

Ambidexterity and organizational learning: revisiting and reconnecting the literatures

Reconnecting
the literatures

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Abstract

Purpose – The purpose of the study is to investigate how the processes of exploration and exploitation have developed in parallel in the literature of organizational ambidexterity and organizational learning, since James March published his seminal paper in 1991. The goal of the paper is to provide a synthesis of exploration and exploitation based on the two areas of literature.

Design/methodology/approach – The study is conceptual and no empirical data have been used.

Findings – The study advances current understanding of exploration and exploitation by building a new model for organizational ambidexterity that takes into account multiple levels of learning, perspectives from absorptive capacity and inter-organizational learning.

Originality/value – The study's novelty lies in the creation and discussion of a synthesis of exploration and exploitation stemming from organizational ambidexterity and organizational learning.

Keywords Absorptive capacity, Ambidexterity

Paper type Conceptual paper

1. Introduction

There is a general consensus in the growing literature on organizational ambidexterity regarding the performance-improving aspects of having an ambidextrous organization, both in the short- and long-term perspective (Lubatkin *et al.*, 2006; Raisch *et al.*, 2009; Junni *et al.*, 2013). Organizational ambidexterity is a process consisting of two components, namely, exploration and exploitation (Gupta *et al.*, 2006; Simsek, 2009; Andriopoulos and Lewis, 2009) and the main argument for achieving improved performance is to balance the activities of exploration and exploitation (Brix, 2019). However, sometimes this notion of balance is misunderstood. The claim that maintaining balance is important, does not necessarily imply that an equal number of exploration and exploitation activities have to be carried out. Instead, it implies that the organization and

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its members must excel equally at the work tasks associated with both of these processes when they are carried out (Atuahene-Gima, 2005). There are, however, differences of opinion regarding how the ambidexterity dilemma can be solved (Gibson and Birkinshaw, 2004; O'Reilly and Tushman, 2013; Wei *et al.*, 2014; Brix, 2019). This is not necessarily a problem because finding an appropriate organizational response to the “ambidexterity dilemma” is a highly context-dependent task that can be understood as a complex phenomenon (Simsek, 2009; Krogstrup, 2016). Thus, there is no ambidexterity recipe that can be implemented in all organizations and that can promise to deliver successful outcomes. Consequently, local translations and adaptations of existing ambidexterity recipes have to be made (Gupta *et al.*, 2006; Krogstrup and Brix, 2019). As organizational ambidexterity is highly context dependent (Simsek, 2009; O'Reilly and Tushman, 2013), it is interesting to investigate what happens when the advances in the ambidexterity literature are (re)connected to the organizational learning literature. This is interesting for at least two reasons: first, organizational learning theory is mainly concerned with the local understanding of knowledge creation, retention and transfer in established organizations (Argote, 2012) and these processes are more often than not, either implicitly or explicitly, built around the processes of exploration and exploitation (March, 1991; Lubatkin *et al.*, 2006; Morland *et al.*, 2019); and second, these two streams of literature have coexisted since March's seminal work in 1991 (March, 1991), but they have evolved in parallel without much interaction (Wei *et al.*, 2014; Brix, 2019).

The purpose of this study is to synthesize suggestions on how the processes of exploration and exploitation create a balance for sustained performance and firm survival and to relate these processes to theories of organizational learning, including intra-organizational learning, absorptive capacity and inter-organizational learning. The goal of the study is to suggest how the two areas of literature can be cross-fertilized by proposing an integrative model.

The paper proceeds as follows: Section 2 presents the following, first, the theoretical background introduces examples of how organizational ambidexterity literature suggests that existing organizations can maintain balance between exploration and exploitation; second, a brief presentation of how organizational learning theory has advanced our understanding of the processes of exploration and exploitation since March's (1991) publication is given; and third, a synthesis is created based on the theoretical background from the two streams of literature. In Section 3, a discussion presents new insights stemming from the synthesis, and finally, conclusions are made in Section 4.

2. Theoretical background

In 1991, March published a seminal paper on exploration and exploitation in organizational learning. In this paper, March (1991, p. 71) argues that “maintaining an appropriate balance between exploration and exploitation is a primary factor in system survival and prosperity”. Although March's argument was based on organizational learning literature, many other theoretical fields, such as “strategic management” (Jansen *et al.*, 2008) and “technology and innovation management” (McCarthy and Gordon, 2011), have adopted his theory and refer to it as organizational ambidexterity and/or the “ambidexterity dilemma” (Gupta *et al.*, 2006; Simsek, 2009). The balancing act or the dilemma, of ambidexterity is well-established by the following logic: “[...] the interplay between the two [exploration and exploitation] occurs in form of a zero-sum game where exploration and exploitation compete for scarce resources, attention, and organizational routines” (Gupta *et al.*, 2006, p. 695) This argument further unfolds with the following explanation:

- if organizations overemphasize exploration, they risk using scarce resources and getting unsatisfactory payback, thus depressing short-term benefits; and
- if organizations overemphasize exploitation, they reduce learning new skills and might become captive to outdated competencies, technologies, etc., that might depress long-term performance (March, 1991; Hoang and Rothaermel, 2010).

The following section starts by presenting different perspectives on how organizational ambidexterity can be achieved by means of different approaches to balance exploration and exploitation.

