ABSTRACT. Organizational attention is an underdeveloped construct that can account for a variety of organizational phenomena. Attention is the means by which individuals select and process a limited amount of input from the enormous amount of internal and environmental inputs bombarding the senses, memories and other cognitive processes. This article develops a coherent theory of organizational attention, drawing on Cornelissen's domain-interactive metaphor model. Topics that form the building blocks of individual attention research, including selective and divided attention, automatic versus controlled processes, attention and memory, attention and learning, are examined in terms of their applicability to the organizational context.

INTRODUCTION

In his seminal paper, Cornelissen (2005) discussed the role of metaphor in organizational theory and outlined a new model of how metaphor operates – the domain interaction model – which has had important repercussions for both theory and research. He showed that metaphor building goes beyond the comparative mapping function traditionally ascribed to this linguistic device and suggested that "metaphor involves the conjunction of whole semantic domains in which a correspondence between terms or concepts is constructed rather than deciphered and where the resulting image and meaning is creative." (Cornelissen, 2005, p. 751; underscoring is mine). Metaphors are pervasive both in thought and action (Lakoff &
Johnston, 1980). Although there is a debate about whether the use of metaphor is valid in organizational theorizing, metaphors are thought to aid theorists and researchers in broadening their perspectives, especially in the early stages of theory development (Bacharach, 1989; Lakoff & Johnson, 1980; Morgan, 1997; Skorczynska & Deignan, 2006; Weick, 1989).

Attention is one of the most intensely studied topics in psychology and cognitive science (Pashler, 1998). It is often considered a core cognitive process, a basis on which to study other cognitive processes. Of the processes associated with human cognition (decision-making, memory, learning, etc.), attention is considered the most concrete because it is closely linked to perception. As such, it is a gateway to the rest of cognition, in particular learning and memory. According to DeGangi and Porges (1990), "when a person is actively engaged in voluntary attention, functional purposeful activity and learning can occur." (p. 6). Learning disorders are associated with poor attention. However, despite its importance, the concept of attention has not been fully explored within the organizational context.

A number of theories have depicted organizations as information processing systems (Corner, Kinicki & Keats, 1994; Galbraith, 1977; Tushman & Nadler 1978). Similarly, some of the most influential theories of human attention have attempted to explain attention by using ideas from information processing theory (Broadbent, 1958; Treisman, 1960; Deutsch & Deutsch, 1963). In their work on organizational memory Walsh and Ungson (1991) posited that if organizations exhibit characteristics of information processing systems they should integrate some sort of memory. The same can be said for attention. To the extent that organizations operate as information processing systems, and incorporate memory, they should also have an attention mechanism, similar to that of human beings, that operates as a gateway that determines which inputs will be processed by the organization and may be stored in its memory and which ones will be ignored. This view corresponds to the complex metaphor of Organizational Mind (Cornelissen & Kaouros, 2008; Weick, 1993). Complex metaphors allow scholars to envision possibilities for theorizing about organizations (Alvesson & Kärreman, 2007) and to identify new connections and relationships (Weick, 1989). The organizational mind metaphor allows for "a 'scaling up' of
distributed individual actions to the level of the organization and highlight[s] that organizations can change and learn..." (Cornelissen & Kaouros, 2008, p. 969).

Nevertheless, the transformation from the individual to the organizational level is not straightforward. Researchers studying cognitive processes disagree on the form organizational cognitive processes should take and on what level these might reside in the organization. It has been claimed that "organizations are mental entities capable of thought" (Sandelands & Stablein, 1987, p. 136), whereas others reject this view and argue that organizational learning, organizational memory and other organizational cognitive processes are only metaphors (Argyris & Schon, 1978; Kim, 1993). Somewhere between the two is the notion that organizational cognitive processes can be seen as the outcome of individual cognitive processes of either the individuals who comprise the organization (Kiesler & Sproull, 1982; Sims & Gioia, 1986) or the top management team (Hambrick & Mason, 1984 – the upper echelon perspective).

