

An Integrated Literature Review of Organizational Ambidexterity: The Rise of Fusion Ambidexterity

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<p>For the past two decades, organizational ambidexterity has been a growing theme both in literature, as well as in practice. However, to this date, various research has not been able to clearly define the concept and severe fragmentation of the construct exists. Both research and practice are perplexed, as to what organizational ambidexterity is and what does it mean in practice.</p> <p>Using an integrative literature review, this thesis aimed to synthesize and integrate the existing literature and to identify the extent that the research has departed from the original line of thought: organizational ambidexterity is about managing tensions. Furthermore, the goal was to provide a comprehensive and multidimensional modern framework of organizational ambidexterity, by integrating the various research.</p> <p>Findings revealed that the fragmentation in literature was in part due to the definition of ambidexterity and its inapplicability to organizations as such, and on another, due to research providing mechanistic evaluations of the concept without proceeding into the essence of it. Moreover, this study introduced a concept of bimanual interference, which is a more suitable term in explaining the role of tensions in organizational ambidexterity. Using the rationale of bimanual interference and integrating the existing literature, a new form of ambidexterity was depicted: Fusion Ambidexterity.</p> <p>In conclusion, it is proposed that in today's organizational life, fusion ambidexterity is demanded. Central to this meta-level capability is exploitation and exploration with external parties, organizational learning and intelligence, and finally, dynamic capabilities. Furthermore, fusion ambidexterity permeates the entire organization and reflects an interplay between organizations' strategic approach and individual task performance. Finally, it is proposed that fusion ambidexterity enables firms' long-term triumph and existence.</p>	
Keywords Organizational ambidexterity, Organizational learning, Dynamic capabilities, Strategy	

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1 Introduction

Organizational ambidexterity has been a flourishing theme over the last two decades, especially due to its positive relationship with firm performance (Junni, Sarala, Taras & Tarba 2013, 308). Simultaneously, the amplified uncertainty and multi-directional dynamism of the environment have enlarged the demands organizations face. Thus, to ensure long-term survival amid these challenges, organizations need to be ambidextrous (Tushman & O'Reilly 1996, 8). Organizational ambidexterity is described as an organizations' capability to simultaneously pursue balanced and high levels of exploitation and exploration (Cao, Gedajlovic, & Zhang 2009, 790). To develop this capability is seemingly hard (Birkinshaw & Gupta 2013, 293) and only a few firms have been successful in accomplishing concurrent and balanced high levels in both and thus, be truly ambidextrous (Gibson & Birkinshaw 2004, 219).

Furthermore, as exploitation and exploration are opposing activities, pursuing organizational ambidexterity raises seemingly strong internal tensions (March 1991, 71; Tushman & O'Reilly 1996, 8). However, despite the broad acknowledgment of strong tensions existing in organizational ambidexterity, the growing literature has departed from the original concept presented by Tushman and O'Reilly (1996), and especially the tensions arising from the joint pursuit of exploitation and exploration appear to have been forgotten (O'Reilly & Tushman 2013, 331). Thus, it appears that the latter studies have evolved and focused on explaining various mechanisms for simultaneous exploitation-exploration activities, rather than the concept of organizational ambidexterity itself.

In addition, there is a general agreement among scholars that different contexts and explanations of the concept have led to incoherence in the theoretical foundation, leading to inconsistent empirical findings. Hence, considerable ambiguity and dispute on the theoretical nature have remained. Thus, the presentation of organizational ambidexterity has widely spread to the extent that various organizational phenomena and outcomes are labeled under ambidexterity, raising concerns about the purity of the theory. (Birkinshaw & Gupta 2013, 292; Lavie, Stettner & Tushman 2010, 113; Nosella, Cantarello & Filippini 2012, 450; O'Reilly & Tushman 2013, 331; Raisch & Birkinshaw 2008, 376; Simsek 2009, 599; Simsek, Heavey, Veiga & Souder 2009, 864.)

While being an ambidextrous person means being able to perform equally well with both hands (Fagard, Chapelain, & Bonne 2015, 544; Simsek 2009, 597), concerning organizational science, it is used to describe an organizational capability where a firm is capable to pursue two contradictory activities simultaneously and in a balanced way, across the whole organization (Gibson & Birkinshaw 2004, 209; Tushman & O'Reilly

1996, 24). Examples of these contradictory activities appearing in the literature are, for example, simultaneously managing both exploitation and exploration, alignment and adaptation, or incremental and revolutionary change. (Gibson & Birkinshaw 2004, 209; March 1991, 71; Tushman & O'Reilly 1996, 8.) However, despite the different labels appearing in the literature, the primary activities described in relation to ambidexterity are coming together as exploitation and exploration. Thus, I shall focus on the nature of these activities.

According to the original conceptualization of organizational ambidexterity, the demand for simultaneous exploitation and exploration arises from the need to manage today's business through incremental change and exploitation, while concurrently being responsive to discontinuous changes in the environment through exploration. For this purpose, an ambidextrous organization accommodates a firm-wide system consisting of various structures, cultures, and procedures for both exploitation and exploration. In particular, the system allows the organization to manage, not only these contradictory activities but the strong tensions arising when simultaneously pursuing them. Hence, it is argued that managing the tensions and being prepared for changes is the very essence of organizational ambidexterity. Ultimately, enabling long-term performance. (Tushman & O'Reilly 1996, 8-15.)

Nonetheless, the latter development of the literature has departed from this conceptualization. Perhaps, the use of a definition which meaning was not entirely explained in relation to the activities, resulted in diversion from the original concept and the inclusion and role of tensions. Where the definition of ambidexterity means performing activities equally well with both hands (Fagard, et al. 2015, 544) it does not include the notion of **simultaneously** performing two **contradictory** activities equally well. However, a recent discovery of the term 'bimanual interference' was made in a situation of asymmetrical hand coordination discussion related to a dance choreography performance.

Furthermore, according to Diedrichsen (2021), the term bimanual interference is used with bimanual coordination (the coordination of both hands in a simultaneous movement), to illustrate the difficulty people face, when trying to perform **asymmetrical** activities with both hands **at the same time**. Moreover, the theory highlights how people tend to coordinate hand movements to symmetrical or mirroring performance. However, when concurrent asymmetrical performance is required, people face seeming difficulties and interference between the hands occurs. (Diedrichsen, 2021.) Thus, by utilizing this discovery and the same rationale, it would appear plausible to believe that the organizational ambidexterity literature may have departed from its original meaning being

a capability by which an organization manages tensions arising from the simultaneous and balanced pursuit of exploitation and exploration (O'Reilly & Tushman 2013, 331; Tushman & O'Reilly 1996, 24, 27).

Hence, essentially the goal is to go back to the pedigrees of the concept and illustrate a modern framework that is built upon the original line of thought and existing theory. Consequently, by utilizing an integrative literature review method, I aim to understand the magnitude of the issue, in other words, to identify how the theory has developed in relation to the original conceptualization. Thus, the main research questions are:

1. *To what extent has the organizational ambidexterity research departed from the original meaning of managing tensions? And,*
2. *How can the existing organizational ambidexterity research be integrated into a modern framework?*

To begin, an in-depth review of an extensive array of existing organizational ambidexterity literature is performed. Next, based on the literature review, synthesis and integration of the conceptualizations are provided, and a modern framework of organizational ambidexterity is proposed. Due to the specific nature of the research questions, the scope of this thesis is explicitly focusing on studies aiming to conceptualize or analyze organizational ambidexterity. The scope excludes any separate lines of inquiries that do not unambiguously address the conceptualization of organizational ambidexterity per se, for example, studies regarding innovation management. Furthermore, the scope is held to the extent that factors become relevant through the data collection process described in subsection 2.3.

This study contributes both to research and management practice. First, the accomplishment of a theoretical review and integrative theoretical synthesis can benefit not only academics and practitioners as a result of the advancement of the knowledge related to organizational ambidexterity, but secondly, it also benefits businesses who are stressed to find an answer how to respond and survive amid the multidimensional demands they face today, by providing a more unified and comprehensive understanding on organizational ambidexterity. Thus, reducing the gap between theory and practice.

Lastly, the sections of this paper are organized as follows; the following section will describe the methodology. Next, the theoretical foundation for the integrative framework is established. Following, integration and synthesis of the theories and a new integrated framework, drawing attention to the breadth and depth of the studies and surfacing

essential questions, is presented. Finally, the paper ends with a discussion and key findings, accompanied with practical implications and future research.

2 Methodology

This study was conducted using qualitative research methods. Moreover, a literature review was chosen as the method, due to its appropriate fit when challenging wider and more abstract questions (Baumeister & Leary 1997, 311). A literature review is a study about existing research (Salminen 2011, 4), and provides evaluative, explorative, and development possibilities on a theory that is at early stages (Baumeister & Leary 1997, 312; Torraco 2005, 357). Based on the preliminary literature review, the theory of organizational ambidexterity has diverted from its intended meaning. Critique has been raised as a result of the outbreak of the theory (Birkinshaw 2008, 376; Nosella, et al. 2012, 450; O'Reilly & Tushman 2013, 331; Simsek 2009, 599). As far as the author is aware, there is no previous attempt to integrate the existing theories by contrasting the original concept and later studies. Thus, a novel approach is used.

A qualitative literature review was chosen, as an empirical study has its limitations in that, it cannot take a wider stance on a topic and it has a burden for positive findings (Baumeister & Leary 1997, 313-314). Consequently, conducting an empirical study would not benefit the chosen field to the same extent as a literature review can. Lastly, important for literature reviewers is to stay flexible for original ideas and to use a diverse set of data as a basis for the review (Baumeister & Leary 1997, 314, 316). This is especially vital in this review since the attempt is to be both evaluative and explorative. Thus, objectivity, creativity, and multiple perspectives are needed.

2.1 Integrative literature review

In particular, an integrative literature review was chosen. It is a form of research utilizing a set of representative literature on a focal topic by providing a review, critique, and synthesis in an integrated way, resulting in new conceptualizations and perspectives on the topic (Torraco 2005, 356). Furthermore, an integrative literature review is the most comprehensive type of research review method that can address and portray complex phenomena, schemes, and issues (Whittemore & Knaf 2005, 547-548). In addition, the data is not restricted by the methods the studies have used, and the scope of data can be broad and include both theoretical as well as empirical studies (Salminen 2011, 6, 8; Whittemore & Knaf 2005, 547). Moreover, an integrative literature review differs from a systematic literature review in its broader ability to assess data and it differs from a narrative literature review by containing a critical analysis of the existing data (Salminen 2011, 8; Torraco 2005, 361). Thus, being a method that acts as a link between systematic and narrative literature reviews (Salminen 2011, 8). The analysis and synthesizing of data in an integrative review is a challenging encounter for the researcher. However, once

successful, it provides the means to present the state of the art, enable the development of the theory, and lastly, contribute to the application in practice. (Whittemore & Knaf 2005, 546, 548.)

The motivation for this review was two-fold: First, it is a common understanding among scholars that, establishing and managing ambidexterity is difficult for organizations (e.g. Birkinshaw & Gupta 2013, 293). Moreover, organizations tend to be able to manage the contrasting activities separately, however, when the essence is performing two activities simultaneously, the capabilities do not exist (Tushman & O'Reilly 1996, 8-11). Perhaps, the difficulties and lack of capabilities have been a result of the outbreak in the conceptualization of organizational ambidexterity, and practice is overwhelmed. Second, as the 'stable' status of the environment and market these days is more about complexity, multidimensionality, and cross-industry and global development, successful establishment and management of organizational ambidexterity become even more vital for long-term success. Thus, a clear outline and conceptualization of organizational ambidexterity were needed for enabling the firm successful existence in the modern infinite competitive arenas.

2.2 Design

To ensure rigor and systematic approach in this review, the following Whittemore and Knaf (2005, 548-552) five steps framework for integrative literature reviews was used to guide the examination;

1. Clear problem and purpose identification to provide concentration and borders
2. Defined literature search strategy to enable a variety of data sources
3. Data evaluation criteria to decide final sample and quality
4. Data analysis: reduction, display, comparison, and conclusion
5. Discussion and reporting findings

2.3 Data collection

The data collection, in other words, the literature search methods, are highly important for literature reviews. Furthermore, the reviewer shall present the databases that were used, the keywords used, and inclusion/exclusion criteria for the principal data. Finally, in case alternative methods were used, they should be illustrated as well (Whittemore & Knaf 2005, 549). In this review, the search methods were article search from electronic databases and snowball method (Perez-Bret, Altisent & Rocafort 2016, 600-601). The primary database was the HAAGA-HELIA FINNA Library, which has central access to 101 databases, among others, to the following leading journal collections: Business Source Elite (EBSCO), Business Source Premier, Elsevier ScienceDirect Freedom Collection,

Emerald, ProQuest, Sage Journals Online (Sage Premier), Web of Science as well as Google Scholar (HH-Finna 2021a). In addition, a cross-check by handpicking from Google Scholar was performed. The search was identified as complete when the sources systematically become irrelevant to the purpose of the phase. The search strategy was as follows:

Table 1. The search strategy used for data collection.

Phase	Search method & data source	Type of data & Purpose	Inclusion & Exclusion criteria
1 st phase	HH Finna ¹ and Google Scholar database with keywords "Organizational ambidexterity" and "Ambidexterity review".	Peer-reviewed articles. To gain an understanding of the conceptualizations of OA existing in the literature.	Include: Articles that review and/or conceptualize/provide a framework/explain OA. Picked based on headline and abstract. Exclude: non-English, a family business or public sector, non-profits, viewpoints in articles where OA is not the primary theory, empirical quantitative studies, articles about enabling OA, antecedents of OA, results of OA.
2 nd phase	Snowball method from 1 st phase articles.	Peer-reviewed articles. To use more OA literature that does not appear in database search to deepen the conceptualizations.	Include: Articles that intend to review and/or conceptualize/provide a framework/explain OA. Picked based on headline and abstract. Exclude: non-English, family business, public sector, non-profits.
3 rd phase	HH Finna and Google Scholar database with keywords "Organizational ambidexterity" and "Ambidexter*"	Peer-reviewed articles. To use viewing both OA AND a theory (a lens that arises from the 1 st or 2 nd phase) to have alternative perspectives.	Include: Articles that intent to review and/or conceptualize/provide a framework/explain OA. Picked based on headline and abstract. Exclude: non-English, family business or public sector, non-profits.
4 th phase	Snowball method from 3 rd phase articles	Peer-reviewed articles. To use more OA literature that does not appear in database search to deepen the conceptualizations.	Include: Articles that intent to review and/or conceptualize/provide a framework/explain OA. Picked based on headline and abstract. Exclude: non-English, family business or public sector, non-profits.