2.1 Organizational ambidexterity

Organizational ambidexterity is a construct that refers to firms that are able to both explore new opportunities and exploit existing knowledge (Simsek *et al.*, 2009). An important part of this argument is, as mentioned earlier, that it is not only the number of activities but also the capacity of the organization and its employees to deliver skillfully on both processes that are imperative (Atuahene-Gima, 2005; Brix, 2019). Therefore, a clearer and appropriate expression of how organizational ambidexterity can be defined are offered by Lubatkin *et al.* (2006). They define organizational ambidexterity as: “(..) firms [that] are capable of exploiting existing competencies, as well as exploring new opportunities with equal dexterity” (Lubatkin *et al.*, 2006, p. 647). Interestingly, there are many suggestions for how organizations can increase their performance by solving the ambidexterity puzzle (O'Reilly and Tushman, 2008; Simsek *et al.*, 2009; Pellegrinelli *et al.*, 2015; Brix, 2019).

2.1.1 Differentiation and integration views and typologies of organizational ambidexterity. As organizational ambidexterity is viewed as a highly context-dependent and complex phenomenon (Uotila *et al.*, 2009; Simsek, 2009), it makes sense for an organization or a unit to follow O'Reilly and Tushman's (2008) recommendation and ask the question “when should ambidexterity be considered?” (O'Reilly and Tushman, 2008, p. 195). If the organization or unit is in a context that is characterized as being dynamic and/or undergoing many changes, then the argument is that seeking to maintain a balance to find organizational ambidexterity is an appropriate choice (O'Reilly and Tushman, 2008; Uotila *et al.*, 2009).

In the ambidexterity literature, there are two different views of the processes of exploration and exploitation: the differentiation view and the integration view. The *differentiation view* argues that exploration and exploitation compete for the same resources and that these processes are, therefore, incompatible (Smith and Tushman, 2005; O'Reilly and Tushman, 2013). On the other hand, Gibson and Birkinshaw (2004) promote the *integration view* and argue along with others that there are complementary benefits between the two approaches to learning (Caniëls *et al.*, 2017; Brix, 2019). The conflict between these two views arises because the differentiation view argues that exploration and exploitation have to occur across units (or organizations) and the integration view argues that the processes can coexist within the same unit. This conflict could be solved by creating a *structural dimension* of ambidexterity that asks the question: do exploration and exploitation coexist or are they divided? Another important aspect of the literature explores how transitions between exploration and exploitation occur (Brix, 2019). Here, the *temporal dimension* of ambidexterity is relevant: “are the activities performed in sequences of either exploration or exploitation?” (Simsek *et al.*, 2009) or “are the processes always available so the managers and employees can make their own decisions for when to switch between these activities?” (Gibson and Birkinshaw, 2004; Wang and Rafiq, 2014).

Different typologies have been developed based on the temporal and structural dimensions (Gibson and Birkinshaw, 2004; O'Reilly and Tushman, 2013). Simsek *et al.* (2009) present a typology of organizational ambidexterity that identifies four categories, namely, harmonic, cyclical, partitional and reciprocal ambidexterity (Figure 1). *Harmonic ambidexterity* is based on Gibson and Birkinshaw's (2004) contextual ambidexterity, which characterizes an organization or a unit where there are "[...] processes or systems that enable and encourage individuals to make their own judgments about how to divide their time between conflicting demands" (Gibson and Birkinshaw, 2004, p. 210). *Cyclical ambidexterity* is based on the literature on "punctuated equilibrium," which manifests by "sequentially allocating resources and attention to exploration and exploitation [...] in which organizations alternate between long periods of exploitation and short bursts of exploration" (Simsek *et al.*, 2009, p. 882). These two views are characterized as being part of the integration view of ambidexterity because they coexist in the same unit (Gibson and Birkinshaw, 2004). *Partitional ambidexterity* relates to the structural view because in this category the activities related to exploration are performed in one subunit; the activities related to exploitation are performed by another subunit (O'Reilly and Tushman, 2013). The key issue is to transfer knowledge from one unit to another (Simsek *et al.*, 2009; Pellegrinelli *et al.*, 2015). Finally, *reciprocal ambidexterity* also relates to the structural view of ambidexterity. The main difference between reciprocal ambidexterity and partitional ambidexterity is that reciprocal ambidexterity is characterized by processes of transferring knowledge back and forth between two separate units.

Although the Simsek *et al.* (2009) typology is one of the most advanced in explaining how processes of exploration and exploitation can be managed to create organizational ambidexterity, it still has some limitations. It only partially captures the multiple levels of analysis that are relevant in organizational ambidexterity and the role of individuals is especially underdeveloped (Caniëls *et al.*, 2017; Brix, 2019). Finally, the typology has a strong intrafirm bias, and few comments are made regarding inter-organizational collaborations (Simsek *et al.*, 2009). An explicit inter-organizational perspective to organizational ambidexterity is provided by Lavie and Rosenkopf (2006), who demonstrate how exploration and exploitation can be balanced across organizational domains over time.

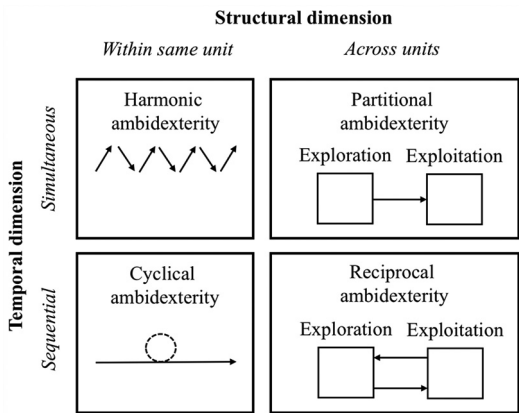


Figure 1.
A typology of
organizational
ambidexterity

Source: Author's adapted version of Simsek *et al.* (2009, p.868)

Lavie and Rosenkopf (2006) argue that three inter-organizational domains exist in which exploration and exploitation can take place are, namely, the function, structure and attribute domain. In the *function domain* organizations explore new opportunities, for example, in collaborative research and development (R&D) projects and/or they exploit opportunities by, for example, sourcing existing technology from other organizations. In the *structure domain* exploitation refers to collaboration with know or existing partners and exploration refers to collaboration with new partners with no prior ties to the organization. Finally, the *attribute domain* exemplifies that exploitation concerns collaboration with organizations that, for example, have similar technology (the attributes are comparable) and exploration refers to collaborating with partners with different attributes than the parent organization (Lavie and Rosenkopf, 2006). While the identification of these inter-organizational domains are highly relevant, they would according to Lavie and Rosenkopf (2006) benefit from an integration with organizational and inter-organizational learning theory.

