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Toward A Dynamic View of Organizational Ambidexterity: Promoting a Sense of Balance and Contingency

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ABSTRACT

A substantial body of work has examined how exploitative and exploratory learning processes need to be balanced within an organization in order to increase innovation, productivity, and firm performance. Since exploration and exploitation require different resources, structures, and processes, several approaches to balancing these activities have been suggested; one of which is simultaneous implementation which is termed ambidexterity. In this paper, we adjust the lens and suggest that equally crucial issues to resolve are (a) defining 'balance' and (b) determining criteria for assessing 'appropriate.' We argue that balance does not necessarily require identical proportions of exploration and exploitation and propose different mixes of these two processes leading to different ambidexterity configurations. Three specific ambidexterity configurations are examined in terms of their distinct contributions to strategic objectives. In addition we argue that several contingency factors (organizational and environmental) influence the relation between particular ambidexterity configurations and performance. Therefore an ambidexterity configurations need to change and evolve to achieve optimum performance over time. We contribute to emerging research in contingency theory, organizational learning, and strategic management.

Keywords: Multidimensional ambidexterity, Dynamic ambidexterity, Organizational contingencies, Environmental contingencies

JEL classification: D83

One of the most important competitive challenges firms face is to acquire external knowledge, and at the same time, integrate and institutionalize this knowledge within the organization (Crossan, Lane, & White, 1999; Huber, 1991; Fiol & Lyles, 1985; Levinthal & March 1993; Levitt & March, 1988; March 1991). March (1991) was one of the first researchers to explicitly define this problem as a tension between exploration (experimenting with new alternatives) and exploitation (refinement and extension of existing competencies). Both exploration and exploitation make vital contributions to organizational learning and firm performance, but they are achieved through different mechanisms and focused toward different ends. Despite these differences, exploration and exploitation have certain complementarities, and researchers have emphasized that the ability to maintain a balance between these activities is key for organizational survival and prosperity (March, 1991). One prominent mechanism for balancing these activities is ambidexterity (simultaneous pursuit of exploration and exploitation). Increasing interest in ambidexterity has prompted researchers to delve deeper into this construct. For example, Rothaermel and Alexandre (2009) and Lichtenthaler (2009) emphasize the importance of examining new types of ambidexterity by aligning internal and external knowledge management processes and technology. , Cao, Gedajlovic, and Zhang (2009) advise viewing ambidexterity with a more nuanced lens and unpacking it into balanced ambidexterity (where exploration and exploitation are equally pursued), and combined ambidexterity (where exploration and exploitation are pursued in different proportions).

This paper extends Cao et al.'s (2009) multidimensional view of ambidexterity and suggests that a prerequisite issue to resolve is clarifying the proportions of exploration and

exploitation that indicate balance has been attained. Three distinct configurations of ambidexterity are proposed in this paper. Further, we propose that particular organizational factors (specifically organizational life cycle and executive succession), as well as environmental factors (specifically environmental munificence, complexity, and dynamism) influence the ambidexterity configuration that is most appropriate for achieving superior performance at a point in time. Our paper moves toward answering two related research questions: Should different configurations that reflect unique forms of 'appropriate balance' be used to achieve organizational ambidexterity for different conditions? How do certain organizational and environmental contingency factors impact the dynamic nature of ambidexterity in organizations and its subsequent effect on firm performance? We contribute to the literature on organizational learning and ambidexterity in the following ways. First, we extend the rationale for arguing that balance does not necessarily require an equal distribution of exploration and exploration activities, and extend the idea different mixes of these two processes can be characterized as different ambidexterity configurations (as suggested by Cao, Gedajlovic, & Zhang, 2009). Second, we respond to Lavie, Stettner, and Tushman's (2010: 142) call to bring "conceptual clarity to determining differences between balance and ambidexterity." Third, we offer a contingency framework that enables firms to match the conditions they face with an evolving mix of exploration and exploitation activity. We propose that firms which are able to craft a contingent approach to managing exploration and exploitation will be more likely to attain persistent strategic success than firms which are unable to adjust their ambidexterity configuration.