OA= Organizational Ambidexterity

¹HH Finna article search uses the key word and searches its equivalent, as well as partial wording, from the authors, headline and abstract (HH-Finna 2021a).

2.4 Data analysis

The analysis was based on the guidance of Whittemore and Knaf (2005). First, important in the data analysis is the unbiased, objective perspective thus, creative synthesis work should be the prime goal. Second, the following steps are suggested for the analysis; Acquired data is categorized or grouped in themes, which then are compared with each other, to advance the creation of the synthesis. This phase includes a data reduction, where the examined data will be summarized in a form appropriate for the researcher, for example, by producing one-pagers of each article. This step assists the researcher to analytically assess the papers against each other. Moreover, to assess the papers, that is an iterative process to look at the themes and perspectives in various ways, to further advance the arise of thematic features, patterns, or relations among the identified factors. In this stage, the researcher can, for example, contradict, challenge, cluster, thematize and construct a logical evidence trail of the factors he/she identifies. Lastly, the analysis process ends with a conclusion. In this step, the researcher presents the bridges he/she identified and produces an overall synopsis of the topic. The synopsis should be a comprehensive elaboration of the phenomenon. (Whittemore & Knaf 2005, 550-551.)

2.5 Data results

In total, the data collection resulted in 39 papers that met the search criteria. Furthermore, in the initial phase, 16 papers were reviewed. The second phase as a snowball search from the initial phase resulted in 18 papers that were reviewed. Lastly, the third phase yielded only five more papers to review and zero snowball results on the fourth phase. This may indicate that saturation on the literature sources was successfully obtained. Moreover, a careful reading and evaluation of each paper were conducted. Furthermore, each paper was thematized and the central arguments were highlighted and recorded in a summarizing notebook. Cautious assessment of the content was mandatory, as it was noted how researchers intended to depict and justify the theories from their research areas. Thus, weighting the articles with occasionally rather subjective points, instead of taking a broader objective stand.

As per the research question, special consideration was aimed to identify the role of tensions when evaluating the content of each article. In addition, statements in the articles were assessed whether the authors supported a reconciliation or management of tensions. Moreover, the organizational levels which were addressed, as well as the ambidexterity forms the theory entailed, were recorded. On the other hand, there was no need to assess methodologies used in the articles as the focus was on the theoretical justifications presented, and other than the meta-analysis by (Junni, et al. 2013), no

empirical findings were used neither in the theoretical review nor in the integrative conceptualization. It was clear that, due to the fragmented body of research, using empirical studies with diverse methodologies and operationalizations, the strength of the re-conceptualization would have suffered. Finally, all the articles used in the theoretical review and synthesis are peer-reviewed.

In conclusion, the next section starts the analysis phase. In other words, a theoretical review, and a broad conceptualization of what is known about organizational ambidexterity, are provided in the following section. Next, section 4 provides the second part of the analysis as a form of an assessment of the linkages and gaps between the conceptualizations in a form of synthesis. Lastly, the analysis part ends with presenting the justifications and illustration of the integrative framework.

3 Theoretical review

As shown in Figure 1, the literature on organizational ambidexterity has been extensively growing since 2010 (HH-Finna 2021b), and several authors have attempted to define the concept further. Within the next section, first, the original concept as described by Tushman and O'Reilly (1996) based on the work of March (1991) is presented. Second, the wider stance of the various conceptualizations that are used in this review is elaborated. Lastly, the level of investigation and operationalization of organizational ambidexterity is considered.

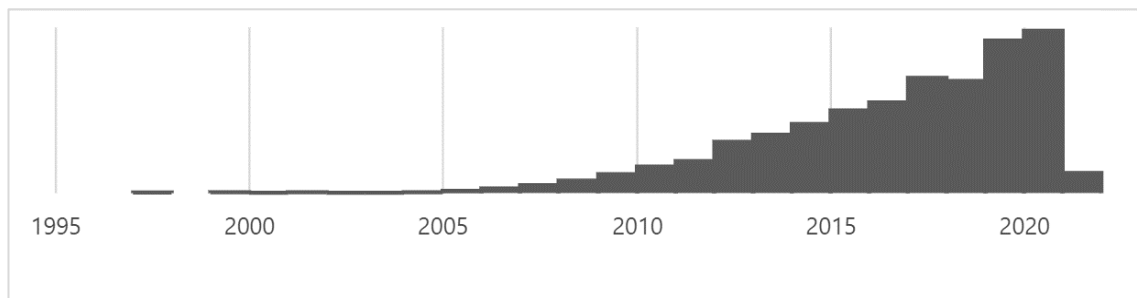


Figure 1. Growth of organizational ambidexterity literature (HH-Finna, 2021b).

3.1 The original concept of organizational ambidexterity

The concept of organizational ambidexterity originates from James March (1991) pioneering introduction of firm survival in the long-term being dependent on their capability to have a balanced, simultaneous performance between exploitation and exploration. While exploration is about seeking new opportunities by increasing variability, elasticity, risk-acceptance, and trialing, exploitation is about increasing productivity, improvement, enactment, and performance. (March 1991, 71.) Thus, being two rather differing activities.

Moreover, organizations face complications when attending these activities simultaneously. The uncertainty of returns in exploration and the complexity involved in stipulating the ideal balance between the activities create tensions, which in turn obscure the decision-making on suitable trade-offs. The balance is essential since, if a firm relies heavily on exploration it may have the risk of over-experimenting and not gaining benefits. On the other hand, too much exploitation may result in an undesired steady knowledge equilibrium, ultimately being degraded by the environmental changes. In conclusion, for long-term survival, it is not only important to optimize the current tasks and practices efficiently but similarly generate new ones. (March 1991, 71-72.) Thus, to be in a continuous learning mode.

Consequently, March (1991, 73) views the balancing act through learning and competitive advantage. Superior knowledge is accumulated through learning, by maintaining a continuous deficit between the knowledge of individuals and the organizational culture. Furthermore, the deficit is what enables exploration and mutual learning between the individuals and the culture. Indeed, March states that to be intelligent in long-run, the firm must maintain a sufficient level of exploration (1991, 73).

Moreover, according to March (1991), the culture can only learn from the people who deviate from it. Simultaneously, people learn from the culture, and the faster the learning, the sooner the equilibrium is achieved. In March's view, organizations can increase knowledge before reaching the equilibrium by controlling for socialization and diversity and therefore, maintain mutual learning. On the other hand, from the competitive advantage point of view, he argues that a superior position in the market can be pursued by increasing variance through exploration instead of maintaining or raising the mean through exploitation since among a group of competitors aiming for mean does not provide for superiority. (March 1991, 71-72, 80.) However, firms who are pursuing top positions may be required to sacrifice some of their average performance to exploration instead, to reach for the right-hand tail distribution and hence, initiate a competition for supremacy, in which case the average becomes irrelevant. Thus, the essential factor is how much of the knowledge contributing to the learning is derived from exploration and hence, contributing to the right-hand tail distribution of the performance. (March 1991, 84-85.)

These points are also in the work of Tushman and O'Reilly (1996). The balance between the exploitation and exploration activities is illustrated as a state of proactive change; simultaneous management of both incremental and revolutionary change through an integrated system, built of opposing blocks. Moreover, in their original work, Tushman and O'Reilly described organizational ambidexterity as the firm capability to engage in both incremental and discontinuous innovation and change, arising from accommodating several opposing structures, processes, and cultures within the same organization (Tushman & O'reilly 1996, 24). Furthermore, they argue that solely to change incrementally is not enough, as it does not lead to a change that would entail a modification in these opposing building blocks. Thus, revolutionary changes are depicted to be necessary. (Tushman & O'reilly 1996, 24.)

Bridging the works of March (1991) and Tushman and O'Reilly (1996) together, to enable long-term endurance and performance, firms need to be ambidextrous; to concurrently device both incremental and revolutionary change (Tushman & O'Reilly 1996, 8), by

ensuring a suitable balance of exploitation and exploration (March 1991, 71). Consequently, successful ambidextrous organizations are continuously learning, proactively enabling change, and seeking innovation. They continually re-create themselves through the combination of continuous improvement and disruptive change. (Tushman & O'Reilly 1996, 11, 24.) Thus, in reality, organizational ambidexterity is a deliberate pursuit for tensions.

Indeed, the views of March (1991) and Tushman and O'Reilly (1996) posit that tension is what is at the heart of the interconnectedness between exploitation and exploration and ultimately, allowing learning and transformation. Indeed, it is the ambidextrous firms that can host and manage these tensions and the learning from them, instead of getting encumbered by them or adapting to stability (Tushman & O'Reilly 1996, 8, 10). In so far, I believe that the proposed system of opposing structures, procedures, and cultures set to manage the balanced and simultaneous pursuit of both incremental changes (i.e. exploitation), and revolutionary changes (i.e. exploration) is what can produce the tensions when they are interconnected. Thus, the tensions establish an interconnection between the activities.

From this point, the chain of events appears to be the following; variability triggers tensions and knowledge accumulation. Furthermore, this chain enables learning and hence, maintaining a deficit to the firm knowledge equilibrium. Consequently, the deficit prevents the disadvantage in the face of discontinuous changes in the market. Moreover, variability also enables innovations, in other words, self-produced discontinuous changes. Producing discontinuous changes can provide for a higher position in the market. (March 1991, 83; Tushman & O'Reilly 1996, 22). Lastly, it is argued that when a level of tensions is kept this cycle is re-iterating and thus, maintained. Hence, securing long-term survival and success.

Since the introduction of organizational ambidexterity by Tushman and O'Reilly (1996), the literature has explained various forms of ambidexterity. Sequential, structural, contextual, reciprocal, interfirm, paradoxical, and dynamic ambidexterity have been proposed (e.g. Chen 2017; Gibson & Birkinshaw 2004; Kauppila 2010; O'Reilly & Tushman 2008; Simsek, et al. 2009; Smith & Lewis 2011). In the following chapter, each of these forms as well as the levels and operationalizations of ambidexterity are reviewed.

3.2 Review of organizational ambidexterity literature

Since the introduction of organizational ambidexterity by Tushman and O'Reilly (1996), the literature has been blooming. Furthermore, various definitions have appeared, and

various levels have been examined. However, despite the number of studies, a coherent conceptualization remains missing. In the following subsections, the different forms of ambidexterity have been introduced. The theories are examined in order of year of appearance, as shown in Figure 2.

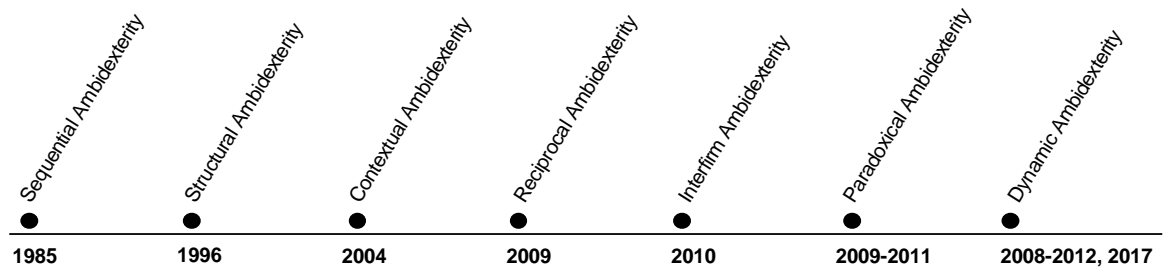


Figure 2. The evolution of Organizational Ambidexterity theories.

Furthermore, studies have also examined the different organizational levels and how to operationalize ambidexterity. To gain a holistic understanding of the mechanisms by which ambidexterity may arise and how it can be measured, a review of the levels and operationalization is provided in the last subsections of this section.

3.2.1 Sequential ambidexterity

O'Reilly and Tushman (2013, 327) first introduced the label of sequential ambidexterity. Furthermore, the concept is based on a traditional model of change established in 1985, the punctuated equilibrium by Tushman and Romanelli (Romanelli & Tushman 1994). The punctuated equilibrium theory explains an evolutionary form of organizational change, where the firm stability, in other words, the equilibrium state, is punctured in a face of environmental or strategic change. This causes the firm to transform and re-align itself towards a new equilibria state (Romanelli & Tushman 1994, 1141). Hence, similarly, the central idea in sequential ambidexterity is that the change is occurring sequentially and over long periods of time; first performing exploitation and upon a puncture to the equilibria, switching to exploration, until again gaining the state of exploitation (O'Reilly & Tushman 2013, 327).

In particular, the notion of exploitation and exploration is important because a firm may have structural changes over time, but to be called sequential ambidexterity requires that the changes be strategic and occur between the means of exploitation and exploration. However, whether this is true ambidexterity has been questioned, as it does not present a simultaneous pursuit of exploitation and exploration. (O'Reilly & Tushman 2013, 327-328.) In fact, Chen (2017, 388) placed sequential ambidexterity at the project level and stated that pursuing it at the organizational level may be problematic, due to the required

changes that are needed. Thus, to turn on to the first form of organizational ambidexterity that the literature has generally agreed to represent a form of ambidexterity, the following subsection will describe the nature of structural ambidexterity.

3.2.2 Structural ambidexterity

The central thesis in structural ambidexterity is that it is autonomous units operating in a simultaneous manner (O'Reilly & Tushman 2013, 328). From this architectural perspective, the firm may have different smaller autonomous subunits and the autonomy of each exists as the structural separation. The units have separate structures, processes, and decentralized decision making, however, held together by purposeful integration by an overarching unit. The umbrella unit enables the use of resources and skills, for example, economies of scale across the subunits, and exhibits social control through common predominant culture while simultaneously enabling individual subcultures to form in the autonomous groups. (O'Reilly & Tushman 2013, 327-328; Tushman & O'Reilly 1996, 25.) Moreover, the original concept by Tushman and O'Reilly (1996) is said to represent structural ambidexterity as they highlighted the importance of separating exploitation and exploration and setting an individual system for each. Lastly, though studies have mainly focused on separated units within a company, studies on structurally separated external units have started to form (e.g. Kauppila 2010).

The central idea is to structurally separate exploitation and exploration activities to resolve the source of tensions, in other words, to avoid the trade-offs between the two (O'Reilly & Tushman 2013, 328). The difference between sequential and structural ambidexterity is that, in sequential form, one follows the other, wherein structural ambidexterity, both are performed simultaneously. However, both are said to ultimately belong to the structural separation mechanisms and ultimately, avoiding tensions. Furthermore, arguments have been in favor and against. For example, it has been speculated that structural units intended to pursue exploration would change towards exploitation mode over time (Raisch, Birkinshaw, Probst & Tushman 2009, 689). Furthermore, the structural separation means have been largely debated and arguments are in favor (O'Reilly & Tushman 2013; Tushman & O'Reilly 1996) and against (Gibson & Birkinshaw 2004). The following subsection will introduce contextual ambidexterity, which is one of the theories arguing against structural separation and placing ambidexterity in the everyday tasks of the organizational members (Gibson & Birkinshaw 2004, 210).

