoretical importance. Organizational slack enables managerial discretion (Finkelstein and Hambrick 1990; Hambrick and Finkelstein 1987). In other words, no particular behavior is enforced by organizational slack. For example, given its characteristics as general-purpose resources, it is challenging to *ex ante*

associate a specific strategy with organizational slack. On the other hand, scholars have uncovered wide varieties of influences of organizational slack on cognitive processes of decision makers. For example, organizational slack represents financial stability of organizations or appropriate prior decisions, thereby influencing the extent that decision makers positively evaluate the current states of their organizations (Cyert and March 1963). Such positive evaluation of the current status also influences the risks perceived by organizational members (Wang et al. 2016). Considering that organizational slack buffers organizations from external environments, decision makers in organizations with organizational slack are characterized as less alert to environmental changes, and at times, even complacent (Smith et al. 1991; Thompson 1967). It is also reported that organizational slack reduces concerns on potential risks associated with initiatives of low likelihood of success by relaxing mutual monitoring by dominant coalitions of organizations (Cyert and March 1963). As such, we have uncovered various influences of organizational slack on wide varieties of organizational processes and initiatives, including innovation, strategy, and organizational design. However, more work remains to be done to propose an integrative framework that parsimoniously explains the distinct influences of organizational slack on cognition of decision makers. Redefining organizational slack as a type of attention regulator is one promising avenue to deepen our understanding on organizational slack. Furthermore, organizational slack can be considered as the most general form of resource as it shares a fundamental characteristic of a reservoir of potential economic value with other resources of more specific usages, including machines, facilities, and human resources. If this is true, it may be possible and valid to develop an explanation of organizational slack as an attention regulator, and then apply it to other classes of resources with more specific usages.

By deepening our understanding of “resources” as an attention regulator, we can also expect to complement the RBV. Given that Ocasio (1997) argues that “resources” regulate the attention of decision makers, it is inevitable that “resources” also affect the contents of decisions made under the influence of the attention regulated by “resources.” One of the most serious criticisms against the RBV is that its rationale is tautological (Priem and Butler 2001). More specifically, as it is challenging to identify the competitively important resources until favorable organizational performance is attained, one cannot explain the association between resources and favorable organizational performance *ex ante*. Critics argue that the RBV is only useful for *ex post* rationalization, but useless for theoretical prediction or practical decision making. The ABV may complement the RBV as it contributes to the further development of the RBV by more precisely explaining the association between “resources” and favorable organizational performance.



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