A Need for Both Exploration and Exploitation

In his initial exposition, March defined exploitation as "refinement, choice, production, efficiency, selection, implementation and execution" and exploration as "search, variation, risk-taking, experimentation, play, flexibility, discovery, and innovation" (1991:71). Exploration is associated with learning gained through conscious and deliberate variation, experimentation, and challenging the status quo, while exploitation is associated with learning through local search, refining existing competencies, and building upon existing trajectories (He & Wong, 2004). Most scholars agree that exploration and exploitation require different structures, processes, and capabilities, making it difficult to pursue both processes simultaneously particularly when resources are scarce. However, although March (1991) asserted that exploration and exploitation are fundamentally incompatible, Gupta, Smith, and Shalley, (2006) suggested that certain resources such as knowledge and information can be quite infinite, and, if exploration and exploitation are not required to compete for limited resources, it is possible for them to coexist. This is especially relevant given that these two apparently disparate activities also are also somewhat symbiotic. For example, without exploration, organizations will not have the requisite new knowledge to exploit, and without exploitation, firms will not be able to implement what they learn and integrate it within an organization's knowledge base (Smith & Lewis, 2011). In recognition of this duality, studies have examined the need to achieve both exploration and exploitation simultaneously and a common conclusion is that despite the disparate pressures these two processes place on organizational capabilities, resources, and efforts at least a threshold level of *both* processes is necessary for a firm to thrive. Several approaches have been proposed for managing and achieving both exploration and exploitation processes, such as temporal separation (sequential shifts over time between exploration and exploitation),

ambidexterity (simultaneous or concurrent pursuit of exploration and exploitation via contextual and structural ambidexterity), and domain separation (exploration in one organizational domain, such as a functional domain, and exploitation in another domain, such as the structure domain, thus maintaining balance across domains) (Lavie, et al., 2010). As mentioned earlier, this paper focuses on the ambidexterity approach for managing the balance between exploration and exploitation.

Understanding Organizational Ambidexterity

Organizational ambidexterity has sometimes been seen as a paradox because it is conceptualized as a firm's ability to simultaneously manage interdependent and complementary, yet contradictory processes such as exploration and exploitation (Andriopoulos & Lewis, 2009; Smith & Lewis, 2011). A particularly important contribution from paradox thinking is the recognition that managers need to be aware of, accept, and strive to achieve the synergistic benefits of simultaneously maintaining disparate forces in their organization (Poole & Van de Ven, 1989; Smith & Lewis, 2011). However, recent research on the theory of paradox presents this perspective "as an alternative to contingency theory" (Smith & Lewis, 2011: 381). In contrast, we consider the paradox view to be a complement to contingency theory and argue that different resolutions to the paradox result in different ambidexterity configurations and the choice among them should reflect contingent factors in the organization and the external environment.

Ambidexterity builds on Duncan's (1976) proposal that organizations could manage trade-offs between conflicting demands by incorporating "dual structures" that differentially focus on alignment or adaptation. Ambidexterity has been discussed as a key driver of long term performance because a firm's ability to compete successfully in the long run depends on its

ability to jointly pursue both exploration and exploitation (Raisch & Birkinshaw, 2008). However, in order to be ambidextrous, organizations need to be able to concurrently reconcile internal tensions and conflicting demands (Raisch & Birkinshaw, 2008). Organizations have attempted to overcome the difficulties associated with the challenge of achieving balance in different ways. Two familiar approaches are developing business units with coherent yet quickly adjustable patterns of activity which is known as contextual ambidexterity (Gibson & Birkinshaw, 2004) and the separation of organizational units oriented toward one process or the other which is known as structural ambidexterity (Tushman & O'Reilly, 1996). These mechanisms offer alternative solutions to the fundamental problem of reconciling the need for different organizational structures, contexts, and strategies (Raisch & Birkinshaw, 2008) in order to achieve both exploration and exploitation. Given the challenges of implementing either approach, scholars have begun to investigate leadership characteristics that enable organizations to balance organizational contradictions and facilitate ambidexterity (Beckman, 2006; Lubatkin, Simsek, Ling, & Veiga, 2006; Raisch & Birkinshaw, 2008; Smith & Tushman, 2005).

Although scholars have elaborated upon the different modes and means of achieving ambidexterity (for example, through structural, contextual, or leadership mechanisms), what has not been resolved is consensus regarding what is meant by balancing exploration and exploitation in an ambidextrous way. Most scholars define ambidexterity in terms of simultaneously balancing competing processes such as exploratory and exploitative innovations, routine and non routine tasks, alignment and adaptability in business units, sustaining and disruptive innovations (Benner & Tushman, 2003; Gibson & Birkinshaw, 2004; Gupta et al., 2006; He & Wong, 2004; Jansen, Van den Bosch, & Volberda, 2006). There is consensus across these definitions that ambidexterity hinges on *simultaneously* managing two activities. What

remains unresolved is agreement on what is meant by balance. Some researchers such as Lubatkin et al., (2006) and Simsek (2009) suggest that ambidexterity is the ability to pursue both exploration and exploitation with equal dexterity. Although the notion that ambidexterity means equal adroitness is credible, It is important to question whether organizations that are successful at simultaneously managing exploration and exploitation are always required to attain these two activities in equal proportions. Perhaps, just as a balanced mix of flavors in a stew does not necessarily mean equal amounts of garlic and potatoes, and a balanced diet does not mean consuming equal proportions of carbohydrates and proteins, the balance of exploration and exploitation that leads to sustained strategic success may not depend on precisely equal investments, efforts, or achievements in terms of exploration and exploitation. Many symbiotic, mutually beneficial relationships do not demonstrate uniform levels of investment, activity, or outcomes. The focus instead is on maintaining sufficient levels of contribution from each entity to ensure that together they co-evolve and that the larger system thrives.