3.2.3 Contextual ambidexterity

Contextual ambidexterity was introduced in 2004 by Gibson and Birkinshaw. In short, an ambidextrous context is described as a supporting organizational environment enabled by the leaders of the organization. Furthermore, it is built upon carefully designed systems and processes that together formulate a context that permits the concurrent performance of the organizational meta-capabilities for adaptability and alignment. Moreover, contextual ambidexterity consists of alignment and adaptability as separate but interrelated dimensions. Its premise is within and across the organizational task environment. The central thesis is that the tensions occurring in the organization, as a result of the concurrent pursuit of alignment and adaptation, are settled by the individuals while performing their tasks. Thus, it is a behavioral capacity. (Gibson & Birkinshaw 2004, 210-211.)

Alignment is illustrated as the activity level coherence towards common goals, and adaptation is the ability to promptly act differently upon various unexpected demands arising in the task environment. Ultimately, upon establishing contextual ambidexterity, the firm can be both aligned with its operations as well as adaptable to the varying environmental circumstances. (Gibson & Birkinshaw 2004, 209-210.) Initially, Gibson and Birkinshaw illustrated that alignment and adaptability are based on the existence of discipline, stretch, support, and trust. However, the findings indicated that all four elements were not present. Moreover, instead of four items, they identified two; performance management and social support. These elements were derived from factors relating to discipline and stretch, and factors relating to support and trust, respectively. (2004, 213, 217). Thus, as shown in Figure 3, it was concluded that Performance Management and Social Support were the contextual factors affecting the ambidexterity factors of alignment and adaptability and hence, leading to greater performance.

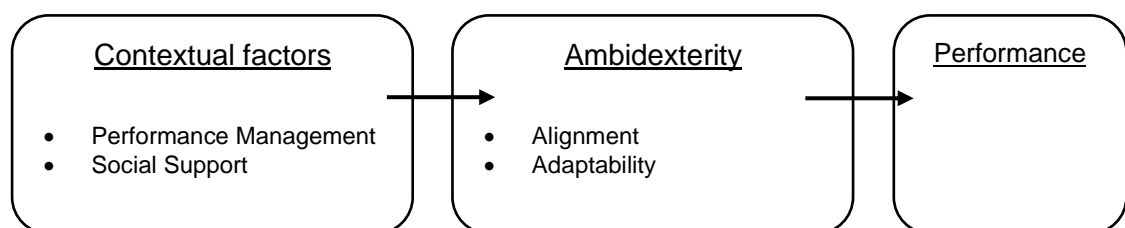


Figure 3. Context enabling ambidexterity (adapted from Gibson & Birkinshaw 2004, 210)

Contextual ambidexterity is a significantly different approach to sequential and structural ambidexterities, as it expects the settling of tensions to occur at a task level enabled by the context. The tensions raise from the varying and incompatible requirements in the task

setting, requiring ongoing trade-offs to be made by the employees. (Gibson & Birkinshaw 2004, 209.) Furthermore, according to O'Reilly and Tushman (2013), the reconciliation of tensions and thus balancing exploitation and exploration is assumed to be done by the individual at his or her task, and not at a business unit level as separate structures, nor the organizational level through the alteration of organizational activity. In particular, in their view, these decisions can be strategic and may require managerial or leadership intervention and direction. Thus, questioning whether the subordinate level employees possess the relevant capabilities to make such decisions and subsequently, should they be permitted to be made by them. Lastly, further evaluation on contextual ambidexterity was made, and it was thought to provide only limited levels of exploitation and exploration. (O'Reilly & Tushman 2013, 329.)

Ultimately, despite the arguments on individual trade-off decisions at a task level, the findings show that at an organizational level, there are no trade-offs. In fact, well-performing organizations simultaneously pursue alignment and adaptability. In particular, by enabling alignment around adaptability and thus, supporting a paradoxical view (e.g. Lewis 2000). Ultimately, this finding indicates that the organizational ambidexterity concept should be revisited. (Gibson & Birkinshaw 2004, 209, 221). Hence, a relevant question remains open, whether organizations should aim to resolve tensions as presented in the earlier forms or whether they should be embraced paradoxically? Following contextual ambidexterity, a new form of ambidexterity was proposed. It was an attempt to combine earlier literature and to suggest an advancement to the concept. The next subsection presents the theoretical argumentation for reciprocal ambidexterity.

3.2.4 Reciprocal ambidexterity

Simsek et al. (2009) introduced the fourth form of ambidexterity, reciprocal ambidexterity. As shown in Figure 4, their work combined all the previous forms into a 2x2 juxtapose where structural dimension, describing whether the organization pursues ambidexterity independently or interdependently to another unit is on one axis and temporal (sequential) dimension, describing whether the organization is enabling ambidexterity simultaneously or sequentially, on the other axis. The temporal dimension illustrates if the organization has capabilities to sustain a concurrent pursuit of exploitation and exploration, or whether they have capabilities that require them to pursue ambidexterity sequentially. On the other hand, the structural dimension is illustrating if exploitation and exploration are pursued within an independent unit, or in separate yet interdependent units. The essence lies in whether the organization has the capabilities to harness each individual in its unit to concurrently pursue exploitation and exploration, or if they have the harness a larger

scope of individuals from separate interdependent units. (Simsek et al. 2009, 865-868.) Thus, these dimensions together with the depicted capabilities, represent the three earlier forms of sequential, structural, and contextual forms of ambidexterity.

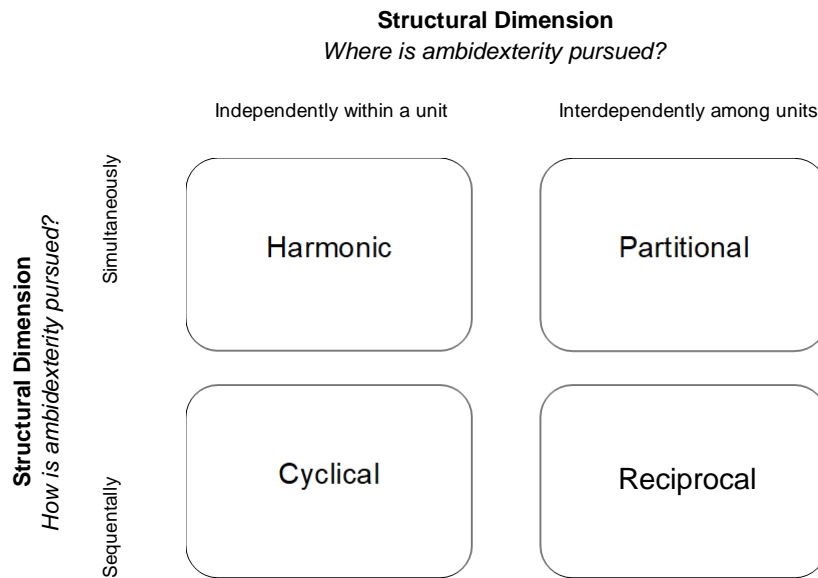


Figure 4. A juxtapose of organizational ambidexterity forms (adapted from Simsek et al. 2009, 868)

The reciprocal ambidexterity was an addition to the previous forms of ambidexterity. That is, harmonic, partitional, and cyclical have been illustrated earlier through the previous forms of sequential, structural, and contextual ambidexterities. For example, Harmonic ambidexterity greatly follows the theoretical concept of contextual ambidexterity (Gibson & Birkinshaw 2004). Like contextual ambidexterity, Harmonic ambidexterity is occurring in a single business unit and an emphasis is placed on each individual and their ability to reconcile the tensions resulting from concurrent exploitation and exploration activities. Furthermore, the reconciliation is enabled by the context and routines, ultimately founding the individual integrative facilities (Simsek, et al. 2009, 869).

Moreover, Cyclical ambidexterity follows the theoretical concept of sequential ambidexterity (O'Reilly & Tushman 2013). It is depicted as short periodical organizational transformations amid long epochs of exploitation and thus, temporally switches between exploitation and exploration. In particular, Simsek et al. (2009, 882-883) suggest that cyclical ambidexterity is common for technological organizations. The last form before the presentation of reciprocal ambidexterity is Partitional ambidexterity. This form engages directly with structural ambidexterity. Furthermore, Simsek et al. (2009, 884) describe how partitional form is a concurrent and synchronized endeavor of exploitation and exploration

between separate interdependent units or divisions, ultimately having the top management team responsible for the integration of the activities.

Lastly, in the reciprocal form, ambidexterity is consecutively endeavored within and across specialized sub-systems (units or divisions). Moreover, exploitation activities of one unit serve as the contribution for exploration in another, and subsequently, the exploration activity of the other unit reciprocally serves as the contribution for exploitation activity back in the first unit. The reciprocity is enabled by managers building relationships across the units or divisions, ultimately formulating an inter-organizational web allowing information sharing, collaboration in tackling challenges, shared decision making, and resource spills. In conclusion, they state: "reciprocal ambidexterity is best portrayed as being a synergistic fusion of complementary streams of exploitation and exploration that occur across time and units. (Simsek, et al. 2009, 886-887.) Despite their statement of fusion between exploitation and exploration, the activity itself remains separated in each unit. Thus, it appears that in this form the tensions are still being resolved due to the separation of activities within different units however, business-wise, there is more embedded value capture across the organization due to the intended reciprocity between the units.

As illustrated, the first decade in the 20th century already provided different forms of ambidexterity. In an attempt to combine the logic of structural separation and contextual ambidexterities, interfirm ambidexterity (Kauppila 2010) emerged. The following subsection describes this theory in more detail.

3.2.5 Interfirm ambidexterity

It is argued that an organization can pursue ambidexterity utilizing diverse interfirm relationships as well (Kauppila 2010, 284; Simsek 2009, 606). In fact, Kauppila suggested that interfirm relationships act as complementary bodies to structural and contextual ambidexterities. Furthermore, as shown in Figure 5, he synthesized that together with an exploitation-exploration knowledge balancing intra-firm ambidextrous context, the knowledge maximizing interfirm relations can act as the structural enabler for ambidexterity. Hence, he argued that a firm should pursue ambidexterity in a balanced way with simultaneously maximized levels of exploitation and exploration. (Kauppila 2010, 285-287.)

Nonetheless, despite the structurally separated external parties, context is depicted as important for contributing to the firm ability to seize the value from both exploitative and explorative external relations. Particularly important for this value capture is the absorptive capacity of the organization. (Kauppila 2010, 305). Absorptive capacity is defined as a firm

capability to realize the importance of new external information, understand it, and utilize it for commercial outcomes (Cohen & Levinthal 1990, 128). Thus, it is heavily dependent on the firm's prior knowledge (Kauppila 2010, 288).

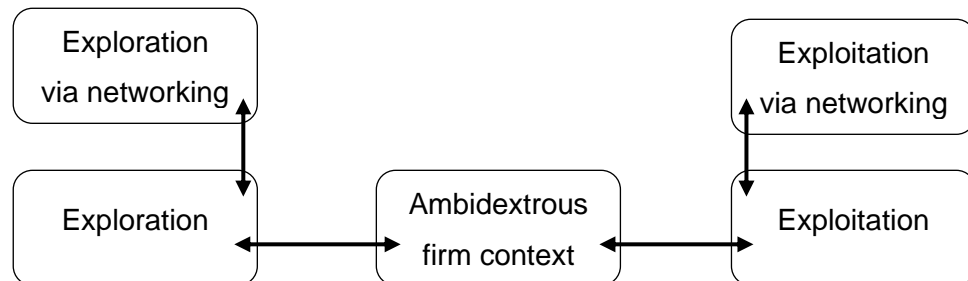


Figure 5. Interfirm ambidexterity presented (adapted from Kauppila 2010, 286).

Indeed, it has been proposed that when a firm is operating with a dual structure it is more pronoun to seek the knowledge it needs for organizational ambidexterity. In the absence of dual structure, the knowledge produced by a vast amount of interfirm connections may ultimately hinder organizational knowledge processing. On the other hand, in the existence of a dual structure where one focuses on exploitation and the other on exploration, the organizational knowledge processing will be greater. (Simsek 2009, 609). In addition, the firm value base must support the sought information. For example, if the firm does not value efficiency or innovation, it is improbable to spot valuable information contributing to such elements. (Kauppila 2010, 288.)

On the other hand, the dual structure is also needed because exploitation and exploration produced in a single unit organizational context alone are argued to diminish the organizational ability to produce radical results (Kauppila 2010, 286). Thus, aligned, and adaptive context with an absorptive capacity to integrate and balance information is vital for firms whose radical exploitation and exploration units are structurally separated to engage with partners in search of new knowledge. To this end, external partners can bring new information to the central firm's radical exploration activities, as well as increase efficiency by outsourcing or partnering in, for example, lowering the product costs. (Kauppila 2010, 287.) Thus, whereas previous authors have strongly emphasized a single form of ambidexterity superseding the earlier versions, Kauppila (2010) combined structural separation, context, and interfirm relations into a conceptual model stating that in reality, organizational ambidexterity is enabled through a variety of elements, such as the aforementioned components, and is likely to be a combination rather than based on a single element alone (Kauppila 2010, 284).

Whereas the previous models have been focusing on resolving the tensions by structural or sequential means or by decisions made by the employees in their everyday work, the following conceptual development allows to embrace the tensions. Thus, next, paradoxical ambidexterity is described.

3.2.6 Paradoxical ambidexterity

The paradoxical approach in ambidexterity was initially motivated by the pioneering ambidexterity work of Tushman and O'Reilly (1996) and it intends to provide another perspective to ambidexterity by investigating how the concurrent demands in the organizations can be pursued simultaneously (Smith & Lewis 2011, 381). Furthermore, this point was also brought to the literature through the contextual ambidexterity study by Gibson and Birkinshaw, (2004, 221), whose findings indicated somewhat paradoxical organizational approaches to ambidexterity. Moreover, the emphasis in paradoxical ambidexterity is that the organizations can move away from posing the challenges raised from the concurrent pursuit of exploitation and exploration as dilemmas that need to be solved either sequentially or structurally. In fact, the literature has been welcoming to this perspective. (Smith & Lewis 2011, 388.) In short, a paradox is described as opposing but interconnected components that appear logical when viewed separately, but illogical and ridiculous when viewed simultaneously (Lewis 2000, 760).