Using Cornelissen's (2005) model, this paper revisits organizational attention, an underdeveloped construct which can account for a variety of organizational phenomena. The purpose of this paper is to theorize organizational attention and to provide a framework for studying this intriguing construct. The organizational attention metaphor demonstrates the creative potential of metaphors in the process of analogical reasoning and organization theory construction (Cornelissen, 2005; Oswick, Keenoy & Grant, 2002). Since human cognitive processes such as learning, knowledge creation and attention are related to each other, the discussion about organizational attention metaphor will similarly emphasize the broader context of cognitive processes metaphors (i.e. organizational learning, organizational memory, etc.). However, although related, these various processes are separate mechanisms. Developing and using one metaphor does not detract from the value of others. Organizational memory and organizational attention are not part of organizational learning, just as human memory and attention are not part of human learning.

To elaborate a theory of organizational attention, I follow Cornelissen's three phase model, which involves (a) the development of a generic structure by mapping the parallel structures and the
correspondence between the source and the target structures, (b) the development and elaboration of the blend, by composing elements from the target and the source concepts, and finally (c) the capture of a new emergent meaning which is linked and translated back to the target concept.

THE DOMAIN-INTERACTION MODEL

Phase 1: Development of a Generic Structure

In this phase the terms of the metaphor are encoded and the parallel structures of the relevant domains are mapped. In our case individual attention and organizational attention domains are defined, followed by a mapping of the correspondence between parallel structures.

Attention is the means by which we select and process a limited amount of input from the enormous amount of internal and environmental inputs bombarding our senses, memories and other cognitive processes (De Weerd, 2003; Duncan, 1999; Pashler, 1998; Posner & Fernandez-Duque, 1999; Rao, 2003; Sternberg, 2004). Attention is the ability to focus and maintain interest in a given task or idea while ignoring other available inputs, including distractions. Attention is closely related to consciousness and is selective by nature. The argument that "the process of selecting from among the many potentially available stimuli is the clearest manifestation of selective attention" (Pashler, 1998, p. 37) has prompted many (see for instance Kahneman, 1973) to consider that attention is a skill that can be improved (i.e., as a learning strategy).

Attention is selective by nature. Selective attention is clearly manifested by the process of selecting from among the many potentially available stimuli (Pashler, 1998). Selective attention is a focus on a specific aspect of a scene while ignoring other aspects. By attending to one thing we divert attention from others (Desimone & Duncan, 1995; Duncan, 1996). The most influential theories of selective attention are those of Broadbent (1958), Treisman (1960), and Deutsch and Deutsch (1963). They differ in their analysis of the locus of the bottleneck in a person's information processing system, where the bottleneck is either "early" (perceptual limitations) or "late" (response limitations).
Organizational attention is defined as the socially structured pattern of attention evidenced by decisionmakers within the organization (Ocasio, 1997). Organizational attention, like human attention, is a limited resource. “Attentional limits filter or screen incoming information such that a great deal of data pertinent to strategic decision may never get processed” (Corner, Kinicki & Keats, 1994, p. 296). Garg, Walters and Priem (2003) showed that the extent to which CEOs are selective in their attention to sectors of the environment was a significant predictor of performance.

Ocasio (1997, p. 188) developed a framework for an attention-based view of the firm. He defines corporate strategy as “a pattern of organizational attention, the distinct focus of time and efforts by the firm on a particular set of issues, problems, opportunities, and threats, and on a particular set of skills, routines, programs, projects and procedures”. Ocasio (1997) argued that since the environment of a firm’s decision is of infinite complexity and firms are bounded in their capacity to attend to all environmental stimuli, decision makers are selective in those aspects of the environment of decisions that they attend to. Different environmental stimuli are noticed, interpreted, and brought into conscious consideration. Durand (2003) investigated organizational attention in terms of firms' investment in internal and external information, and found that higher relative investments in market information appeared to reduce errors and bias in forecasting.

Mapping the correspondences between the parallel structures reveals that both individuals and organizations are exposed to overwhelming amounts of internal and environmental input. Limited resources to deal with all these inputs force individuals and organizations to select and respond to some while ignoring others. The organizational process is analogous to individual attention. Attention processes take place in both entities. Individuals let selected stimuli pass through a very limited capacity channel to a detection device where semantic analysis takes place. Other stimuli are filtered out and they are not analyzed for meaning and do not reach consciousness or awareness (Broadbent, 1958, 1982; Broadbent & Broadbent, 1987). In the organizational context, knowledge management models and process theories, almost without exception, incorporate a stage or phase in which a given knowledge item is brought to bear on a current decision or action.
(March & Olsen, 1976). This stage, referred to alternatively as Externalization (Hoe, 2006; Nonaka, 1994), or Awareness (Schwartz, Divitini, & Brasethvik, 2000), is of crucial importance in any knowledge management cycle.