2.2 Exploration and exploitation in organizational learning theory

2.2.1 Intra-organizational learning. Organizational learning theory has from the very beginning focused on learning processes occurring at both the individual and organizational levels (Cangelosi and Dill, 1965), and some would argue that the notion of exploration and exploitation was already discussed, though implicitly, even at the time when Argyris and Schön (1978) presented their theory of *single loop* and *double loop learning*, the notion of exploratory and exploitative learning processes became more explicit (Fiol and Lyles, 1985; Huber, 1991). The organizational learning literature became highly engaged with March's (1991) seminal publication that defined exploration and exploitation in organizational learning, and since then these processes have been investigated at multiple levels of analysis within organizations (Kim, 1993). For example, Argote (1999) proposes that organizational learning occurs at a group and/or organizational level in which knowledge creation, retention and transfer represent the underlying processes of how organizational members become more knowledgeable as they investigate how work can be completed more efficiently. Interestingly, Argote (1999) also articulates the differences between and the importance of, accepting differences between group learning and organizational learning and the tension between heterogeneity and standardization within and between units (Argote, 1999). At the turn of the new millennium, a new stream of organizational learning theory emerged that explicitly sought to understand the processes of exploration and exploitation: organizational learning as a multilevel phenomenon (Crossan *et al.*, 1999). According to Crossan *et al.* (1999), four micro-processes occur at different levels and across different levels in organizations during the processes of exploration and exploitation and in the transitions between these. The four micro-processes are, namely, *intuiting*, *interpreting*, *integrating* and *institutionalizing* (the 4i framework). Intuiting and interpreting occur at the individual level. Interpreting and integrating occur at the group/team level and the integrating and institutionalizing occur at the organizational level. According to Crossan *et al.* (1999), these micro-processes are connected by feedforward and feedback interactions that occur recursively. Multiple scholars have adopted and further extended the 4i framework: it has been tested in empirical studies (Crossan and Berdrow, 2003) and it has been extended to entrepreneurial processes (Dutta and Crossan, 2005). More recently, Brix (2017) proposes that the 4i framework can be further developed by applying knowledge creation theory and a sensemaking and sensegiving perspective to explain transitions between exploration and exploitation more thoroughly. In this journal, Morland *et al.* (2019) advance the multilevel framework for learning by including perspectives on trust, time and

communication, and they highlight the importance of the context and conditions for learning to occur at multiple levels.

What can be extracted from the brief summary of exploration and exploitation in organizational learning is that there is a strong focus on the different processes of learning that occur at different levels within organizations – and that the transition between these processes from the individual level toward the organizational level is especially well-developed (Crossan *et al.*, 1999; Brix, 2017; Morland *et al.*, 2019). What is noticeable is the focus on communication between individuals as sensemaking and sensegiving in a group/team setting; they seek to *interpret* their individual *intuition* of a new opportunity and *integrate* the insights from this new opportunity in such way that it would make sense to *institutionalize* it in the organization as a better or a new way of working. Finally, another important nuance in the processes of exploration and exploitation is that there may be different needs and requirements for learning in different organizational units. The division between tasks that are *routinized and standardized* or *heterogeneous* (Argote, 1999) makes explicit whether the work tasks that are to be learned or improved are addressing simple or complex problems (Krogstrup, 2016).

2.2.2 Absorptive capacity. The theory of absorptive capacity was made popular by Cohen and Levinthal (1990). They define absorptive capacity as: “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (Cohen and Levinthal, 1990, p. 128). Absorptive capacity is an umbrella term that is divided into “individual absorptive capacity” and “organizational absorptive capacity.” Cohen and Levinthal’s (1990) argument is that: “the organization’s absorptive capacity is not resident in any single individual but depends on the link across a mosaic of individual capabilities” (Cohen and Levinthal, 1990, p. 133). It is the “cumulativeness feature” proxied by, for example, prior knowledge and R&D investments, which represents the learning potential of the firm and its individuals. In short, people absorb external knowledge more easily when they already have a certain grasp of the new knowledge. Extending this view, van Wijk *et al.* (2011) demonstrate that the ability of a firm to recognize the value of external information and to exploit it is not only dependent on prior knowledge of the firm and its employees but also on organizational work processes, capabilities of employees to see new connections and incentives that are in place to reduce inertia in knowledge flows. The basic argument is that for external knowledge to be absorbed, it “should reach the right individuals at the right time” (Volberda *et al.*, 2010, p. 942). Zahra and George’s (2002) reconceptualization of absorptive capacity divides absorptive capacity into *potential* and *realized absorptive capacity*. They state that “potential capacity comprises knowledge acquisition and assimilation capabilities and realized capacity centers on knowledge transformation and exploitation” (Zahra and George, 2002, p. 185). The argument is that the two capacities can be analyzed separately, but that they have complementary roles. Jansen *et al.* (2008) criticize Zahra and George’s (2002) two-factor model for being oversimplified and argue that absorptive capacity is comprised of four processes, namely, *acquisition*, *assimilation*, *transformation* and *exploitation*. Inspired by Zahra and George’s (2002) division, Sidhu *et al.* (2007) stress that the original definition of absorptive capacity is biased toward technological knowledge. They propose that external knowledge can be divided into three categories, as follows:

- (1) new technologies (supply-side knowledge absorption);
- (2) new markets (demand-side knowledge absorption); and
- (3) new regions (spatial knowledge absorption) (Sidhu *et al.*, 2007).