Moreover, these elements can be seen as contraries that are concurrently present in a whole, as in the Taoist representation of Yin and Yang, and preserved over time (Smith & Lewis 2011, 387; Lewis 2000, 762). Paradox has been a rising and escalating phenomenon due to the growing changes brought by technological advancements, the globalization of competition, and similarly, the increased diversity of the labor force. Furthermore, in research, it is often used as a label for contradicting demands, disparate perceptions, and irrational discoveries. (Lewis 2000, 760.) Thus, it appears that paradoxes represent multidimensional discoveries from the complexity organizations face today.

It is then perhaps not surprising that paradoxes challenge our architectures, bounded rationality, and thus generate tensions, which are a result of cognitively or socially sourced divergences that hide the concurrent existence of opposing realities (Lewis 2000, 761; Smith & Lewis 2011, 390). Hence, resulting in a cognitive tug of war (Andriopoulos & Lewis 2009, 702). Subsequently, in principle, individuals have the habit to disconnect the interconnected paradoxical components and simplify these tensions into either/or thinking, which hinders the visibility of the multifaceted interrelations between the subjects (Smith & Lewis 2011, 390). Furthermore, as a response to paradoxical tensions often involve defensiveness, they impede change (Lewis 2000, 761, 763). Instead of attempting to

resolve these cognitive conflicts and tensions, the teams should seek to recognize them and use them for their benefit (Smith & Tushman 2005, 526). Thus, for successful organizational ambidexterity and avoiding breaking down the exploitation and exploration to unidimensional either/or avenues, managing the cognitive tensions arising from the simultaneous pursuit of exploitation and exploration, the ambidexterity paradox, is vital.

In particular, Lewis (2000, 763-764) argues that tapping into the potential of the paradox is the key. Furthermore, they state that at an individual level the purpose is to re-evaluate one's past observations and practices and becoming at ease with tension and unease caused by the paradoxes. On the other hand, Smith and Tushman (2005) argue that at an organizational level these tensions can be reduced by providing a paradoxical frame. Moreover, the paradoxical frame is a given shared mental model, which enables the individuals to observe and accept the relationships of the paradox. In essence, to manage comprehension of the dual dimension, the paradoxical frame provides for two cognitive processes: differentiation, and integration. (Smith & Tushman 2005, 526-527.)

Furthermore, where differentiation is identifying the distinct nature of the elements, integration is viewing the elements from different levels to detect possible connections. Moreover, in ambidextrous terms, the differentiation highlights the co-existence of duality to employees and assists in relieving inertia. If inertia is not overcome, it is hindering the ability to be ambidextrous, as inertia tends to tilt the resource allocation for decision making towards the existing products, rather than the new products. Utilizing differentiation tactics, the inertia can be surpassed, for example, by showing that each product resulting from both exploitation and exploration is needed and unique and therefore, reducing the defensiveness of individuals working on these products. (Smith & Tushman 2005, 525-527.)

On the other hand, integration then is about identifying the relatedness of the exploitative and explorative products, by highlighting the relationships and potential synergies among them. Focusing on the integration enables the teams to think of ways to engage exploitation and exploration products further and ultimately, build a reinforcing cycle between the two. In fact, by integrating the tensions resulting from the differentiation may be counterbalanced by the tactics of integration (Smith & Tushman 2005, 527, 529). Thus, in conclusion, managing tensions arising from the ambidexterity paradox requires a new form of thinking and comprehension. In essence, it is embracing what could be, instead of what is.

From an organizational perspective, the differentiation-integration approach is proposed as a substitute or complementary route to ambidexterity (Andriopoulos & Lewis, 2009,

708; Raisch et al. 2009, 685). The logic for differentiation is based on separating the exploitative and explorative activities in different units that hold their contexts. On the other hand, the logic for integration mechanisms is to enable the organization to perform exploitation and exploration within the same unit. Managing the degree of differentiation and integration can vary depending on the task and timeline. (Raisch et al. 2009, 685-687). Managing these tensions is a continuous effort coming together as a dynamic capability that enables sustained ambidexterity (Raisch et al. 2009, 685-687).

Indeed, where at the individual level paradoxical tensions manifest and resolve themselves as cognitive elements requiring the individuals to possess relevant skills to manage the tug-of-war (Smith & Lewis 2011, 391; Andriopoulos & Lewis 2009, 702), at an organizational level this ability translates into dynamic capabilities (Smith & Lewis 2011, 392). Naturally, the theory developed into describing ambidexterity as a dynamic capability, which will be described in the following subsection.

3.2.7 Dynamic ambidexterity

In the dynamic ambidexterity view, organizational ambidexterity is considered as a capability, where the firm can resolve tensions resulting from executing two contradictory activities simultaneously, e.g. exploitation and exploration, or alignment versus flexibility (Nosella, et al. 2012, 450; O'Reilly & Tushman 2008, 194). Ambidexterity capability is claimed to be a rather multifaceted and adaptive structure embedded in the organization enabling the firm to address the conflicts arising from the contradictory activities (Nosella, et al. 2012, 450).

The initial form of dynamic ambidexterity (O'Reilly & Tushman 2008) originates from the dynamic capabilities view (Teece 2007). Moreover, dynamic capabilities allow firms to generate, employ and safeguard their intangible assets and thus, obtain a more sustainable advantage that goes beyond simply possessing knowledge. Furthermore, the capabilities are built of three building blocks: 1) Sensing and affecting opportunities and threats, 2) Seizing opportunities, and lastly, 3) periodically transform by managing the firm's intangible and tangible assets (Teece 2007, 1319). Consequently, O'Reilly and Tushman (2008, 185) argue that organizational ambidexterity as an exploitation-exploration activity is in fact a dynamic capability. Furthermore, they modified their view and present that perhaps the efficiency-seeking exploitation and innovation-seeking exploration activities need not be traded-off. How can ambidexterity then be a dynamic capability?

First, to enable sensing, the ambidextrous organization's senior leaders act as facilitators for learning, questioning the status quo, understand that failure can be part of the process as well, enables the incorporation and shift of knowledge despite the exploitative unit accentuates on the very opposites. Second, for seizing the opportunities, the senior leaders should foremost find a consensus on the strategic intent of the product, acknowledging while questioning the power that biases, path dependencies, and mental models may have, and finally, uniting the business model and strategy. Third, to pursue more long terms effects, the senior leaders must underline the transfer of assets from exploitation and existing products to exploration and developmental opportunities, having the emphasis especially on identifying the integrative value-producing function between the two. Ultimately, these activities are continuous and evolving, highlighting that ambidexterity is a deliberate act that stimulates organizational learning, where the organization 'learns to learn'. (O'Reilly & Tushman 2008, 190-191, 200.)

Ambidextrous designs are best pursued when the strategic conditions entail both that the new product is of strategic importance and, that the organization has operational leverage for it, in other words, existing assets and operational capabilities that can promote the new product. (O'Reilly & Tushman 2008, 196). Thus, highlighting the importance of synergy between exploration and exploitation. However, as these activities produce tensions when pursued simultaneously, O'Reilly and Tushman (2008, 119) established a series of propositions to recognize a connection between dynamic capabilities and ambidexterity. Moreover, they argued that the following propositions serve as the core for ambidexterity to be a dynamic capability (O'Reilly & Tushman 2008, 197-198):

1. Producing a captivating strategic intent that stresses the importance of both exploitation and exploration
1. Shared vision and values to provide for communal identity
2. A strong agreement on the strategy among the top management, consistent communication of this strategy, and supporting incentive principles
3. Individual aligned subunit architectures for exploitation and exploration and planned integration tactics and finally,
4. Senior leaders who have the ability to live with and manage the tensions

In this first view of dynamic capabilities and organizational ambidexterity, these theories are linked in so that, dynamic capabilities act as the most suitable lens to explain organizational ambidexterity (O'Reilly & Tushman 2013, 332). Furthermore, ambidexterity is argued to be a dynamic capability (O'Reilly & Tushman 2008, 187; O'Reilly & Tushman 2011, 6) enabled and managed by the senior leadership by improving the firm dynamic capabilities (O'Reilly & Tushman 2011, 6). The second dynamic ambidexterity perspective combines sequential, structural, and contextual ambidexterity. Thus, installing

dynamic ambidexterity necessitates the firm to build an architecture; a set of tactics, structures, and procedures that facilitate all three traditional forms (sequential, structural, and contextual) of organizational ambidexterity, while caring for the logic of exploitation and exploration (Chen 2017, 389).

Moreover, the second model proposes that building a dynamic form of ambidexterity requires the firm to seek a structural form at the corporate level, allowing separate units to pursue exploitation and exploration. Furthermore, contextual ambidexterity is required at the business unit to promote individuals to exploit and explore in their daily endeavors. Lastly, sequential ambidexterity at the project level exists when the various internal projects are synced together between the various business units. (Chen 2017, 386.) More specifically, a project may start as an exploration inquest in one unit, and once established as a viable business opportunity, it may transfer into exploitation mode to another unit and hereby advance sequentially. Lastly, dynamic ambidexterity is argued to be an organization-wide form of ambidexterity that combines the traditional forms of ambidexterities by harnessing their strengths while addressing their weaknesses (Chen 2017, 388-389).

As identified thus far, several forms of organizational ambidexterity have been proposed in the literature. Furthermore, these forms appear in various levels of an organization as well as are located within and between organizations. Hence, it was found important to address what literature says about the levels in which organizational ambidexterity is said to manifest itself. Thus, a review is provided in the following subsection.

3.2.8 Level of ambidexterity

A major portion of the studies focuses on explicitly explaining organizational ambidexterity from the perspective of leadership (Stokes, Moore, Moss, Mathews, Smith, & Liu 2015, 64). For example, originally, Tushman and O'Reilly (1996) posit managers to be key players in juggling the various tensions caused by the simultaneous pursuit of exploitation and exploration. Similarly, Gibson and Birkinshaw (2004, 210) argue that contextual ambidexterity arises when the leaders develop the enabling context which allows the designed exploitation-exploration meta-systems to function simultaneously. However, it has been questioned whether ambidexterity is exhibiting itself at the individual or organizational level (Raisch et al. 2009, 686).

At the organizational level ambidexterity could mean, for example, having two autonomous business units where one is focusing on exploitation and the other on exploration, or an independent unit with two teams focusing the activities separately or

lastly, a single team where the roles are assigned towards exploitation or exploration (Raisch et al. 2009, 687). On the other hand, even though the primary focus on ambidexterity has been the enabling architecture of the organization, individuals may need to act ambidextrously and thus, increase the value of these architectures (Raisch et al. 2009, 686). This could mean, for example, the focus being on leadership or the top management team in large structurally separated units or SMEs bearing the ambidexterity internally (Lubatkin, Simsek, Ling & Veiga 2006, 647; Tushman & O'Reilly 1996, 11; Smith & Tushman, 2005, 523), or individuals having to choose which task to focus on (Gibson & Birkinshaw 2004, 210-211). Ultimately, it seems a co-joint structure, where individuals enable the functioning of the architecture, and the architecture enables the functioning of the individuals and thus, appearing as a reciprocal interaction.

Indeed, the vast majority of the studies are concluding that the tensions produced by the ambidexterity are causing challenges to be reconciled at the next level down (Raisch et al. 2009, 687; Smith & Lewis 2011, 384). Furthermore, from the literature, I can interpret that this means that, for example, when separating ambidexterity into a dual structure the reconciliation is at the top management level, and therefore, the top management must be ambidextrous. At a business unit level, the reconciliation is at the leadership level and thus, the leaders must be ambidextrous. Lastly, at the contextual level, the reconciliation occurs at the individual level and therefore, the individuals must be ambidextrous. However, studies on the individual dimension are lacking.

From a leadership perspective, it is said that leaders of ambidextrous organizations need to be ambidextrous themselves, and able to manage the tensions arising from the embedded network. Moreover, the leadership task is to make sure the organization is aligned to its current endeavors yet concurrently being prepared for the unexpected, which will eventually require a major change. (Tushman & O'Reilly 1996, 24, 27-28.) Moreover, Lubatkin et al. (2006) investigated the role of top management team behavioral integration in the ambidexterity-performance relationship in Small and Medium Enterprises. Furthermore, the study was originated from the upper echelon theory (Hambrick 2007), which primarily describes that the leadership of a complex firm is a mutual activity by the top management. Moreover, the mutual cognition, competencies, and interfaces of the top management team fall into strategic decisions. However, the actions of individual leaders are influenced by the personal interpretations sourced via the individual experiences, values, and personality lenses. (Hambrick, 2007, 334.)

In fact, the upper echelon theory has been posited to be a promising theory that can be utilized to complement earlier ambidexterity reasoning (Lubatkin et al. 2006, 666). In

particular, the capabilities of leadership have been said to directly affect the achievement of ambidexterity (Birkinshaw & Gupta 2013, 293). Especially, the mental capabilities allowing the managers to move from the trade-off, in other words, the either/or perspective, to a both/and mindset, in other words, the paradoxical cognition that is built of paradoxical frames and means, is an enabler for successfully managing the ambidexterity tensions (Smith & Tushman 2005, 523). Hence, it appears that to successfully be able to design and orchestrate an architecture that supports ambidexterity, the leadership capabilities have to effectively demonstrate the ability to accept conflicting views to one's personal interpretations. Thus, it is merely not only about the ability to integrate the exploit and explore activities mentally, but perhaps the successful ambidextrous individuals simultaneously envision and pursue after the co-existence of multiple, conflicted yet interrelated, opportunities arising from the joint pursuit of exploitation and exploration.

On the other hand, at an employee level the worker should be able to be observant on improvement opportunities in his or her routine tasks (Adler, Goldoftas & Levine 1999, 46), be able to use judgment when the situation demands aligned or adaptive behavior (Gibson & Birkinshaw 2004, 210), simply said; to make own decision when to exploit and when to explore. Thus, the challenge for the individuals is to be able to comprehend, bring together, admit, and even welcome concurrent and interactive contrary and complementary influences of pursuing organizational ambidexterity. In other words, individuals need to develop a mindset that can integrate the differentiating elements to pursue change (Stokes et al. 2015, 70-71).

Based on the theory on absorptive capacity, which described the firm ability to reflect on new knowledge (Cohen & Levinthal 1990, 128), Raisch et al. (2009, 687) argued that similarly as the firms obtain the capacity to absorb knowledge, the individuals who would best be equipped to obtain a paradoxical cognition would need to have a broad experience and diverse knowledge base, as well as numerous associations across them. Similarly, Junni, Sarala, Tarba, Liu, and Cooper (2015, 13) suggested that individuals with multilevel backgrounds, for example, diverse cultural, functional, and firm experience, could be better equipped to manage the challenges posed by ambidexterity than the individuals with narrower history. However, achieving a wider permeability of paradoxical cognition in the organization may not be possible without issues, as it will be challenging to achieve for those, who are more in favor of consistency (Stokes et al. 2015, 70-71).