Thus, firms respond to certain events or stimuli in their environment while neglecting others because organizations, like individuals, have a limited attention capacity. By extension it can be assumed that attention is manifested in both individuals' and organizations' behavior.

**Phase 2: Development and Elaboration of the Blend**

The following sections review the elements of the individual and organizational attention domain that can enter into a blend. Issues related to the domain of individual attention including selective and divided attention and automatic versus controlled processes are reviewed and then examined in terms of their correspondence to the organizational constructs of bounded rationality, absorptive capacity, organizational learning and memory.

**Selective Attention**

The cocktail party scenario, where attention is directed to one conversation while ignoring many other conversations taking place at the same time, is a common example of selective attention (Cherry, 1953). It is also the point of departure for the debate regarding early versus late selection theories. Being engaged in one task limits the capacity of the observer or the listener to deal with other stimuli and thus filters out other inputs. The early selection theory posits that incoming stimuli, briefly held in a sensory register, go through pre-attentive analysis by a selective filter on the basis of their physical characteristics. According to this theory we can only attend to one input at a time. Hence attention is a limited capacity channel that determines the serial nature of the perceptual system.

On the other hand, late selection theories (Deutsch & Deutsch, 1963; Devue & Brédart, 2008; Duncan, 1980; Norman, 1968) argued that familiar objects can be perceived unselectively and with no capacity limitations. According to these theories we cannot voluntarily choose to identify or recognize something (Pashler, 1998). No matter what one might choose to attend to or ignore, the sensory
machinery performs its computations for all incoming stimuli. Selective processing is assumed to start only after analysis is completed, and therefore awareness depends on this mechanism.

**Attentional Resource Theories**

Another set of theories extended the notion of filter to that of limited attentional resources (Kahneman, 1973; Navon & Gopher, 1979). These theories attempt to explain how people can perform more than one attention-demanding task at the same time. They suggest that we have a fixed amount of attention that we can choose to allocate depending on task requirements. Although attentional-resource theories have been severely criticized, they are now considered to complement filter theories rather than provide a complete account of attentional processes (Sternberg, 2004).

**Divided Attention**

Sometimes the attentional system must perform more than one discrete task at the same time (e.g. driving, walking, chairing a meeting). Divided attention is the ability to attend to more than one stimulus at a time. Attending to more than one stimulus at a time reduces the level of the response in terms of both accuracy and response time (Craik, Govoni, Naveh-Benjamin & Anderson, 1996; Pashler, 1994; Strayer & Johnson, 2001). Warner (2004) found that 59% of all car accidents are caused by failures related to divided attention. Improvement in performance of divided attention tasks occurs as a result of practice (Spelke, Hirst & Neisser, 1976). These findings support the idea that controlled tasks can become automatized so that they consume fewer attentional resources. Furthermore, two different controlled tasks may be automatized to function together as one unit (Spelke, Hirst & Neisser, 1976).

**Controlled versus Automatic Processes**

Many cognitive processes are differentiated in terms of whether they require conscious control or not (Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977). Automatic processes need no conscious control (Palmeri, 2003). They demand minimal cognitive effort and they are fast and carried out in parallel. They consume few attentional resources (Posner & Snyder, 1975). On the contrary, controlled processes require conscious control. They are carried out
serially and they are slower than automatic processes (Sternberg, 2004). These processes impose attention capacity demands (Pashler, 1998).

Logan (1988) suggested a continuum of processes between those that are fully automatic and those that are fully controlled. Many tasks that start out as controlled processes become automatic (James, 1890; Sternberg, 2004). For example, speaking a foreign language is initially a controlled process that eventually becomes automatic when thinking in the foreign language is possible. Table 1 summarizes the differences between controlled and automatic processes.

Automaticity is considered a special topic in the study of attention (Kahneman & Treisman, 1984; LaBerg, 1981; Logan, 1988). Logan (1988) proposed an instance theory of automaticity that explains the effects of practice by assuming that new traces (instances) are accumulated in memory as a result of particular experiences in performing a task. Logan suggested that performance is automatic when it is based on direct retrieval of solutions from memory. Relatively unpracticed performance demands algorithmic calculation, but with practice, the task can be carried out by relying on direct memory retrieval. For example, a mental arithmetic task can be carried out by rule-based calculation or by memory retrieval. Both methods are performed simultaneously and compete with each other. The process that finishes earlier determines the response. With practice, there are increasingly more participants in the race, because each trial appends a new trace capable of supporting direct memory retrieval in upcoming trials. A response is generated when one of the processes is completed. Eventually, the finishing time for retrieval from memory decreases and this process become faster than the algorithm-based process. "Automatization reflects a transition from algorithmic-based performance to memory-based performance" (Logan, 1988, p. 493) (See Table 1).