Studies on absorptive capacity, therefore, often focus on “knowledge content,” such as new patents, products or incremental product innovation, and not on factors such as internal processes (Lane *et al.*, 2006; Lichtenthaler, 2009). This product/market-orientation is still the primary focus of absorptive capacity and is also present in the new definition proposed by Lane *et al.* (2006) in their critical review:

Absorptive capacity is a firm’s ability to utilize externally held knowledge through three sequential processes: (1) recognizing and understanding potentially valuable new knowledge outside the firm through exploratory learning, (2) assimilating valuable new knowledge through transformative learning, and (3) using the assimilated knowledge to create new knowledge and commercial outputs through exploitative learning (Lane *et al.*, 2006, p. 856).

This brief summary of absorptive capacity stresses the importance of exploring for knowledge outside the organization to create value. The role of the individual is important, because prior knowledge is required to identify and recognize the potential value of new, outside knowledge and prior knowledge is imperative for translating this knowledge so that value creation can be realized (Cohen and Levinthal, 1990; Zahra and George, 2002). The role of the organization is to enable and support the absorption of new knowledge (Jansen *et al.*, 2008). The types of knowledge can be not only of explicit but also of implicit nature (Sidhu *et al.*, 2007). In 1998, Lane and Lubatkin introduced the concept of *relative absorptive capacity* into the study of inter-organizational learning, and they establish that learning is dependent on the collaborating firms’ overlap in knowledge, and that firms with knowledge similarities report more learning in their collaborations than firms without these similarities (Lane and Lubatkin, 1998). This perspective and the developments prior to this are presented below.

2.2.3 Inter-organizational learning. The perspective on inter-organizational learning that has gained the most attention is Lane and Lubatkin’s (1998) conceptualization mentioned above. They explain how absorptive capacity can be used to create a *learning dyad* between organizations, as proxied by a relationship between a “student firm” and a “teacher firm.” Lane and Lubatkin (1998) explain that three learning approaches exist in the inter-organizational learning process, namely, passive learning, active learning and interactive learning. The first two learning approaches represent the absorption of knowledge that is explicit in nature, such as technical process specifications, journals (passive learning) and consultancy (active learning). When student and teacher firms collaborate to integrate new knowledge, and thus, develop the student firms’ capabilities in the context, in which they are going to be performed, the process of interactive learning is being processed. In parallel with the development of Lane and Lubatkin’s (1998) construct, other scholars have focused on the types of collaboration that enable inter-organizational learning (Larsson *et al.*, 1998). In the work of Larsson *et al.*, inter-organizational learning is “achieved by transferring existing knowledge from one organization, as well as by creating completely new knowledge through interaction among organizations” (Larsson *et al.*, 1998, p. 289). In the process of knowledge transfer and knowledge creation, Larsson *et al.* (1998) stress the importance of the collaborating organizations’ choices and their abilities to be both receptive and transparent in the collaboration. *Receptive* means the degree to which the organization is prepared to take in new knowledge from another organization. *Transparent* means the degree to which the organization is prepared to disclose knowledge to another organization. The well-functioning efforts of collaborating organizations are, therefore, based on the integrative and distributive dimensions that are negotiated and acted upon between them (Beeby and Booth, 2000; Peronard and Brix, 2018). According to Holmqvist (2003), it is important that organizations engaging in inter-organizational learning are aware that the value of inter-organizational learning is directly coupled to intra-organizational learning

(Schulz and Geithner, 2010; Peronard and Brix, 2019). Holmqvist (2003) argues that the link between intra- and inter-organizational learning is a two-level-game made by the process of intertwining. *Intertwining* takes place when existing organizational knowledge is coupled with new knowledge created in collaboration with other organizations, and it is, thereafter, translated into the intra-organizational routines and work patterns. Holmqvist (2004), therefore, proposes that the link between intra- and inter-organizational learning is operationalized by activities related to exploration and exploitation occurring both on the inter and intra-organizational levels. Jones and MacPherson (2006) later introduce a new inter-organizational learning model that integrates the studies of Holmqvist (2003) and Crossan *et al.* (1999). Jones and MacPherson (2006) introduce Holmqvist's (2003) concept of "intertwining" to extend the 4i framework (Crossan *et al.*, 1999), creating a 5i framework: *Intuiting, Interpreting, Integration, Institutionalizing* and *Intertwining*.

This brief summary of exploration and exploitation in inter-organizational learning reveals a more dynamic picture of exploration and exploitation processes than found in absorptive capacity. The argument is that inter-organizational learning theory articulates the need for understanding how one type of knowledge stemming from one organization's exploitation can act as another organization's source of exploration, and vice versa (Holmqvist, 2004). Moreover, the literature demonstrates different approaches to sharing or transferring knowledge, via either passive, active and/or interactive learning processes between two or more organizations and their members (Lane and Lubatkin, 1998). Finally, the literature makes explicit the importance of new knowledge that is created in inter-organizational settings, that does not stem from either of the parties involved, but from their processes of action and interaction (Larsson *et al.*, 1998; Peronard and Brix, 2019).