It is important to notice that the results of organizational ambidexterity and performance relationship are different at different levels of studies. Furthermore, in their comprehensive

meta-analysis Junni et al. (2013, 308) demonstrated that organizational ambidexterity was consistently positively related to performance. Moreover, their findings supported positive relations at the business unit, team, and alliance levels, but not at the individual level (Junni, et al. 2013, 303-305.) Similarly, when they examined exploitation and exploration separately against different levels, they found that business unit, team, and alliance relationships with performance were positive and correspondingly as the balanced and combined measures of organizational ambidexterity, the individual level relationship was insignificant. Thus, they concluded that the higher level of aggregate the stronger the positive performance results. (Junni et al. 2013, 305).

However, as there have appeared several attempts to describe the theoretical premise of organizational ambidexterity, its operationalization has also been rather divided. Thus, the following section attempts to capture the various ways organizational ambidexterity is being measured.

3.2.9 Operationalization

Organizational ambidexterity and organizational performance are positively related (Junni et al., 2013, 308). However, similar to there are several perspectives on the theoretical conceptualization of organizational ambidexterity, its operationalization has been inconsistent as well (O'Reilly & Tushman 2013, 331). Moreover, a consistent agreement is stated that various methods and operationalizations exist in the organizational ambidexterity literature, which makes the results incomparable, and the theory still separated from practice (Cao et al., 2009, 781, 783; Junni et al. 2013, 300; Kerry & DeSimone 2019, 362). Thus, a question remains open, whether ambidexterity is measured as separate constructs for exploitation and exploration (O'Reilly & Tushman 2013, 331), a balanced (match) or combined (increase) endeavor of exploration and exploitation (Cao et al. 2009), or should it be an analysis of their interconnectedness (joint variance) (Kerry & DeSimone, 2019).

Where Lavie et al. (2010, 115) argue that the studies which measure exploitation and exploration as independent, undervalue the integral trade-offs between the two activities. Simsek (2009, 602, 867) argues that true ambidexterity should be measured as the realizations of exploitative and explorative activities, in other words, ambidexterity is achieved when the firm has maximized the levels of exploitation and exploration, and structural and behavioral dimensions simply illustrate factors that enable organizational ambidexterity. However, measurements have been done both in a balanced or combined way. Thus, either as the difference between the two or as a sum of both (Cao et al. 2009, 782).

Furthermore, studies have shown that firms with more available resources benefit from embarking on both activities with full speed (i.e. combined magnitude) whereas, firms with fewer resources available pursue ambidexterity by balancing the activities through trade-offs between the two (Cao et al. 2009, 781). Furthermore, Simsek (2009, 603) argued that ambidextrous organizations produce high levels in a balanced way and if an organization produces only balanced levels, it is not ambidextrous. Finally, Cao et al. (2009, 781) stated that positive synergetic outcomes are produced through simultaneous high levels in balanced and combined dimensions.

However, mixed empirical evidence and a variety of results on the effects of organizational ambidexterity on performance have been reported (Junni et al. 2013, 300). Similarly, recent development challenges balanced and combined dimensions. Furthermore, Kerry & DeSimone (2019) identified Joint Variance as a potential method for measuring ambidexterity in a way, that is both in line with theory as well as with practice. Moreover, in their analysis of 53 samples, a paired sample t-tests showed that exploitation and exploration relation was statistically significantly higher ($r=0.37$) than independent exploitation or exploration relations with performance ($r=0.26$, $r=0.28$, respectively). In addition, they identified the presence of variance inflation as a result of collinearity when exploitation and exploration were measured independently thus, weakening the precision of results. Lastly, variable-omission bias was present in all samples, which the authors described to have a redundant effect on performance. (Kerry & DeSimone, 2019, 363).

As shown in Figure 6, the concept of joint variance warrants further investigation, as it is based on the theoretical point of interconnectedness between exploitation and exploration. Moreover, exploitation has its own unique variance indicated as EtP, in other words, its own contribution to performance, similarly, exploration has its own contribution to the performance indicated as ErP. Lastly, the connecting point between exploitation-exploration and its unique contribution to performance, is indicated as JV, the joint variance. (Kerry & DeSimone, 2019, 359.) Thus, it appears that joint variance is a promising avenue not only for appropriate measurement of ambidexterity but also to highlight the importance of interconnection in the conceptualization.

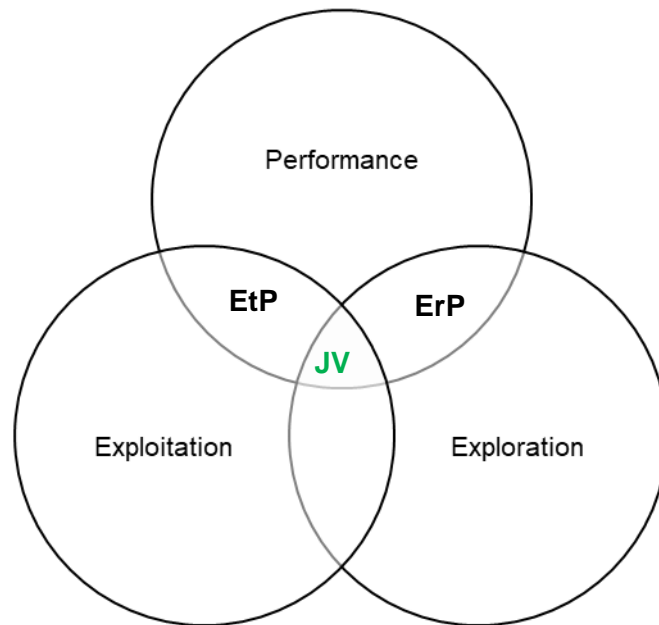


Figure 6. Derivation of Joint Variance (adapted from Kerry & DeSimone, 2019, 359)

In conclusion, both the conceptualization of organizational ambidexterity and the integrally linked operationalization require further development and clarification. The following section provides a synthesis by utilizing the various theories and ultimately presenting a modern conceptualization that intends to reach the gaps in the existing literature.

4 The rise of Fusion Ambidexterity

The previous section highlights the nature of the scattered organizational ambidexterity literature. In essence, reflecting the theories against the original conceptualization, we recognized how broad and comprehensive, yet rather abstract, the work by Tushman and O'Reilly (1996) was. Their original concept illustrates organizational ambidexterity in a rather practical manner and presenting a variety of relevant points, but conceptually it was missing the theoretical justifications. Moreover, throughout the two decades, Tushman and O'Reilly occasionally departed from their initial line of thinking, ultimately concluding that organizational ambidexterity is a dynamic capability. Thus, it appears that as they were not able to illustrate and justify their line of thinking in a way that would have produced a holistic and credible conceptualization, and clarity on the concept was lost, even by the original authors.

Next, I will provide a summary of the key findings from the literature review, followed by the integration and synthesis of theories in order to formulate a modern and comprehensive conceptualization of organizational ambidexterity. Lastly, Fusion Ambidexterity is presented with concluding remarks.

4.1 Literature review key findings

In the introduction, it was thought that the opposing pieces of the system that Tushman and O'Reilly (1996) described as being essential for ambidexterity, were the cause for the tensions to arise when the pieces are interconnected. How the literature takes the notion of tensions is that, first, during the first decade of research the role of tensions was rather limited. Confusion existed whether the tensions should be managed or reconciled and thus, avoided. Proposals for both approaches appear, however, notably, the early forms of ambidexterity take a reconciliation stand. Thus, intending to structure the exploitation and exploration activities in a way that keeps the tasks separated, whether it be at the corporate, business unit, or individual level. Second, towards the end of the second decade, the literature adopted a more merging line of thought, and managing the tensions became apparent. Several attempts to depict organizational ambidexterity through somewhat merged exploitation and exploration activities, such as paradoxical embracement and duality appeared, and in general, the interdependence and dynamicity of the two activities were largely recognized. Finally, the literature review verified my initial assumption, and indeed I conclude that tensions arise because of interconnected exploitation and exploration. Hence, it is concluded that in reality, organizational ambidexterity is a deliberate pursuit for tensions.

Where the initial view was looking at the exploitation-exploration as rather separate activities whereas, the latter view recognized them in an intertwined manner. Thus, in the latest literature, ambidexterity is proposed to have a dynamic form (e.g. Chen 2017). Indeed, on the latter part of the studies, I recognized that attempts to unify the theories of ambidexterity and dynamic capabilities began to surface. Perhaps it was a result of several ambidexterity studies referring to the systems, processes, and structures that need to exist in support of organizational ambidexterity. These systems were not described in very great detail, yet they were always described as an indispensable feature of ambidexterity. However, ultimately, they described how ambidexterity is actually a dynamic capability itself (O'Reilly & Tushman 2008). Indeed, I also conclude that ambidexterity is a capability, but our research concludes that it is a higher-level capability, that contains the firm dynamic capabilities and thus, they are complementary to organizational ambidexterity.

Lastly, since each of the ambidexterity forms presented in the previous section are seen as beneficial with their benefits but deficient alone with their shortcomings, the conclusion appears to be to pursue simultaneous exploitation and exploration utilizing different forms of ambidexterity in a complementary way (Chen 2017). To conclude, it is possible to bring together the different and diverse perspectives of ambidexterity into a unified whole. The following subsections present our synthesis and the proposed integrative framework for the modern fusion form of ambidexterity: the fusion ambidexterity.

4.2 Theoretical integration & synthesis

Drawing from these examples, the base of our integrative framework is first that, exploitation and exploration are complementary activities formulating a duality (Farjoun 2010). Moreover, the primary function of these activities is to expand the unit's knowledge base through structurally separated external parties (Kauppila 2010; Lavie et al. 2010). Second, we argue that when the simultaneous pursuit of these activities is interconnected through organizational learning, which is guided by the organizational strategic approach. The strategic approach is important because that ensures that value is produced, and the organization is intelligently ambidextrous. Third, when the strategically aligned ambidextrous activities are operationalized through dynamic capabilities, the firm performance is elevated. Finally, long-term sustainable success is optimized when learning creates progress by establishing a re-iterating loop with exploitation-exploration, strategic approach, and dynamic capabilities. The following subsections will explain our rationale with theoretical verifications as well as practical examples, ending with our

proposed conceptualization of organizational ambidexterity. Finally, concluding remarks will be provided.

4.2.1 Ambidextrous knowledge development

Intellectual assets may be the premise for ambidexterity in independent firms (Simsek et al. 2009, 888). Thus, adopting the view of Lavie et al. (2010), I agree that exploitation and exploration have the ability to expand the firm knowledge base. On one hand, exploitation is developing the active knowledge base by utilizing its existing skills and capabilities. On the other hand, exploration is changing the active knowledge base, shifting the existing skills and capabilities. Furthermore, the degree of how much the active knowledge base relates to the innovation determines whether it is exploitation or exploration. Thus, they cannot be viewed as isolated activities but more accurately, as a continuum. (Lavie et al., 2010, 114.) In this regard, this study concludes that they are highly interconnected, even boundaryless.

As research has shown, externally sought knowledge can contribute to the advancement of the firm active knowledge base, in some cases even to aid radical innovation. Hence, it has been identified to be important for a firm to seek co-operation with external parties, such as partners and alliances (Kauppila 2010, 286-287; Raisch et al. 2009, 689). Furthermore, in organizational ambidexterity managing the exploitation and exploration with streams of external knowledge requires, first, that the firm is actively brokering external knowledge and, second, that there exist firm-wide integration enablers such as absorptive capacity, as well as knowledge processes and their incorporation together (Kauppila 2010, 305; Raisch et al. 2009, 689-690). Subsequently, the firm capability to integrate the external knowledge streams with the internal knowledge base is seen as vital in organizational ambidexterity (Raisch et al. 2009, 690).

Nonetheless, it is established that exploitation and exploration require external knowledge input (Kauppila 2010, 286-287) and that these activities should be observed as a continuum (Lavie et al., 2010, 114) and thus, intertwined. Furthermore, through the duality lens, the interconnectedness of exploitation and exploration is explained (Farjoun 2010) enabling an augmented view on ambidexterity (Turner, Swart & Maylor, 2013, 323). Duality is a strategy to manage paradoxes as it concentrates on combinative features and interrelationships (Farjoun 2010, 204). In addition, duality presents exploitation and exploration as interconnected and opposing, however reciprocally supporting, whereas the majority of scholars view them as mutually exclusive and irreconcilable, despite recognized mutual contribution to performance. Thus, exploitation and exploration should be viewed as two essential elements which are interrelated, and without isolating them,

they formulate one object of study, that consists of twofold underlying nature (Farjoun 2010, 202).

In particular, the following rationale by Smith and Lewis supports the duality view in the integrative framework. Furthermore, they argue that if there is no exploration activity, there is no firm knowledge to exploit. Vice versa, if there is no exploitation activity, the base knowledge that allows absorptive capacity and experimentation, is deficient (Smith & Lewis 2011, 388). Thus, this study proposes that duality enables the knowledge transferring bridges between the activities, suggesting that to obtain a certain outcome, usually requires the activity of the other.

Hence, to gain performance in exploitation requires some form of exploration and vice versa, to gain performance in exploration usually requires some form of standard procedures (Farjoun 2010, 203). Subsequently, to exploit requires exploration mechanisms, and to explore, requires exploitation mechanisms, in other words, they are integral for one another and complementary (Farjoun 2010, 205). Moreover, to utilize the integration between the two, ambidexterity is reliant on the capacity of the organization to incorporate the internal and external knowledge bases (Raisch et al. 2009, 692-693). Thus, as show in Figure 7 below, this study proposes that in successful ambidexterity, the internal and external knowledge streams are not only integrated together and expanded via exploitation and exploration partners, but also reciprocal with each other.