Organizational Issues in Attention

The issues discussed up to this point are related to individual attention. The following sections explore related concepts from the organizational domain. At the individual level, capacity and selection are considered to be major aspects of human attention. Capacity is
TABLE 1
Controlled versus Automatic Processes

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Controlled Processes</th>
<th>Automatic Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of intentional effort</td>
<td>Require intentional effort</td>
<td>Require little or no intentional effort</td>
</tr>
<tr>
<td>Degree of conscious awareness</td>
<td>Require full conscious awareness</td>
<td>Generally occur outside of conscious awareness</td>
</tr>
<tr>
<td>Use of attentional resources</td>
<td>Consume many attentional resources</td>
<td>Consume negligible attentional resources</td>
</tr>
<tr>
<td>Type of processing</td>
<td>Serial</td>
<td>Parallel</td>
</tr>
<tr>
<td>Speed of processing</td>
<td>Relatively slow</td>
<td>Relatively fast</td>
</tr>
<tr>
<td>Relative novelty of tasks</td>
<td>Novel and unpracticed or tasks with many variable features</td>
<td>Familiar and highly practiced</td>
</tr>
<tr>
<td>Level of processing</td>
<td>High levels of cognitive processing</td>
<td>Low levels of cognitive processing</td>
</tr>
<tr>
<td>Tasks difficulty</td>
<td>Difficult</td>
<td>Easy</td>
</tr>
<tr>
<td>Process of acquisition</td>
<td>With sufficient practice highly controlled processes may become partly or even wholly automatic. The amount of practice required for automatization increases dramatically for highly complex tasks</td>
<td>Source: Adapted from Sternberg (2004).</td>
</tr>
</tbody>
</table>

the amount of stimuli that can be noticed and processed at a given time. Kahneman (1973) suggested that the allocation of finite resources might account for a broad range of limitations people experience in carrying out different activities at the same time. Due to these limitations, the individual has to select, from the available stimuli, those s/he will focus on and process.

Both capacity and selection can be extrapolated from individual terms to organizational terms. Due to limited capacity, individuals can attend to a limited amount of stimuli, and thus operate selection mechanism that selects the stimuli to be processed and filter the rest. In the organizational context, capacity can be defined as the amount of issues that can be processed by decision makers, and selection refers to the specific issues that are selected and processed by the firm and its decision-makers. These two dimensions complement each other. "The environment of decisions is of infinite
Complexity and firms are bounded in their capacity to attend to all (or even most) environmental stimuli that impinge, directly or indirectly, upon any particular situation" (Ocasio, 1997, p. 193). Within the constraint of limited capacity, organizations have to select the issues that they can attend to, while filtering out the rest (Weick & Sutcliffe, 2006). However, organizations differ as regards attentional capacity and the different issues or stimuli they select to deal with (Sullivan, 2010; Yaniv & Elizur, 2003).

While organizational attention is rarely discussed in the literature, the related terms of absorptive capacity and bounded rationality, which are frequently used to depict organizational limits, can be mapped to selection and attention capacity, respectively.

Absorptive Capacity

Cohen and Levinthal (1990) described the ability of a firm to evaluate and utilize new knowledge within the evolving knowledge base it has already accumulated. They defined absorptive capacity as the idea that prior related knowledge confers an ability to recognize the value of new information, assimilate it, and apply it to commercial ends. Cohen and Levinthal (1990) argued that when a firm wishes to acquire knowledge that is unrelated to its ongoing activity, the firm must devote efforts to creating or increasing absorptive capacity.

The idea that prior existing knowledge affects the ability of the organization to recognize new inputs can be juxtaposed to Neisser's (1976) human perceptual cycle. He argues that the human ability to perceive any input from the environment depends on previous knowledge that is stored in memory. He suggests that perceptual processes produce a preliminary and temporary representation of input features which act as cues to activate knowledge schema representations, which in turn can direct attention to a more detailed analysis of cue features. The perceptual process is depicted in Figure 1.