2.3 Synthesis of organizational ambidexterity and organizational learning

Having revisited the organizational ambidexterity and organizational learning literatures, this section proceeds to synthesize how the two fields can fertilize one another. Table I summarizes the most important similarities and differences concerning exploration and exploitation in the two literatures.

The insights stemming from the synthesis in Table I are important in at least two ways. First, the synthesis demonstrates that the premise for balancing exploration and exploitation has not changed in either the organizational ambidexterity or organizational learning literature since March's (1991) original work. In this regard, the two streams of literature remain similar as shown in the "similarities" section of Table I. Second, the two streams of literature have developed into two parallel areas of research that focus on different views as to how to create and maintain this important balance. As shown in the "differences" section of Table I, it becomes evident that the organizational learning literature has a more advanced view of exploration and exploitation than the ambidexterity literature, especially in regard to how and where processes of exploration and exploitation take place, how the transitions between these processes can take place and by whom. Recently, a line of research in the organizational ambidexterity literature has started to take some of these perspectives into consideration; specifically, the sub-stream concerning harmonic/contextual ambidexterity (Gibson and Birkinshaw, 2004; Simsek *et al.*, 2009; Brix, 2019). Another important perspective related to the organizational ambidexterity literature is the strong intrafirm bias (O'Reilly and Tushman, 2013; Bresciani *et al.*, 2018). Studies of exploration and exploitation processes related to absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002) and inter-organizational learning (Lane and Lubatkin, 1998; Peronard and Brix, 2019) represent important sources of inspiration for the ambidexterity literature because these theoretical perspectives can compensate for this bias (Lavie and

	Organizational ambidexterity	Organizational learning
Similarities	Balancing the activities and capacities of exploration and exploitation is a fundamental premise in both areas of literature It is important that these activities are appropriate in relation to the organization's external environment It is important that the organizational context for exploration and exploitation supports and incentivizes managers and employees in performing their work tasks related to exploration and/or exploitation	
Differences	Organizational ambidexterity focuses primarily on the <i>structural</i> and <i>temporal dimensions</i> of managing exploration and exploitation, as a <i>prescriptive approach</i> to solve the dilemma of how equal dexterity can be found <i>Harmonic/contextual ambidexterity</i> is the most developed stream of literature that studies how exploration and exploitation can be balanced on both the individual and organizational levels of analysis, besides the structural and temporal dimensions noted above Organizational ambidexterity has a strong intrafirm bias; only a few studies treating the inter-organizational aspects of managing exploration and exploitation exist in the literature. Three domains are identified that cut across organizational boundaries: the function, structure and the attribute domains	Organizational learning focuses on the <i>processes of learning</i> pertaining to <i>multiple units of analysis</i> : individual, group/team and organization. Moreover, the literature accepts the premise that <i>different modes of learning can occur on these multiple levels simultaneously</i> (e.g., the 4i framework in organizational learning and the 5i framework in inter-organizational learning). <i>Different types of knowledge require different modes of learning</i> . A more dynamic view regarding exploration and exploitation is thus noticeable in this literature compared to organizational ambidexterity: 1) What can be seen as exploitation knowledge for one organization can be interpreted as exploration knowledge for another organization 2) Knowledge that does not exist beforehand can be created between different organizations in a mutual exploration phase 3) The importance of prior knowledge is articulated as a key premise to enable knowledge absorption from the outside 4) Processing exploration and exploitation as passive, active or interactive modes of learning within and between organizations can enable the understanding of the complexity of the knowledge that is to be absorbed, transferred or created

Source: Author

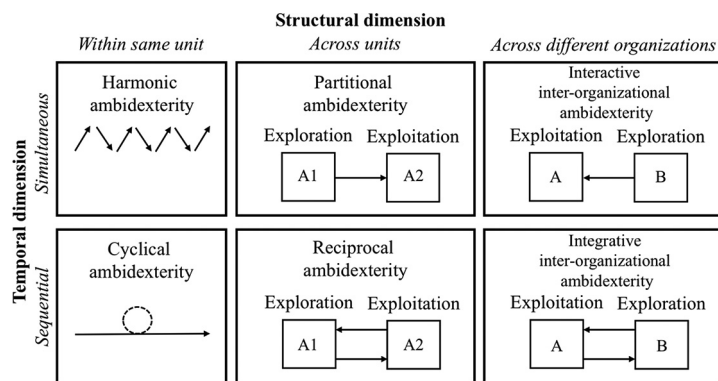
Table I.
A Summary of
similarities and
differences

Rosenkopf, 2006). Figure 2 is developed to demonstrate an example of how the two areas of literature can benefit from being cross-fertilized.

3. Discussion and implications

Inspired by Simsek *et al.*'s (2009) typology of organizational ambidexterity, Figure 2 illustrates the synthesis of exploration and exploitation from the two literatures. The theories of inter-organizational learning (Lane and Lubatkin, 1998; Larsson *et al.*, 1998; Jones and MacPherson, 2006) and absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002; Volberda *et al.*, 2010) play a vital role in this synthesis. The main argument is that organizational ambidexterity has a strong intra-organizational bias in the balancing act between exploration and exploitation (Gibson and Birkinshaw, 2004; Simsek *et al.*, 2009; O'Reilly and Tushman, 2013), with a few exceptions, such as Lavie and Rosenkopf (2006) and Bresciani *et al.* (2018).

Figure 2.
Synthesis of
exploration and
exploitation in the
literature



Source: The author's development, as inspired by Simsek *et al.* (2009)

3.1 An inter-organizational view on organizational ambidexterity

The study's main contribution is the addition of two new boxes to Simsek *et al.*'s (2009) typology. These are: *interactive inter-organizational ambidexterity* and *integrative inter-organizational ambidexterity*.