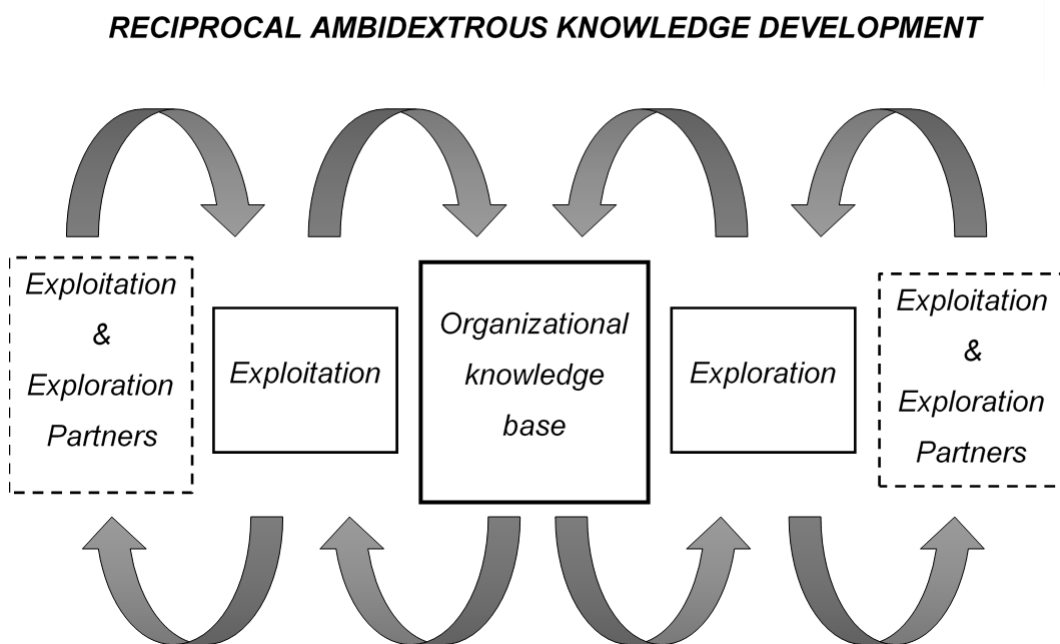


Figure 7. Reciprocal ambidextrous knowledge development.

To conclude, the primary function of exploitation and exploration with external parties is to expand the active knowledge base of the organization through the integration between the two. Different in this study from Kauppila's (2010) illustration utilizing external partners, is the duality view, which presents that in fact, both ends of the exploitation-exploration continuum can perform both exploitation and exploration. In other words, I suggest that the teams performing exploitation can also explore to exploit better, and similarly, teams exploring may seek exploitation methods to explore better. Thus, in conclusion, exploitation and exploration are integrated and coming together as the organizational knowledge base. The following section continues to link the organizational knowledge streams with the tensions rising from ambidextrous activities.

4.2.2 Becoming intelligently ambidextrous

The role of tensions has been neglected in organizational ambidexterity literature and scholars have focused mostly on identifying the various ways of resolving the existing tension (Nosella, et al. 2012, 459; O'Reilly & Tushman 2013, 331). Tension has been identified as the negative side effect of ambidexterity and managing these tensions has been appointed as the focal point (O'Reilly & Tushman 2013, 331). In other words, according to the literature, tension is what connects exploitation and exploration.

On the other hand, according to the logic of binary interference, this study presents ambidexterity as the core body between the left and right hands, and suggests it is the place where the tensions reside. In a similar vein, Lubatkin et al. (2006, 647) argued that the underlying tension is a result of cognitive dissonance from the integration attempt of opposing knowledge streams. Indeed, Smith and Lewis (2011, 391) stated that at the individual level successful mastering of paradoxical tensions requires the individual to have first, the cognitive ability to distinguish and receive interrelations among the tensions, second to have behavioral ability to perform opposing tasks, and third, to possess a certain level of emotional composure to maintain emotional stability (Smith & Lewis 2011, 391). Thus, this study proposes that one sign of ambidextrous orientation is the interfering load on cognition in its individuals, triggering the sensation of tension.

My initial argument for the fragmentation of ambidexterity literature was suspected, in one part, to be due to the definition of ambidexterity. In the introduction, I described the term bimanual coordination and the interference (i.e. tension) occurring as people attempt to perform simultaneous and asymmetric movements (Diedrichsen, 2021). Moreover, I discovered that this interference can be reduced as a result of bimanual practicing and hence, learning the movements (Wenderoth, Puttemans, Vangheluwe & Swinnen 2003, 296). Similarly, this study has highlighted how variation, in other words, interference, in an

organization provides opportunities for learning through mutual learning (March 1991, 73). Thus, this study uses the same rationale and argues that when an organization successfully performs the two opposing activities ambidextrously it is in fact learning, and hence, reducing the feelings of tension.

Nonetheless, considering that I discovered the term bimanual coordination during a dance rehearsal, on top of the practice and learning the movements, there are two other factors to consider; choreography and how the ambidexterity enhances it. In this study, let the choreography represent the strategic approach of the firm which is recognized to be an essential element in organizational ambidexterity. According to the paradoxical ambidexterity views, the strategic approach entails that the ambidextrous activities must be guided by a commonly shared strategic purpose and a paradoxical frame.

Furthermore, the strategic purpose highlights the importance of duality in a form of a two-folded vision with an emphasis on the simultaneous pursuit of both exploitation and exploration. On the other hand, the paradoxical frame contains the elements of differentiation and integration which are cognitive processes to enable a shared mindset, that allows individuals to adopt and comprehend the simultaneous pursuit of exploitation and exploration. (Andriopoulos & Lewis 2009, 697; O'Reilly & Tushman 2008, 119; O'Reilly & Tushman 2011, 9; Smith & Tushman 2005, 526-527.) Hence, this study suggests that once the strategic approach is in place, the organization can orchestrate its activities ambidextrously without resolving the tensions but instead managing them. Thus, a strategic approach adopting a duality view is the foundation for the choreography designed to deliver an exquisite performance.

Secondly, what makes the performance exquisite? The answer is, ambidextrous movements. To illustrate this line of thought at an organizational level, I combine again the dance performance example in combination with the notion of duality, which means that two activities are opposing but integrated and complementary, formulating together a single object of study (Farjoun 2010, 202). In particular, when observing dance this study suggests that the duality means that one movement forming part of the choreography, that is designed to deliver high and challenging levels of performance, is an ambidextrous movement. In practice, an ambidextrous movement is built, for example, so that the left and right hands both perform a different activity simultaneously, however, together these movements form one movement which is designed to be part of the choreography. Therefore, to form that particular ambidextrous movement requires both hands to perform different movements simultaneously. Hence, this study suggests that ambidextrous activities in organizations are those, which neither exploitation and exploration can formulate alone.

Consequently, a person can perform two opposing activities simultaneously and be ambidextrous, but if they are not carefully designed to be a movement as a part of the choreography, the value derivation is lost. Hence, aggregating the same logic to the organizational level, this study argues that organizational ambidexterity is not solely a simultaneous performance of exploitation with one hand and exploration with another, despite the majority of the literature explaining it as such. Furthermore, following the earlier logic of ambidextrous movements, this study proposes that organizational ambidexterity is the balanced merged movement outcome of simultaneous exploitation and exploration. In addition, when this movement is strategically designed and hence, strategically aligned, it is a value-producing function enabling an exquisite performance. Thus, it is argued herein that exquisite organizational ambidexterity is designing a series of multidimensionally distributed ambidextrous movements which are synced simultaneously while continuously developed strategically.

I call this making ambidexterity intelligent. My view is somewhat different from that of March (1991, 73) who argued that organizational intelligence is dependent on sustaining a sufficient level of exploration. However, I propose that exploration solely provides knowledge, and in fact, is integrated with exploitation. Furthermore, as shown in Figure 8 below, I propose that intelligence occurs only when the merged knowledge streams from exploitation and exploration are complemented with a strategic approach. Subsequently, the previous section explained how the organization uses external partners to extend and develop its knowledge streams. In this section, I highlighted the importance of tensions in representing learning, when individuals merge the knowledge. Ultimately, this study suggests that to make the merged knowledge intelligent and ambidextrous, it should be complemented with a strategic approach.

INTELLIGENT AMBIDEXTERITY

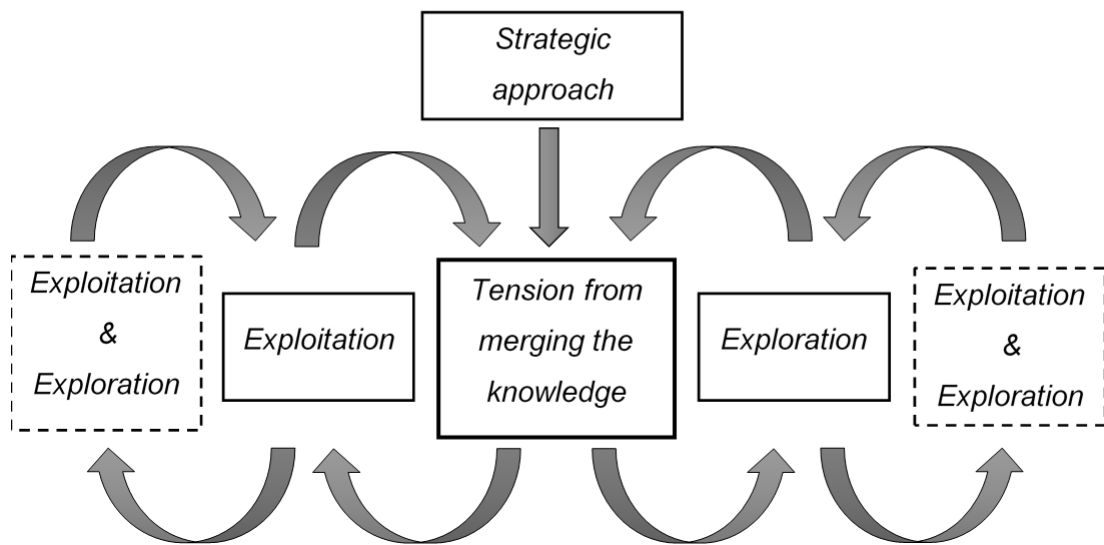


Figure 8. Tension is the basis for merging knowledge in intelligent ambidexterity.

In conclusion, the tension creates the foundation for ambidextrous learning. Furthermore, a strategic approach is enabling the learning to be aligned and hence, transform into organizational intelligence. Therefore, learning and strategic approach together are fundamental parts of successful organizational ambidexterity. The following section will further extend the function of organizational learning in organizational ambidexterity, by describing the role of ambidextrous organizational learning.

4.2.3 Ambidextrous organizational learning

Birkinshaw and Gupta (2013, 288) stated how organizational ambidexterity is about the various ways organizations develop to manage the tensions arising from the simultaneous performance of opposing activities. I suggest that organizational learning is the central mechanism for managing these tensions. Moreover, my rationale is based on the theoretical justifications described in this subsection, which tie together knowledge bases, tension, cognition, and absorptive capacity at the individual level, leading to reciprocal ambidextrous learning at the organizational level. Thus, I propose that when this system functions successfully, tensions are an ongoing phenomenon, indicating a learning opportunity.

Regarding individual cognition, as presented earlier, tension is a result of cognitive interferences from intending to simultaneously perform opposing activities (Andriopoulos & Lewis 2009, 702; Smith & Lewis 2011, 388-389) and hence, present when merging the

knowledge streams from exploitation and exploration. Furthermore, according to Cohen and Levinthal (1990), individual cognition relates to absorptive capacity, the prior knowledge in especial, and it is identified as the principal factor in individual absorptive capacity. At an individual level, absorptive capacity is learning and problem-solving. Moreover, learning is arising from the connections and associations the person can make between prior and new knowledge, and the more the individual has prior knowledge, the more they are said to be able to learn. On the other hand, the problem-solving factor is enabling the person to create knowledge from prior and new knowledge and thus, make novel connections. (Cohen & Levinthal 1990, 128-130.) Subsequently, absorptive capacity also has exploitative and explorative nature, which ought to be balanced to enable effective learning (Cohen & Levinthal 1990, 131-133). Thus, at the individual levels of organizational ambidexterity, I argue that tension and absorptive capacity are co-joint, as the individuals experience interference when trying to understand the new knowledge from exploration and merge it with the existing related knowledge gained from exploitation.

Nevertheless, at an organizational level, absorptive capacity originates from that of its individuals. The central task of absorptive capacity at an organizational level is to enable the firm to identify the usefulness of external knowledge, reflect on it, utilize it, and operationalize it commercially. (Cohen & Levinthal 1990, 128-129, 131.) Furthermore, on top of the prior related knowledge, it depends on the internal knowledge transfer processes, and in particular, it is dependent on the individuals who interfere with external parties as well as the individuals operating between subunits in a firm (Cohen & Levinthal 1990, 132). Hence, supported by the earlier statement by Smith and Lewis (2011), I suggest that the absorptive capacity guides knowledge accumulation between exploitation and exploration through the interconnecting links. As a result, the theory of absorptive capacity also links to ambidexterity via inter-firm ambidexterity. In particular, by having a role in the organization's ability to integrate explorative knowledge through the relatedness of its existing knowledge and consequently, to be able to incorporate and apply new knowledge to existing practices (Kauppila 2010, 305). Thus, absorptive capacity is vital in bridging together exploitation and exploration (Andriopoulos & Lewis 2009, 708).

Regarding exploration, absorptive capacity is essential for the firm innovative capabilities (Cohen & Levinthal 1990, 128). Moreover, individuals possessing a diverse knowledge base are more capable to assimilate new knowledge due to the increased odds that, the new knowledge will be relatable to prior knowledge (Cohen & Levinthal 1990, 131). In addition, keeping diversity in the knowledge base is important, and excessive unity among the organizational members' knowledge base should be avoided (Cohen & Levinthal

1990, 134), since the more diversity and variation, the longer the organization will learn new information (March 1991, 77) and the better the organization will be in learning to create something novel (Cohen & Levinthal 1990, 134). Hence, when a level of exploration is maintained it results in a mutual learning cycle (March 1991, 73) and ultimately, secures collective innovativeness in a level which any individual could not reach alone (Cohen & Levinthal 1990, 133). Thus, this study suggests that seeking external knowledge across the organization as a variation-inducing mechanism, not only preserves absorptive capacity by extending the prior knowledge but also is a crucial element for mutual learning and innovation.

Ultimately, I conclude that sustaining a design for a high level of exquisite performance requires the firm to maintain the learning cycle and continuously hone the elements of strategic approach and thus, the choreography. As people rarely come to see the same show twice, developing these items is demanded. Hence, highlighting the fact that the learning should not stop, and a re-iterative progression is needed. Consequently, as learning opportunities are a result of rising tensions, I suggest that in successful value-producing organizational ambidexterity, the existence of tensions is an ongoing phenomenon.

Thus, as shown in Figure 9, this study proposes that to manage the tensions and learning, in so far five key takeaways of organizational ambidexterity can be derived; 1) exploitation and exploration are reciprocal knowledge-producing activities causing tension as the two knowledge bases merge, however, 2) merging the knowledge is impacted by absorptive capacity which acts as the bridge between exploitation and exploration 3) and leading to learning opportunities. Lastly, 4) strategic approach is required to make the organizational learning intelligent and thus, to create value from ambidextrous activities and 5)

organizational ambidexterity is a re-iterating and progressive capability; continuously maintained learning cycle.