Organizational processes of acquiring and accumulating knowledge can be characterized by a similar cycle. Prior organizational knowledge determines its absorptive capacity. Knowledge transfer processes are cyclic in that existing knowledge directs the organizational attention to certain types of knowledge and
ignore others. The organization receives inputs from its environment, both internal and external, and processes them according to its existing knowledge. Existing organizational knowledge is stored in organizational memory (Ackerman, 1996; Tuomi, 1999; Walsh & Ungson, 1991). Knowledge is stored in several physical locations (Simon, 1947), as well as in individuals (Argyris & Schon, 1978), procedures (Cyert & March, 1963), and in corporate culture (Ackerman, 1996; Barney, 1986).

Since absorptive capacity affects the ability of the firm to recognize the value of new knowledge, it acts as a knowledge filter. The firm’s existing knowledge influences the absorption of new knowledge and filters unrelated knowledge. In other words, existing knowledge directs the firm’s attention to new related knowledge. Absorptive capacity is a situational feature that determines which knowledge sources the firm will choose to focus on. In terms of
organizational attention, absorptive capacity is akin to selection. Absorptive capacity accounts for some aspects of new knowledge accumulation by the organization and considerably influences selection, but it fails to consider all the factors involved in selection behavior, as discussed below.

**Bounded Rationality**

The limited attentional capability of humans results in their bounded capacity to be rational (Simon, 1947). The bounded rationality problem (Simon, 1955) is the inability of firms to maximize over the set of all conceived alternatives when dealing with real-life decision problems. These problems are often too complex to comprehend. Nelson and Winter (1982) focused on the evolution of simple stable routines that are used to guide action. Because of the bounded rationality problem, these routines cannot be too complicated and cannot be characterized as "optimal", since they only take into account partial information. However, they claimed that "they may be quite satisfactory for the purposes of the firm given the problems the firm faces" (1982, p. 35).

Bounded rationality in an individual is parallel in many ways to organizational attention. It is based on the limited ability of decision-makers to pay attention to all aspects of the problems they are dealing with. Because their attention capacity is limited, they tend to take shortcuts. Bounded rationality is akin to attention capacity and the key issue here is what causes decision makers to choose certain inputs to focus on and ignore others.

**Organizational Learning and Memory**

Two inseparable facets of knowledge are *learning*, the process of creating and accumulating new knowledge (Argyris & Schon, 1978; Chen, 2007), and *memory*, the process by which information is retained for future use (Walsh & Ungson, 1991). "Learning can be defined as the process by which new information is incorporated into the behaviour of agents, changing their patterns of behaviour and possibly, but not always, leading to better outcomes" (Eisenhardt & Santos, 2002, p. 141). Agents' new behaviour is accumulated into organizational behaviour, and the new pattern of organizational behaviour reflects organizational learning.
The learning of new knowledge is closely related to the pre-existing knowledge held by the individual or the organization. Baum, Li and Usher (2000) pointed out that learning tends to be better if it is based on sound initial choices, as opposed to trying to innovate. Prior related knowledge confers an ability to recognise the value of new information, assimilate it, and apply it to commercial ends. In short, the familiar is easier to absorb than the unfamiliar.

Clearly, the accumulation of organizational knowledge is influenced by interactions between individuals in the organization. Kim (1993) developed a comprehensive model that links individual and organizational learning through mental models; i.e., the internal images of how the world works. Conner and Prahalad (1996) found that organizational mode is a major factor in the organizational knowledge accumulation process. They posited that the organizational mode through which individuals cooperate affects the knowledge they apply to business activity. As knowledge flows in the organization between individuals, and from one level to another, an organizational repository is accumulated through interactions between the organization’s agents. Thus a knowledge flow structure can be defined as the routines and practices that enable these interactions and the accumulation of new knowledge into the organization’s repository. The knowledge flow structure of the firm can be seen as an intangible resource that reflects “organizational tacit knowledge” which embodies strategic advantage. Organizational tacit (as compared to explicit) knowledge is organizational knowledge that is not documented or formalised. This kind of knowledge is exemplified in the routines and processes carried out by the organization. The knowledge flow structure of the firm is one manifestation of tacit knowledge and is a major factor in enabling the creation of new knowledge. This structure is an enabler of automatic processes that are responsible for the creation of new knowledge.