The first box, *interactive inter-organizational ambidexterity*, is based on absorptive capacity (Cohen and Levinthal, 1990) and on *active* and *interactive learning* processes (Lane and Lubatkin, 1998). The premise is that an employee from Organization A identifies new knowledge in Organization B that has potential value to Organization A, for example, a new technological process (Zahra and George, 2002). If available for sale or licensing, this "knowledge" can be absorbed by the employee from Organization A, if she/he has prior knowledge of understanding and translating this knowledge. If so, the potential value of the new knowledge can be *integrated and institutionalized* in Organization A and, hence, *realized* (Crossan *et al.*, 1999; Zahra and George, 2002). In short, Organization B's exploration knowledge becomes Organization A's exploitation knowledge via individual and organizational absorptive capacity and via the active and interactive learning processes between the organizations. In the perspective of Lavie and Rosenkopf (2006), this could exemplify an exploration process in the attribute domain and/or an exploitation process in the function domain.

The second box, *integrative inter-organizational ambidexterity*, is based primarily on the literature on inter-organizational learning (Larsson *et al.*, 1998; Holmqvist, 2004; Peronard and Brix, 2019), with a strong emphasis on integrative learning processes (Larsson *et al.*, 1998). In an integrative learning process, employees from Organization A meet and collaborate with employees from Organization B (and potentially more organizations). The integrative type of organizational ambidexterity emphasizes and supports collaborative exploration in inter-organizational settings. Collaborative exploration is a collective knowledge-creation process between at least two Organizations (A and B) and the collaborative exploration process is initiated to create new knowledge that did not exist before in either organization (Larsson *et al.*, 1998; Holmqvist, 2003). In the perspective of Lavie and Rosenkopf (2006), this example represents exploration in a functional domain with collective R&D efforts to co-create new knowledge. The main difference between the two new typologies presented in Figure 2 is that "interactive inter-organizational ambidexterity" is concerned with the transfer and absorption of existing knowledge from

one organization to another, whereas “integrative inter-organizational ambidexterity” emphasizes settings in which partnerships between organizations are made to create new knowledge in collaboration that can be exploited by individual organizational actors in agreement with one another. The inter-organizational learning and absorptive capacity literatures, hence, assist in explaining how the processes of exploration and exploitation can occur across organizations (Lavie and Rosenkopf, 2006).

3.2 Advancing the perspectives on intrafirm organizational ambidexterity

Another important advance can also be made by applying an organizational learning perspective to the “partitional, reciprocal, harmonic and cyclical” typologies (Simsek *et al.*, 2009). The multilevel perspective concerning the individual, group/team and organizational levels of analysis from organizational learning (Crossan *et al.*, 1999) allows for a more nuanced view of exploration and exploitation within established organizations. The problem is that the ambidexterity literature mainly focuses on two levels of analysis: the individual and the organizational. However, most work tasks and projects in organizations are implemented by groups or teams and not only individual employees within the organization (Crossan *et al.*, 1999; Brix, 2017). Especially important are the micro-processes of *intuiting*, *interpreting*, *integrating* and *institutionalizing* because these create the foundation for transitioning from exploration toward exploitation within an organization (Crossan *et al.*, 1999). In addition to this, Brix (2017) finds that this transition is influenced by multiple occurrences of “meaning negotiation” when knowledge flows across the individual, the group/team and the organizational levels of analysis. Finally, in this regard, Morland *et al.* (2019) stress the importance of clear communication in the processes of exploration and exploitation between employees. These scholars also echo the findings of Larsson *et al.* (1998), by articulating the need for understanding the roles that relationships and trust between the employees play in such a setting. In short, there is an important avenue for future research in understanding this multilevel perspective on exploration and exploitation processes in the context of organizational ambidexterity.

3.3 Limitations

This paper does not integrate and discuss the important influence of increasing dynamism in the macro environment. Technological and market disruptions may increasingly influence the necessary balancing between exploration and exploitation both within and between organizations (Junni *et al.*, 2013; Wei *et al.*, 2014; Peronard and Brix, 2018). In addition to this, recent political decisions at the national level may disrupt how international business can be created and/or continued, and such macro dynamics can also potentially influence this balancing act (Krogstrup and Brix, 2019). An examination of these macro-environmental factors and their influence on exploration and exploitation, both theoretically and empirically, is an imperative avenue for future research.

4. Conclusion

The synthesis of organizational ambidexterity and organizational learning shows that a valuable cross-fertilization can be made between the two literatures. This study has two important findings. First, an updated model for balancing exploration and exploitation within and between established organizations is created as part of the theoretical synthesis (Figure 2). To enable this work, advances from absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002; Volberda *et al.*, 2010) and inter-organizational learning (Lane and Lubatkin, 1998; Larsson *et al.*, 1998; Holmqvist, 2004; Jones and MacPherson, 2006) are used to compensate for the strong intrafirm bias found in relation to exploration and

exploitation in the organizational ambidexterity literature (Lavie and Rosenkopf, 2006). The study proposes two new inter-organizational perspectives for organizational ambidexterity: *interactive inter-organizational ambidexterity* and *integrative inter-organizational ambidexterity*. Second, multilevel models of organizational learning (Crossan *et al.*, 1999; Brix, 2017; Morland *et al.*, 2019) are used to criticize and discuss a broader understanding of the processes of exploration and exploitation in the existing typologies of organizational ambidexterity. The novelty in this regard lies in the introduction of the group/team level of analysis into the ambidexterity literature, which until now has only considered the individual and organizational levels (Simsek *et al.*, 2009; O'Reilly and Tushman, 2013). Hopefully, this study can be used as a resource for recombining these two important and complementary views on how to make established organizations continually relevant in the future.