AMBIDEXTROUS ORGANIZATIONAL LEARNING

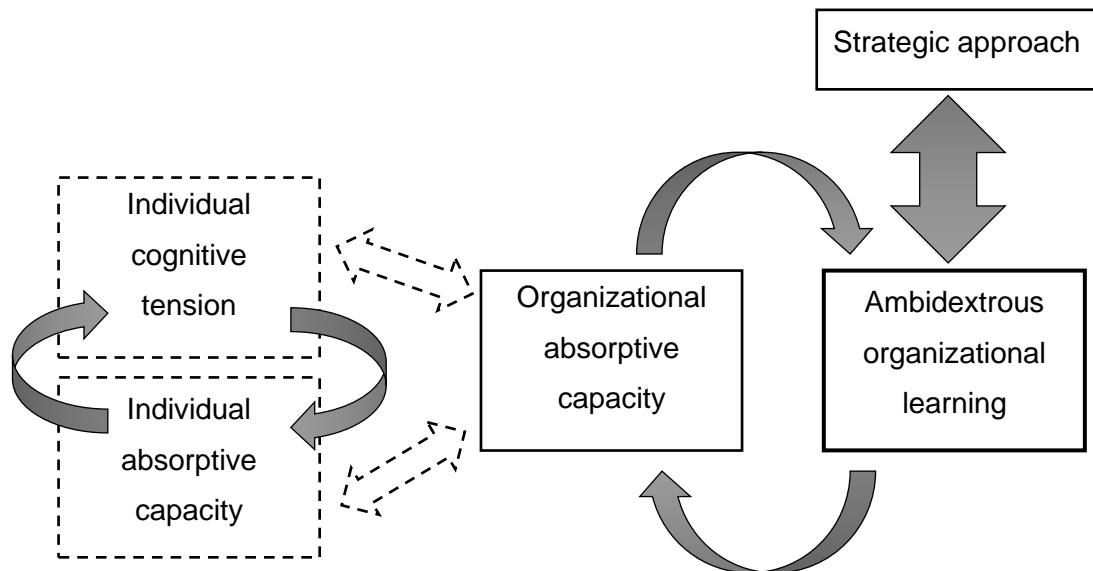


Figure 9. Ambidextrous organizational learning

In conclusion, I relate the continuous tension creating the learning cycle to the necessity for successful firms to proactively commence innovations. Furthermore, it is important for organizations to continuously learn what operates well in the system and what does not. In addition, to seek external information and use it to modify the existing system to meet the demands from the external environment. Hence, the essence of learning is to transform, instead of merely adapt, and firms performing exquisitely are congruent in their learning endeavors. Ultimately, going beyond evolutionary and incremental development. (Tushman & O'Reilly 1996, 11, 18).

In this subsection, I have shown how transformation level change is occurring as a result of the successful external relationships producing variation to enable new intel to commence. Furthermore, as the variation resulting from the exploration is induced and merged with exploitation utilizing absorptive capacity, inevitably, tensions arise. Where I described how individuals can master these paradoxical tensions by cognitive and behavioral abilities as well as emotional composure, an organization can master them by having dynamic capabilities (Smith & Lewis 2011, 391-392). Thus, the following subsection describes how dynamic capabilities formulate a part of organizational ambidexterity by operationalizing ambidextrous learning.

4.2.4 Ambidextrous synergy and performance

The most substantial addition contributed by this study to the existing conceptualization of organizational ambidexterity is the synergy, which I propose to be a result of dynamic capabilities moderating the relationship between learning and performance. Literature does mention synergy several times, for example, in a form of the integratedness of the knowledge acquired via exploitation and exploration (Raisch et al. 2009, 692-693) or synergy as learning (Andriopoulos & Lewis, 2009, 708). Consequently, the assumption has been that when the exploitation and exploration activities have been balanced and resulting in learning, the synergy has been achieved and it results in performance. It may indeed result in a performance, however, one of the crucial elements of ambidexterity is the long-term success and survival (Tushman & O'Reilly 1996, 8; O'Reilly & Tushman 2013, 330), and based on this vitality, I argue differently.

As shown in Figure 10, I propose that the synergy is not achieved until ambidextrous learning is operationalized using dynamic capabilities. Hence, I also disagree with O'Reilly and Tushman (2008) that ambidexterity would be a dynamic capability. On the contrary, I propose it needs dynamic capabilities to produce synergy, in other words, dynamic capabilities facilitate long-term performance. However, it is important to be aware that each dimension presented earlier; simultaneous exploitation-exploration, organizational learning, and dynamic capabilities may each produce higher performance alone. However, this study argues that neither one alone makes the organization ambidextrous nor successful over the long term. Hence, caution should be administered when determining which firms perform ambidextrously.

DYNAMIC CAPABILITIES AND AMBIDEXTROUS SYNERGY

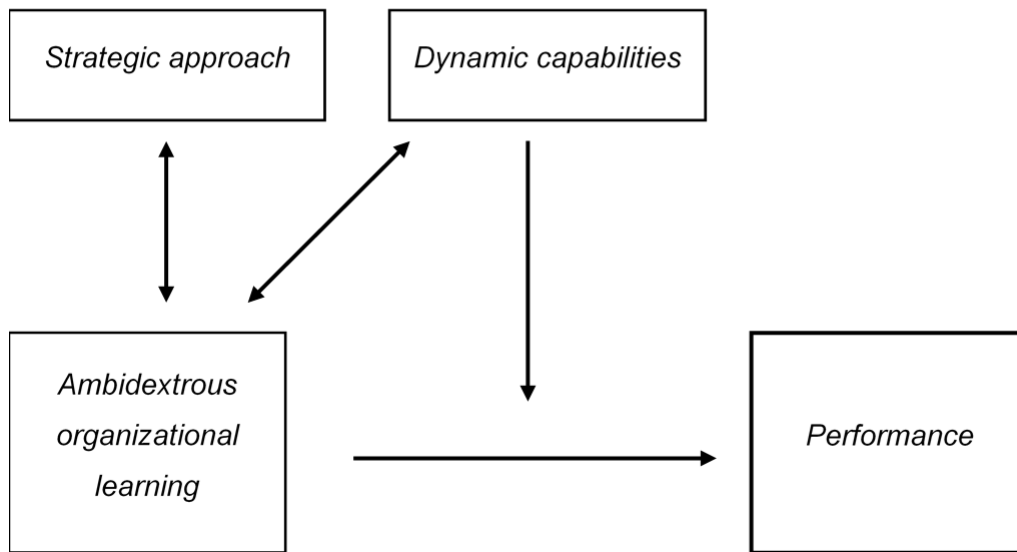


Figure 10. Dynamic capabilities moderating the relationship between ambidextrous organizational learning and performance.

Dynamic capabilities represent the accepting and embracing tension capabilities of an employee at the organizational level (Smith & Lewis 2011, 392). In other words, where the individual can utilize his or her knowledge and learn in their daily work, dynamic capabilities allow that knowledge and learning to be harnessed into organizational outcomes. Dynamic capabilities represent the system within the firm that operationalizes various organizational functions. It is a combination of well-defined processes designed for sensing, seizing, and transforming (Eisenhardt & Martin 2000, 1106; Teece 2007, 1319). Traditionally, this would mean the organizational routines and ‘best practice’ which adapt to the organizational environmental dynamism by either supporting stability or velocity, in other words, either being processes supporting predictable outcomes to support stability or experimental processes creating new knowledge and supporting velocity. (Eisenhardt & Martin 2000, 1106.)

Furthermore, it has been argued that dynamic capabilities themselves are not a source for sustainable competitive advantage, as they are based on routines and thus, they are imitable configurations across firms. However, they are the enabler for sustainable competitive advantage through the results that are produced when organizing the routines and firm resources into an exquisite performance. (Eisenhardt & Martin 2000, 1106-1107, 1110.) Moreover, maintaining a sustainably exquisite performance requires that the dynamic capabilities be developed through organizational learning (Eisenhardt & Martin

2000, 1114). Hence, I argue that, when an organization possesses the ability, not only to orchestrate the ambidextrous organizational learning and intelligence, but also to translate that ambidextrous orientation into monetary benefits, the firm has embedded the dynamic capability processes at the organizational system level, and they formulate a part of the re-iterating learning loop required by the successful organizational ambidexterity. Thus, this study proposes that the purpose of dynamic capabilities is to operationalize the realized opportunities into materialized outcomes.

The processes must be system-wide, as leaving the monetization solely on the shoulders of individual effort, may set the firm in a weak position. (Teece 2007, 1323). However, I want to emphasize an important individual factor of dynamic capabilities in the pursuit of ambidexterity. According to Teece (2007), capturing opportunities by making sense of the information in dynamic capabilities is about analytical systems, in other words, senior management hypothesis testing with appropriate data and methods (Teece 2007, 1323, 1326). Statistically speaking, hypothesis testing involves statistical methods aimed to measure whether the models used for the hypothesis assumptions hold in the larger population (Field 2013, 65). Speaking in business terms, I could say this can potentially already be a very late phase for innovations. Moreover, for example, disruptive innovations are first adopted by so-called early adopters. Meaning reaching a niche, in other words, a smaller group of people, before it enters the mainstream and hence, the larger population (Zuckerman 2016). Hence, it may be likely that this stage of the product development is reflecting more incremental innovation where the inimitability would be threatened since the product is tested already against the demand from the masses.

However, in ambidexterity, the key is to be able to both produce incremental innovations and to be able to produce innovations that are discontinuous and disruptive (Tushman & O'Reilly 1996, 24). Hence, to produce disruptive innovations and aim for the top place in the competition through ambidexterity, statistically speaking, one would also aim for the right-hand tail of the distribution (March 1991, 84-85) to reach the audience of early adopters that adopt the product prior the mainstream (Zuckerman 2016). Consequently, this study argues that the organization should also be able to recognize the possibility of right-hand tail innovations. Thus, a certain capacity for entrepreneurial sprints and bypassing the system becomes important.

This entrepreneurial-sprint and by-passing the system capacity is described in dynamic capabilities, by making sure that the tacit knowledge is also harnessed into decision making in dynamic capabilities (Teece 2007, 1329). According to Teece, this can be done by allowing the individuals to deviate from the routines set by the system, in other words,

he states that a substantial factor in dynamic capabilities emerges around an individual's facility to supersede established rules, for example, for decision making and resource allocation, that are improper in the occasion (Teece 2007, 1327). Furthermore, this capacity has been described in the ambidexterity literature as well. For example, Kauppila (2010, 305) stated how an R&D unit was able to pursue radical exploration when its researchers were isolated from the firm command and coordination.

Nevertheless, more today than before, I argue that this ability has to exist firm-wide. Subsequently, Stokes et al. (2015, 75) explained how certain individuals possessing critical mindsets see predictability, stability, and such described 'permanence' of matters as illusions, as they ultimately do not dwell with the world of dynamic uncertainty, unpredictability and continuously changing permanent features of our meaning-making systems, selves, environment, and organizational situations. Hence, I believe that entrepreneurial ability is the capability of certain individuals to acknowledge that the routines and the systems in organizations are merely illusionary boundaries and not rules of prohibition. Furthermore, this study suggests that while the system is an important factor in harnessing the individual effort to an organizational level, each individual must know, that the system is also merely a mirage, possible to break at any point. Thus, I argue that each individual must possess a mandate to break the illusions of the organization when they so see fit, and simultaneously be supported by the organization in doing so.

In conclusion, the function of dynamic capabilities is to operationalize the learning gained from simultaneous exploitation and exploration. Furthermore, the routines provided by the capabilities should be ambidextrous (Junni et al. 2015, 18), in other words, facilitate the juncture between the activities instead of keeping them separate. As the synthesis suggests a clear indication of constant integratedness between exploitation and exploration in successful ambidexterity, I propose that to operationalize the concept, a further examination of the applicability of the synergistic joint variance measurement by Kerry and DeSimone should be made (2019, 359). Furthermore, the synthesis presented in this study advocates that in line with the theory of organizational ambidexterity, the individual or combined efforts of products of exploitation and exploration should be disregarded when measuring organizational ambidexterity. Moreover, in ambidexterity, these activities are merged into new knowledge, which is turned into intelligence through strategic approach and learning, and finally, monetized through dynamic capabilities. Thus, organizational ambidexterity is the function of system intelligence and dynamic capabilities.

4.2.5 Progressive organizational ambidexterity

Organizations are complicated, formed of multiple layers and several dimensions and ultimately, temporal entities (Farjoun 2010, 205). Temporality combined with learning and dynamic capabilities makes successful ambidextrous organizations lively and progressive. Furthermore, the literature has proposed that potentially, ambidexterity is composed of several different ambidextrous elements existing both internally and externally (Kauppila 2010, 284). Thus, it would be rather simplistic to depict it as one-dimensionality or uniformity.

However, prior research has illustrated the construct in a quite static presentation and several conceptualizations capture a certain configuration resulting in successful ambidexterity (Raisch et al. 2009, 686). Furthermore, some of the solutions constructed to maintain ambidexterity, such as structural and contextual, have been thought to require modifications over time and therefore making them appear sequential (Raisch et al. 2009, 689). Nevertheless, later literature development has concurred that ambidexterity is a multi-level phenomenon (Birkinshaw & Gupta 2013, 293), leaning towards dynamicity (Chen 2017, 389). Yet, there are concerns, and a statement of the existence of organizational ambidexterity has been raised: If the ambidexterity concept reaches everything, then possibly, it is nothing (Birkinshaw & Gupta 2013, 291).

To answer this concern, I propose that the factor which compiles the existing elements into ambidexterity is the integrative link, ambidextrous organizational learning. Once there is an establishment and reciprocity from ambidextrous organizational learning, the aggregation of individual-level elements to organizational level phenomena, and the integration of exploitation- exploration, strategic intent, and dynamic capabilities are enabled. Furthermore, I believe that the propositions of ambidexterity being sequential, have been due to the static configuration and single dimension view, ignoring the presence of multiple dimensions and levels. Most importantly, it has ignored people as intelligent humans and able to direct behavior. Hence, I argue that the nature of organizational ambidexterity is progressive and dynamic, rather than configurational and static.

Consequently, organizational ambidexterity manifests itself differently in different levels due to the nature of the task environment at the particular level (Gibson & Birkinshaw 2004, 210-211). In fact, it is said that the knowledge inhabits the firm individuals and especially in those individuals who generate, identify, record, retrieve and employ knowledge when performing their tasks (Bock, Zmud, Kim & Lee 2005, 88-89). In this regard, the context matters greatly, whether it allows the individual to use his or her

discretion in decision making and to perform in their tasks in ambidextrous ways (Gibson & Birkinshaw 2004, 210-211; Raisch et al. 2009, 688). My definition of this ambidextrous way is somewhat different from that of Gibson and Birkinshaw (2004) and I highlight this argument as the second substantial contribution of this study. First, I change the underlying function from choosing which task to perform (Gibson & Birkinshaw 2004, 210) to a cognitive decision on how to best perform the task, so that it optimally supports both exploitation and exploration. In other words, the individual choosing the degree of exploitation exploration used in the task, and operationalizing it accordingly.