Phase 3: Organizational Attention: A New Model of Emergent Meaning

Ocasio (1997, p. 189) expanded on Upper Echelon theory (Hambrick & Mason, 1984) and defined organizational attention as "the noticing, encoding, interpreting, and focusing of time and effort by organizational decision-makers on both (a) issues...and (b) answers..."
According to Ocasio, organizational attention is the attention of the organizational decision-makers. The top management team has a significant influence on the selection of inputs to be processed by the organization. However, sometimes other members of the organization may impact even more strongly on organizational attention. Members can be very dominant in the process of selecting inputs from the internal and external environment if they possess some critical knowledge (e.g. technical knowledge, salient marketing skills, etc.) or if they have access to critical sources of information (e.g. personal or professional relations, community of practice, social networks, etc.). Thus organizational attention, like human attention, is inseparable from learning and knowledge creation.

Gavetti and Levinthal (2000) presented an iterative process of knowledge creation, illustrated in Figure 2. The influence of the outcome on the knowledge is mediated by reinforcement of routinised patterns of action.

![Figure 2: Knowledge Creation](image)

Source: Gavetti and Levinthal (2000).

Building on this model, organizational attention can be incorporated into the process of new knowledge creation. New knowledge is not derived automatically from the outcomes, but is filtered and directed by organizational attention. The process is depicted in Figure 3.
Organizational attention mediates knowledge and actions. Since not all available knowledge can be noticed and used by the firm for its actions, organizational attention affects the creation of new knowledge. In other words, creation of new knowledge depends on the knowledge that penetrates the organizational attention filter. Thus the process of knowledge creation is cyclic, or "spiral" in Nonaka's (1994) words. Individuals are the agents who create organizational knowledge, through continuing social and collaborative processes (Nonaka, 1994).

This leads to the following definition of organizational attention:

**Organizational attention** is a set of cyclic organizational routines and processes that determine which knowledge will enter into organizational memory, and which knowledge will be filtered or be considered less relevant to organizational memory.

This definition casts the organization as a distributed knowledge system. In other words, organizational knowledge is distributed within the organization, and available knowledge becomes effective if it gets the proper attention. Ocasio's definition concentrates on decision makers who, in his view, turn available knowledge into effective knowledge. This definition makes other agents part of the selection mechanism. In the everyday life of organizations, the actions of individuals or sub-units do not necessarily reflect top management decisions. Many actions are not directly guided by decision-makers. These actions are obviously part of the "pattern in a stream of actions or decisions" - the pattern that Mintzberg and McHugh called
strategy (1987, p. 161). Knowledge becomes effective even if it does not attract top management awareness. In these cases the attention of other agents influencing organizational actions is part of the mechanism that determines which knowledge will be part of organizational effective knowledge and therefore stored in organizational memory.

The organizational attention model depicted in Figure 4 shows the flow of knowledge, mediated by organizational attention, within an organization. An organization has access to various sources of knowledge and to different kinds of knowledge, but due to its limited attention capacity, it cannot deal with it all. Theoretically the organization possesses all this knowledge, but practically it can exploit only a portion of it. Which portion will be exploited is determined by organizational attention. The exploited knowledge will be transferred and become part of the firm's knowledge repository that can contribute to its competitive advantage.

Thus organizational attention can be considered as a gateway for new knowledge from internal sources (individuals or teams in the organization) as well as from external sources (customers, competitors, etc.). Organizational attention is affected by the current organization's knowledge and the position of individuals and units within the organization. This is why the model incorporates a cyclic process of knowledge transfer, where its control mechanism is organizational attention. Organizations select different sources of knowledge according to their attention capacity, which is affected by the organizational decision structure. This selection depends on attentional capacity and existing knowledge. The selection of certain sources of knowledge is reflected in the organization's actions and therefore in its outcomes or behaviour. This process is cyclic because the organization's new knowledge becomes part of the existing knowledge which affects upcoming selection and so forth.

Knowledge accumulation includes both acquisition of new knowledge from outside the boundaries of the firm and the leverage of existing knowledge within the firm (Nonaka, 1994; Teigland, 2000). The ability to transfer knowledge between levels of analysis (e.g. from the individual level to the group level or from the firm level to the business unit level) is valuable, and indeed one of the major characteristics that make a firm unique (Hedlund, 1994).
DISCUSSION AND SUMMARY

Organizational attention is an underdeveloped construct, which could potentially make a valuable contribution to organization theory in that it can account for various phenomena in this field. Using the domain-interaction model (Cornelissen, 2005), this article analyzed and defined the metaphor of organizational attention. Basically, an organization is a group of people intentionally organized to accomplish an overall, common goal or set of goals. In particular, an organization is considered as a system that has various inputs, which are processed to produce certain outputs that together accomplish the overall goal set by the organization. In previous studies, organizational attention was defined as the mechanism that controls
knowledge processing by top management (Ocasio, 1997) which therefore affects strategic decision-making and consequently the firm's outcomes.