In order to fully understand ambidexterity, it is important to begin with March's original perspective (Lavie, et al., 2010). March (1991) argued survival and prosperity depend on managing an 'appropriate' balance of exploration and exploitation. If balance means equal amounts, then defining what is appropriate is straightforward and potentially tautological. The use of the word 'appropriate' implies that there are different options that firms could use; therefore a firm has to decide what would be suitable and fitting. ***Balance*** can be understood in two different ways -- as (a) the opposition of equal forces, or as (b) harmony or a state in which various parts form a satisfying and congruent whole and nothing is unduly emphasized at the expense of the rest. To date, most of the ambidexterity research has assumed the first definition of balance. We propose that the second definition is more consistent with the role exploration

and exploitation play in organizational achievements and therefore ***appropriate*** balance means that the proportions of simultaneously pursued exploration and exploitation fit both a firm's strategy and the external realities it faces. Attention to achieving an appropriate (not necessarily equal) balance and deliberately allocating suitable resources between exploration and exploitation to achieve desired outcomes will guard against a suboptimal split between exploration and exploitation. Firms that achieve appropriate balance are able to more fully capitalize on their resources and sources of competitive advantage without falling into various traps such as core rigidities, a success trap, a failure trap, or the dysfunctional trajectories of Danny Miller's (1990) Icarus Paradox in which success along a single dimension leads to 'deadly momentum.'

Consistent with this perspective, Lavie, et al. (2010) argued for increased recognition of ambidexterity as a multidimensional construct comprised of two very distinct sets of organizational activities. Building on this, Lavie, et al., explicitly suggest that sometimes "exploitation could be kept at a minimal, yet sufficient level, while all remaining resources could be invested in exploration" and that sometimes "exploration could meet some minimal threshold while the organization invests mostly in exploitation" (2010: 127). They also state that while some studies have emphasized equal proportions of exploration and exploitation activities as a requirement for superior organizational performance, other studies have departed from viewing the midpoint as optimum, and instead have allowed organizational and environmental factors to determine the desirable proportions of exploitative and exploratory activities needed to achieve a desirable balance (Gibson & Birkinshaw, 2004; Lavie, et al., 2010). Following this logic, ambidexterity is defined in the context of this study as – "***the ability to simultaneously pursue***

both incremental and discontinuous innovation and application using a mix of exploration and exploitation that best meets internal requirements and external conditions.

The means by which ambidexterity is realized in organizations also supports the idea that balance does not necessarily mean equal proportions of exploration and exploitation. Two approaches to balancing exploration and exploitation in organizations have dominated ambidexterity studies – structural ambidexterity and contextual ambidexterity. Structural ambidexterity is achieved by separating the diverse activities of exploration and exploitation into highly differentiated units with targeted structural integration (Tushman & O'Reilly, 1996; Lavie, et al., 2010). Organizations that use structural separation to achieve ambidexterity often have larger exploitative units and smaller explorative units (Benner & Tushman, 2003; Lavie, et al., 2010). This reinforces the idea of using varying proportions of the two activities to achieve effective and balanced ambidexterity. Contextual ambidexterity was originally conceptualized to underscore the importance of organizational context when studying alignment (exploitation) versus adaptability (exploration), (Gibson & Birkinshaw, 2004). A number of organizational factors – stretch, discipline, support, and trust -- further determine the ability to manage exploration and exploitation and the appropriate fulcrum for these two activities (Lavie, et al., 2010). Therefore, neither structural nor contextual ambidexterity appear to require exploration and exploitative activities to necessarily occur in equal proportions.

Three Configurations – Different Proportions and Different Synergies

Building on Cao et al.'s work, we propose that ambidexterity can be either symmetrical or asymmetrical. Symmetrical ambidexterity is an *equal* mix of exploration and exploitation while asymmetrical ambidexterity provides an *uneven blend* and manifests itself in two forms – exploration-dominant and exploitation-dominant. Distinguishing three forms of ambidexterity

enables a contingent approach to managing exploration and exploitation. With all three configurations an organization engages simultaneously in exploration and exploitation (thus remaining true to the original definition of ambidexterity), yet different configurations enable firms to achieve an 'appropriate' fit with organization interests and external realities. Each configuration generates a unique pattern of synergistic integration which nurtures the similarities and accommodates the differences in the two sets of activities (Smith & Lewis, 2011). Figure 1 depicts the three ambidexterity configurations and reiterates that firms with extremely low levels of exploration and exploitation are not considered to be ambidextrous (He & Wong, 2004).