The rationale behind this argument proposed by this study is that, in particular, successful ambidexterity requires that each individual welcome and acknowledge the existence of duality between exploitation and exploration. Hence, having an ambidextrous mindset. Considering employee ambidexterity, I find support for my proposal from the works of Caniëls, Neghina, and Schaetsaert (2017) who identified that when an organization is empowering its employees, it enhances the employee's feeling of autonomy in selecting their working methods, which leads to a greater sense of intrinsic motivation and working in the most suitable way towards goal attainments. Furthermore, empowerment is to power the individuals and to grant decision-making autonomy, while also allowing access to strategic resources. They concluded that empowerment encourages individual-level exploration activities (Caniëls et al. 2017, 1101). Thus, I suggest that to fully permeate the organization, ambidexterity requires that each individual is empowered and able to apply the dualistic mindset in their everyday work and choose the proper degree of exploitation and exploration in the decision of how to perform their tasks.

Nonetheless, I argue that individuals nor the right context are not sufficient premises for ambidexterity alone. Furthermore, ambidexterity requires a holistic approach that in principle, contains each element the literature describes from the original theory, ultimately glued together with theories such as learning, absorptive capacity, and firm dynamic capabilities. In sum, ambidexterity is depicting the value capture as the performance from the relationship between its individuals and organization (Raisch et al. 2009, 688) when pursuing simultaneous and maximized exploitation and exploration containing external relationships (Kauppila 2010, 285-287). Moreover, it is the coherence of each task at each level that strengthens the re-iterating loop of ambidexterity (Andriopoulos & Lewis 2009, 708-709).

In conclusion, I have shown that organizational ambidexterity permeates the entire organization. Furthermore, it is developed from and expresses itself at both individual and organizational levels (Raisch et al. 2009, 692-693). Hence, this study suggests that

ambidexterity is the interplay between the organization and its individuals. Furthermore, I argue that ambidexterity requires that the individuals have the knowledge and ability, and the organization provides the learning and capabilities. Ultimately, resulting in being greater at an organizational level than the sum of the ambidexterity in its individuals (Raisch et al. 2009, 688). Thus, this study concludes that organizational ambidexterity is a meta-level capability including balanced and maximized exploitation and exploration, organizational learning, and dynamic capabilities that permeate the entire firm, eventually resulting in long-term successful performance and thus, sustainable competitive advantage. This conceptualization is further summarized and illustrated in the following subsection.

4.3 An integrative framework—Fusion Ambidexterity

A comprehensive conceptualization with dynamic elements of organizational ambidexterity has been called for (Kauppila 2010, 284; Raisch et al. 2009, 686). Hence, based on the literature review, I synthesized and integrated various streams of organizational ambidexterity theories. Several scholars stated how there had been very few attempts to cross-fertilize the concepts whereas, in reality, organizational ambidexterity is a multidimensional framework consisting of a combination of proposed ambidexterity forms (Andriopoulos & Lewis 2009, 708; Kauppila 2010, 284; Simsek 2009, 605). Thus, I drew a modern framework with breadth and depth that covers all the previously presented modes of organizational ambidexterity.

In other words, I respond to debates about the nature of organizational ambidexterity by building a model that (1) seeks conceptual clarity, (2) considers the presence of organizational tensions, and (3) presents organizational ambidexterity as a meta-level construct. While existing studies address ambidexterity from certain, mostly uni-dimensional and researcher-based, perspectives, as shown in Figure 11, I integrate these shared understandings into a more holistic and objectively built theoretical framework.

I define organizational ambidexterity as the operationalization of reciprocal intelligent organizational learning resulting from merged exploitation-exploration knowledge and the guidance of organizational strategic approach. Hence, I propose that organizational ambidexterity is a meta-level capability developed from the intelligent learning the organization maintains from its balanced and externally oriented exploitation and exploration activities, as well as from the dynamic capabilities the firm possesses to operationalize the intelligence.

ORGANIZATIONAL FUSION AMBIDEXTERITY

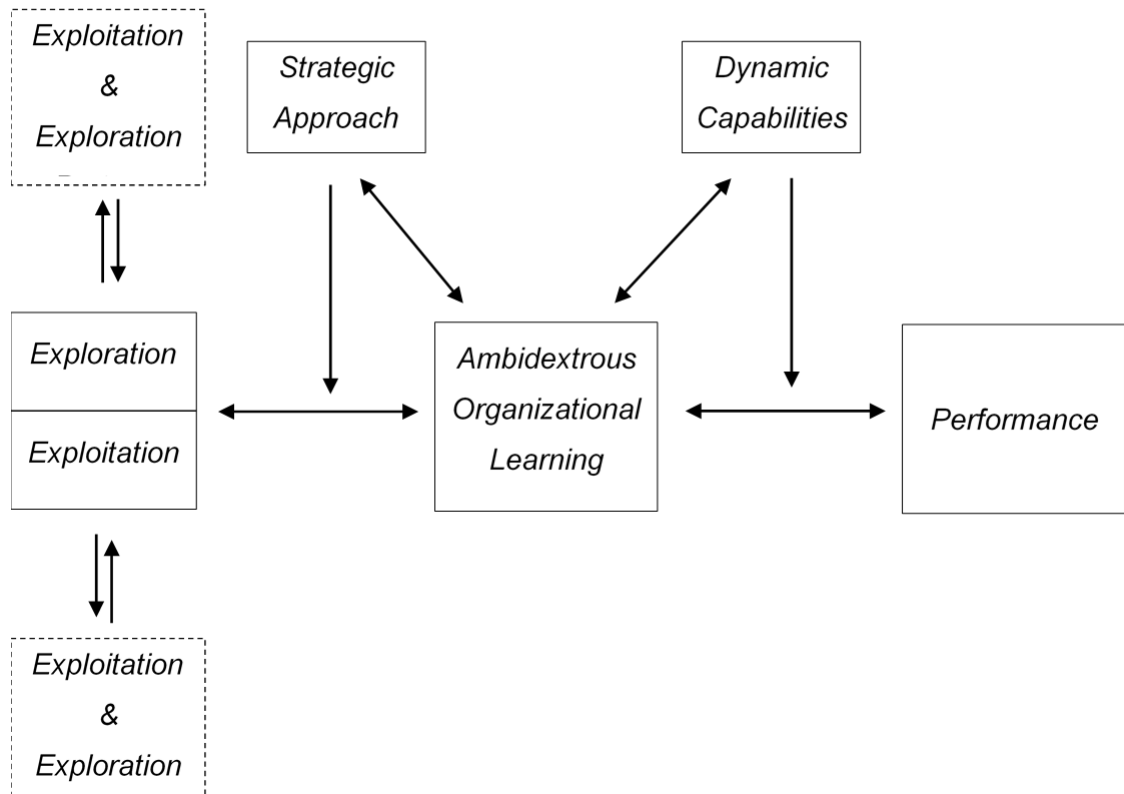


Figure 11. An integrative framework of Fusion Ambidexterity

Nevertheless, central differences to the previous literature are that in my framework the organizational learning acts as the central integrative and reciprocal link between exploitation-exploration activities, strategic approach, and the firm dynamic capabilities. Earlier literature has mainly focused on the exploitation and exploration activities as sequential, separated, or reciprocal, or the context they are embedded in, or a combination of these. However, instead of mechanistically explaining how ambidexterity can be achieved, I dived into the very essence of it and explained what organizational ambidexterity is.

In addition, in my framework the role of tensions is evident. However, in managing the tensions I adopted the duality view instead of the paradoxical lens as, I identified that in ambidexterity, the exploitation-exploration activities are coming together as one function following the logic of duality, instead of remaining separate yet simultaneous, as in the paradoxical view. Furthermore, as described in subsection 4.2.2, in my conceptualization, the tensions arise from merging the knowledge from exploitation and exploration. Herein, tensions represent a learning opportunity and hence, should not be disregarded,

reconciled, or avoided. In fact, this study argues that by maintaining a level of tensions the learning cycle is re-iterating and thus, maintained.

While previous literature on organizational ambidexterity has barely emphasized the role of strategy, I argue that the strategic approach is transforming learning into intelligence, and thus, it makes it a value-producing function. Without a strategic approach, learning may occur, but it may not serve the purpose of the organization. Moreover, though I also suggested that the permeability of the reciprocal learning in the organization is occurring via context and hence reaching individual tasks, I did suggest that instead of diving time between tasks as suggested by Gibson and Birkinshaw (2004), the individuals should decide the degree of exploitation and exploration they apply to their tasks, in other words, how best to perform their task so that it supports ambidexterity. Thus, I see that permeability is the function of a strategic approach and individual tasks.

Finally, the last addition to previous literature made by this study is that the ambidexterity capability is only developed and sustained when intelligent learning takes place and reciprocally contributes back to exploitation-exploration, strategic approach, and dynamic capabilities. Subsequently, acting as a source for sustainable competitive advantage. In conclusion, fusion ambidexterity enables long-term success and survival.

5 Discussion and reporting findings

Due to the ongoing discussion of whether the organizational ambidexterity theory is overly dispersed and incoherent, the objective of this study was to go back to the pedigrees of the concept and to examine the extent that the theory had departed from its original meaning of managing tensions arising from simultaneous exploitation and exploration. Furthermore, the dispersion of the theory, as suspected, was found largely to be due to the definition of ambidexterity. Moreover, the definition of ambidexterity does not consider the role of simultaneous and asymmetrical activities and the resulting tensions between the two activities. Hence, the role of tensions was lacking in the literature. In addition, the findings showed that the initial description of organizational ambidexterity was highly abstract, broad, lacking rigorous theoretical grounding, and entailing multiple, even conflicting, perspectives. However, the latter theoretical development had linkages to the various points presented in the original concept and it was concluded that they were presenting the concept of organizational ambidexterity in single-dimensional form, instead of a multidimensional dynamic construct. Thus, not seizing the correct conceptualization at a meta-level.

Moreover, despite the linkages between the various theories presented in the literature and each theory having a role in the integrative framework of organizational fusion ambidexterity, it appears as something fundamental to organizational ambidexterity was severely overlooked during the past two decades. Furthermore, the focus in the research has undoubtedly been on the exploitation and exploration activities, instead of what the concept has been initially said to be all about; managing tensions. Perhaps, on top of the definitional issue, this ignorance was due to early literature treating tensions as to be resolved and avoided, rather than integrated and managed. However, it is concluded in this thesis that reconciliation, or solving, tensions is not what ambidexterity is about, nor it is about trade-offs. Instead, it is about identifying the tension as an opportunity to learn and merging activities to gain learning, instead of trading them off. Similarly, it is argued that the tension does not arise from a paradox between exploitation and exploration, since in our view, in ambidexterity it is about the integratedness of exploitation and exploration. Hence, it is a duality, representing a coin that has one function but entails two sides, instead of the paradoxical Yin & Yang sign with two functions but representing one unit.

Nevertheless, this study extends the organizational ambidexterity literature by providing a richer understanding of the concept by bridging together the fragmented literature. Moreover, the role of tension is explained as the cognitive feature indicating a learning opportunity from the exploitation and exploration knowledge streams. Hence, managing

the tensions being the core of organizational ambidexterity, requires organizations to first organize these learning opportunities and second, to make sure the learning opportunities are constant. Furthermore, the starting point for ambidextrous organizational learning is diversifying the inputs for organizational knowledge. Moreover, the diversity can be produced and kept internally by utilizing mechanisms that produce new knowledge and hinder mutual learning, as well as enhanced externally by collaborating with external parties. With external collaboration, it is important to partner for both exploitation and exploration and both to exploit and to explore.

However, to utilize the knowledge, it has to be transformed into intelligence. In this study, it is proposed that the strategic approach as a duality is the key in diverting diverse knowledge into intelligence. In other words, the strategic approach enables the firm to be able to source value from diversified knowledge. Moreover, once there is a two-way loop built between exploitation-exploration knowledge streams, strategic approach as a duality, and organizational learning, continuous and intelligent ambidextrous learning is enabled. However, to produce a higher level of performance and long-term sustained success, it is proposed that dynamic capabilities transform ambidextrous learning into performance results. In other words, dynamic capabilities create synergy. Furthermore, the dynamic capabilities represent the system within the organization, among other factors, the processes, and procedures that steer the learning into behavior and hence, result in performance.

This study has two limitations. First, it guides to the extent that the organization is operating at a high velocity, constant change, and dynamic market conditions and environment. Thus, stable conditions might not benefit from the adoption of the model. Second, it may be useful for firms where long-term success and survival are important. Hence, it may require rather a longitudinal approach. In conclusion, I strongly emphasize the need for new thinking and comprehension in organizations. Changing mindsets and becoming fluid with available information should result in new thinking. Ultimately, identifying what could be, instead of what is, becomes vital.

Moreover, I have justified the theoretical argumentation of fusion ambidexterity by utilizing a rather practice-based dance performance story and examples. In essence, combining the perspectives of the bimanual interference and learning, the logic of duality in forming ambidextrous movements, the intelligence provided by the choreography, and finally, the aggregation of individual skills as dynamic capabilities, resulted in a new and further enhanced conceptualization of organizational ambidexterity. Furthermore, I believe that exploring these avenues further can enrich the theory of organizational ambidexterity. In

particular, as the concept of fusion ambidexterity is originated from the premises of individual capabilities, I see it imperative to research how organizations can develop individuals to embrace tensions and to enable an open mindset to diverse sources and types of knowledge, as well as to be able to generate it. Similarly, there is a necessity to identify the development needs of individuals so that they can decide how to best perform their tasks by optimally supporting both exploitation and exploration. Lastly, research should explore how strategy considers the duality of ambidextrous movements, as it is transforming knowledge into intelligence. Perhaps the concept of Circular Economy can provide interesting developmental avenues to further enhance my framework.

In conclusion, fusion ambidexterity is a meta-level capability harnessing the entire organization to produce strategic value. Furthermore, it is a continuously progressing capability enabled through the intelligent learning the organization maintains from its balanced and maximized externally oriented exploitation and exploration activities. Moreover, the intelligence is operationalized through the firm dynamic capabilities and hence, being the interplay of the organizational system and its individuals. As the elements of fusion ambidexterity are integrated and looped with two-way interaction, the capability is continuous and progressive. Thus, it enables long-term success and survival.

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