References

- Andriopoulos, C. and Lewis, M.W. (2009), "Exploitation-exploration tensions and organizational ambidexterity: managing paradoxes of innovation", *Organization Science*, Vol. 20 No. 4, pp. 696-717.
- Argote, L. (1999), *Organizational Learning: Creating, Retaining, and Transferring Knowledge*, Kluwer, Netherlands.
- Argote, L. (2012), *Organizational Learning: Creating, Retaining and Transferring Knowledge*, Springer Science and Business Media, USA.
- Argyris, C. and Schön, D. (1978), *Organizational Learning: A Theory of Action Approach*, Addison Wesley Reading, MA.
- Atuahene-Gima, K. (2005), "Resolving the capability – rigidity paradox in new product innovation", *Journal of Marketing*, Vol. 69 No. 4, pp. 61-83.
- Beeby, M. and Booth, C. (2000), "Networks and inter-organizational learning: a critical review", *The Learning Organization*, Vol. 7 No. 2, pp. 75-88.
- Bresciani, S., Ferraris, A. and Del Giudice, M. (2018), "The management of organizational ambidexterity through alliances in a new context of analysis: Internet of things (IoT) smart city projects", *Technological Forecasting and Social Change*, Vol. 136, pp. 331-338.
- Brix, J. (2017), "Exploring knowledge creation processes as a source of organizational learning: a longitudinal case study of a public innovation project", *Scandinavian Journal of Management*, Vol. 33 No. 2, pp. 113-127.
- Brix, J. (2019), "Innovation capacity building: an approach to maintaining balance between exploration and exploitation in organizational", *Learning. The Learning Organization*, Vol. 26 No. 1, pp. 12-26.
- Cangelosi, V.E. and Dill, W.R. (1965), "Organizational learning: observations toward a theory", *Administrative Science Quarterly*, Vol. 10 No. 2, pp. 175-203.
- Caniëls, M.C., Neghina, C. and Schaetsaert, N. (2017), "Ambidexterity of employees: the role of empowerment and knowledge sharing", *Journal of Knowledge Management*, Vol. 21 No. 5, pp. 1098-1119.
- Cohen, W.M. and Levinthal, D.A. (1990), "Absorptive capacity: a new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35 No. 1, pp. 128-152.
- Crossan, M.M. and Berdrow, I. (2003), "Organizational learning and strategic renewal", *Strategic Management Journal*, Vol. 24 No. 11, pp. 1087-1105.
- Crossan, M.M., Lane, H.W. and White, R.E. (1999), "An organizational learning framework: from intuition to institution", *Academy of Management Review*, Vol. 24 No. 3, pp. 522-537.

- Dutta, D.K. and Crossan, M.M. (2005), "The nature of entrepreneurial opportunities: understanding the process using the 4I organizational learning framework", *Entrepreneurship Theory and Practice*, Vol. 29 No. 4, pp. 425-449.
- Fiol, C.M. and Lyles, M.A. (1985), "Organizational learning", *Academy of Management Review*, Vol. 10 No. 4, pp. 803-813.
- Gibson, C.B. and Birkinshaw, J. (2004), "The antecedents, consequences, and mediating role of organizational ambidexterity", *Academy of Management Journal*, Vol. 47 No. 2, pp. 209-226.
- Gupta, A.K., Smith, K.G. and Shalley, C.E. (2006), "The interplay between exploration and exploitation", *Academy of Management Journal*, Vol. 49 No. 4, pp. 693-706.
- Hoang, H.A. and Rothaermel, F.T. (2010), "Leveraging internal and external experience: exploration, exploitation, and R&D project performance", *Strategic Management Journal*, Vol. 31 No. 7, pp. 734-758.
- Holmqvist, M. (2003), "A dynamic model of intra-and interorganizational learning", *Organization Studies*, Vol. 24 No. 1, pp. 95-123.
- Holmqvist, M. (2004), "Experiential learning processes of exploitation and exploration within and between organizations: an empirical study of product development", *Organization Science*, Vol. 15 No. 1, pp. 70-81.
- Huber, G.P. (1991), "Organizational learning: the contributing processes and the literatures", *Organization Science*, Vol. 2 No. 1, pp. 88-115.
- Jansen, J.J., George, G., Van den Bosch, F.A. and Volberda, H.W. (2008), "Senior team attributes and organizational ambidexterity: the moderating role of transformational leadership", *Journal of Management Studies*, Vol. 45 No. 5, pp. 982-1007.
- Jones, O. and MacPherson, A. (2006), "Inter-organizational learning and strategic renewal in SMEs: extending the 4I framework", *Long Range Planning*, Vol. 39 No. 2, pp. 155-175.
- Junni, P., Sarala, R.M., Taras, V. and Tarba, S.Y. (2013), "Organizational ambidexterity and performance: a meta-analysis", *Academy of Management Perspectives*, Vol. 27 No. 4, pp. 299-312.
- Kim, D.H. (1993), "The link between individual and organizational learning", *Sloan Management Review*, Vol. 35 No. 1, pp. 37-50.
- Krogstrup, H.K. (2016), *Evalueringssmodeller*, 3rd ed., Hans Reitzel, Copenhagen.
- Krogstrup, H.K. and Brix, J. (2019), *Co-Produktion i Den Offentlige Sektor: Brugerinvolvering I KVAItetsudvikling*, Hans Reitzels Forlag, Copenhagen, ISBN: 9788741265384.
- Lane, P.J., Koka, B.R. and Pathak, S. (2006), "The reification of absorptive capacity: a critical review and rejuvenation of the construct", *Academy of Management Review*, Vol. 31 No. 4, pp. 833-863.
- Lane, P.J. and Lubatkin, M. (1998), "Relative absorptive capacity and interorganizational learning", *Strategic Management Journal*, Vol. 19 No. 5, pp. 461-477.
- Larsson, R., Bengtsson, L., Henriksson, K. and Sparks, J. (1998), "The interorganizational learning dilemma: collective knowledge development in strategic alliances", *Organization Science*, Vol. 9 No. 3, pp. 285-305.
- Lavie, D. and Rosenkopf, L. (2006), "Balancing exploration and exploitation in alliance formation", *Academy of Management Journal*, Vol. 49 No. 4, pp. 797-818.
- Lichtenthaler, U. (2009), "Absorptive capacity, environmental turbulence, and the complementarity of organizational learning processes", *Academy of Management Journal*, Vol. 52 No. 4, pp. 822-846.
- Lubatkin, M.H., Simsek, Z., Ling, Y. and Veiga, J.F. (2006), "Ambidexterity and performance in small-to medium-sized firms: the pivotal role of top management team behavioral integration", *Journal of Management*, Vol. 32 No. 5, pp. 646-672.
- McCarthy, I.P. and Gordon, B.R. (2011), "Achieving contextual ambidexterity in R&D organizations: a management control system approach", *R&D Management*, Vol. 41 No. 3, pp. 240-258.