"The essence of metaphor is understanding and experiencing one kind of thing in terms of another" (Lakoff & Johnson, 1980, p. 5). The meaning of a term is given by the relations between the term and other related knowledge that is known (Kintsch & Bowles, 2002). By interacting related domains, a better understanding of complex concepts can result. Here, by implementing the domain interaction model, the organizational attention metaphor takes on new meaning. It reflects the idea that knowledge acquired by individuals or sub-units that are not necessarily part of the decision-making group can still become part of organizational memory (Nonaka, 1994). Walsh and Ungson (1991) distinguished between decision information and organizational memory. Decision information is defined as cues perceived by individuals as reducing ambiguity (March & Olsen, 1976). Organizational memory refers to stored information about a stimulus and response that can be retrieved when required for decisions (Walsh & Ungson, 1991). In the model presented here organizational attention is the mechanism located between information and memory. This mechanism determines what information will be stored in memory. As Daniel Goleman put it: "memory is attention in the past tense" (cited in Gilovich, 1991, p. 37). Because organizational memory is distributed in the organization (Argote, McEvily & Reagans, 2003; Simon, 1947; Boland, Tenkaski & Te'eni, 1994; Hutchins, 1995; Tsoukas, 1996) the effect of organizational attention must be broader than what is processed by top management alone. Organizational attention is a gateway that enables only part of available knowledge to be stored in organizational memory.

Viewing organizational attention as the attention of decision-makers is an approximation because it neglects other agents who take part in transferring available inputs into organizational knowledge used by the organization and reflected in its actions.

Building on insights from analyzing the organizational attention metaphor, further theorizing is facilitated. The next step should be finding ways to operationalize organizational attention to empirically study this construct. Cognitive mapping (Huff, 1990; Weick, 1990) and social network analysis (Pappas & Wooldridge, 2002; Tichy,
Tushman & Fombrun, 1979) might be useful for this purpose. Social network analysis is the mapping and measuring of relationships and flows between people, groups, organizations, computers or other information/knowledge processing entities. The nodes in the network are the people and groups while the links show relationships or flows between the nodes. Social network analysis provides both a visual and a mathematical analysis of human relationships.

For Moreno and Moreno (1976), social configurations have definite and discernible structures, and the mapping of these structures into a sociogram allows the researcher to visualize the channels through which, for example, information could flow from one person to another and through which one individual could influence another. Moreno and Moreno argued that the construction of sociograms can enable researchers to identify leaders and isolated individuals, uncover asymmetry and reciprocity, and map chains of connection. One of their principal sociometric concepts is that of the sociometric “star”, the recipient of numerous and frequent choices from others and who, therefore, holds a position of great popularity and leadership. For Moreno (1972), the star concept highlights an easily visualized picture of the relations among group members. The sociometric star can be seen as a hub in the network which receives substantial attention and thus influences the outcomes of the organization. This person is not necessarily part of the decision-making group but has knowledge that can significantly influence the firm’s actions and outcomes.

Further development is necessary to use these methods for an operationalization of organizational attention. However it appears to be a promising direction for capturing the total attentional pattern of the organization. Depicting organizational attention in this way can also capture differences between organizations, and can shed light on other organizational issues.

To conclude, this paper is an example of the ways in which Cornelissen's framework can be used for theorizing in organization studies. The combination of concepts used in both source and target domains enables the emergence of a new meaning for the target concept. Here it led to a new definition that proposes a fresh look at the mechanism of organizational attention. The building blocks of the social sciences are words, concepts and terms. Hence, it is crucial to rigorously define the elements which are later used for theorizing. By
going beyond the comparative mapping function between source and target, and blending the two semantic domains, a creative definition can emerge. In the case of organizational attention, which remains understudied, and the current lack of empirical research, the importance of the systematic conceptualization is clear.

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REFERENCES


Organizational Attention: A Metaphor for a Core Cognitive Process