- March, J.G. (1991), "Exploration and exploitation in organizational learning", *Organization Science*, Vol. 2 No. 1, pp. 71-87.
- Morland, K.V., Breslin, D. and Stevenson, F. (2019), "Development of a multi-level learning framework", *The Learning Organization*, Vol. 26 No. 1, pp. 78-96.
- O'Reilly, C.A. and Tushman, M.L. (2008), "Ambidexterity as a dynamic capability: resolving the innovator's dilemma", *Research in Organizational Behavior*, Vol. 28, pp. 185-206.
- O'Reilly, C.A. and Tushman, M.L. (2013), "The Organizational ambidexterity: past, present, and future", *Academy of Management Perspectives*, Vol. 27 No. 4, pp. 324-338.
- Pellegrinelli, S., Murray-Webster, R. and Turner, N. (2015), "Facilitating organizational ambidexterity through the complementary use of projects and programs", *International Journal of Project Management*, Vol. 33 No. 1, pp. 153-164.
- Peronard, J.P. and Brix, J. (2018), "Sensemaking in collaborative networks: creating and balancing activities in open business models", *International Journal of Entrepreneurship and Innovation Management*, Vol. 22 No. 6, pp. 545-561.
- Peronard, J.P. and Brix, J. (2019), "Organizing for inter-organizational learning in service networks", *The Learning Organization*, doi: <https://doi.org/10.1108/TLO-08-2018-0137>.
- Raisch, S., Birkinshaw, J., Probst, G. and Tushman, M.L. (2009), "Organizational ambidexterity: balancing exploitation and exploration for sustained performance", *Organization Science*, Vol. 20 No. 4, pp. 685-695.
- Schulz, K.P. and Geithner, S. (2010), "Between exchange and development: organizational learning in schools through inter-organizational networks", *The Learning Organization*, Vol. 17 No. 1, pp. 69-85.
- Sidhu, J.S., Commandeur, H.R. and Volberda, H.W. (2007), "The multifaceted nature of exploration and exploitation: value of supply, demand, and spatial search for innovation", *Organization Science*, Vol. 18 No. 1, pp. 20-38.
- Simsek, Z. (2009), "Organizational ambidexterity: towards a multilevel understanding", *Journal of Management Studies*, Vol. 46 No. 4, pp. 597-624.
- Simsek, Z., Heavey, C., Veiga, J.F. and Souder, D. (2009), "A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes", *Journal of Management Studies*, Vol. 46 No. 5, pp. 864-894.
- Smith, W.K. and Tushman, M.L. (2005), "Managing strategic contradictions: a top management model for managing innovation streams", *Organization Science*, Vol. 16 No. 5, pp. 522-536.
- Uotila, J., Maula, M., Keil, T. and Zahra, S.A. (2009), "Exploration, exploitation, and financial performance: analysis of S&P 500 corporations", *Strategic Management Journal*, Vol. 30 No. 2, pp. 221-231.
- Van Wijk, R.A.J.L., Van, D.B., F.A. and Volberda, H.W. (2011), "Organizing knowledge in social, alliance, and organizational networks", *Handbook of Organizational Learning and Knowledge Management*, 2nd ed., John Wiley and Sons, West Sussex, pp. 477-504.
- Volberda, H.W., Foss, N.J. and Lyles, M.A. (2010), "Perspective – absorbing the concept of absorptive capacity: how to realize its potential in the organization field", *Organization Science*, Vol. 21 No. 4, pp. 931-951.
- Wang, C.L. and Rafiq, M. (2014), "Ambidextrous organizational culture, contextual ambidexterity and new product innovation: a comparative study of UK and chinese high-tech firms", *British Journal of Management*, Vol. 25 No. 1, pp. 58-76.
- Wei, Z., Yi, Y. and Guo, H. (2014), "Organizational learning ambidexterity, strategic flexibility, and new product development", *Journal of Product Innovation Management*, Vol. 31 No. 4, pp. 832-847.
- Zahra, S.A. and George, G. (2002), "Absorptive capacity: a review, reconceptualization, and extension", *Academy of Management Review*, Vol. 27 No. 2, pp. 185-203.

Further reading

Cyert, R.M. and March, J.G. (1963), *A Behavioral Theory of the Firm*, Englewood Cliffs, NJ.

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