INSERT FIGURE 1 ABOUT HERE

Asymmetric Ambidexterity: Exploration-Dominant Configuration

An exploration-dominant ambidexterity configuration is characterized by a symbiotic and synergistic integration that deliberately creates high levels of exploration coupled with modest levels of exploitation. Firms with exploration-dominant patterns deliberately veer away from familiar certainties to look for unconventional sources of value creation and novel products and processes that set a fresh agenda for the competitive field. Firms pursuing this pattern expend the majority of their resources and efforts identifying path-breaking possibilities, exploring potentially disruptive technologies (D'Aveni, 1999), and searching for 'blue ocean' opportunities that create new and uncontested markets (Kim & Mauborgne, 2005). However, both exploration and exploitation must take place to ensure that a firm benefits from the new opportunities that are found and that they do not fall into the "failure trap". A failure trap occurs when ongoing routines are severely disrupted in an effort to capitalize on new opportunities without sufficient resources to implement the new activities (Auh & Menguc, 2005; Levinthal & March, 1993). The exploration-dominant configuration directs organization attention toward generating a large

number of new ideas, while exploitation activities provide balance by emphasizing initial commercialization activities such as creating infrastructures, and restructuring, rebundling, and leveraging the firm's resources (Sirmon, Hitt & Ireland, 2007). Although the strategic emphasis is on creating broad and continuous product development and market domain elaboration, maintaining sufficient exploitation activities to complement exceptionally strong exploration capabilities is the hallmark of an effective exploration-dominant pattern. Ensuring that exploitation is focused rather than neglected, used selectively rather than in a shotgun manner, and is concentrated on those areas where execution can be most fully leveraged is an antidote to potential problems. An exploration-dominant configuration is consistent with the way in which prospector firms approach their entrepreneurial problem in order to retain broad and continuous product development and an evolving market domain (Miles, Snow, Meyer, & Coleman, 1978).

Apple Corporation and its continuous innovations (especially the first generation iPod) is a good example of this type of ambidexterity. Sony Music Entertainment also offers an example of an exploration-dominant enterprise. Sony devotes enormous energy and resources to exploring and experimenting with new artists, new music styles, new media, and new venues. The business is able to maintain a continuous, self-reinforcing cycle that pushes new artists toward broad popularity by maintaining sufficient exploitation competencies to capitalize on its enormous exploration prowess across genres, geography, and heterogeneous customer tastes.

Asymmetric Ambidexterity: Exploitation-Dominant Configuration

An exploitation-dominant ambidexterity configuration is characterized by a synergistic and symbiotic integration that deliberately creates high levels of exploitation coupled with modest levels of exploration. An exploitation-dominant pattern focuses on implementing ideas that are already available and on generating new ideas from internal sources of innovation.

Criteria signaling successful exploitation outcomes include consistency, reliability, timely feedback, and immediate returns to the firm. Exploration activities tend to stay within established technology, market, and competitive boundaries, searching for solutions that extend the existing stock of knowledge to further capitalize on well-known and demonstrated competencies. Within exploitation-dominant patterns, exploration frequently takes a form of learning-in-action in which organizations combine experience, intelligence, and experimentation based on practical and immediate needs (Garvin, 2000). Firms with an exploitation-dominant ambidexterity configuration are particularly likely to engage in evidence-based decision making (Pfeffer & Sutton, 2006) and to adopt capability-enhancing innovations (D'Aveni, 1999) which capitalize on their combinative capabilities (Kogut & Zander, 1992).

Under this ambidexterity configuration, exploration activities are often directed toward process improvements designed to stabilize resource allocation processes and augment the current technology trajectory (Benner & Tushman, 2003). Exploration helps ensure that a firm does not fall into the "success trap" which occurs when an excessive emphasis on exploitation cripples a firm's adaptive capabilities (Gupta et al., 2006, Levinthal & March, 1993; March, 1991). Organizations that fall into this trap reinforce and refine the behaviors, resource patterns, and interactions associated with their core competence to the point that they become core rigidities (Leonard-Barton, 1992). An exploitation-dominant configuration fits well with a defender strategy (Miles, et al., 1978) by allowing a firm to aggressively maintain its competitive position in existing domains and achieve incremental growth within a defined area of expertise. These firms expend a majority of their financial, intellectual, and other resources using what they know to generate continuous incremental improvements, replicate and leverage best practices, and to maintain high reliability and consistency in their operations. The old adage, "if it ain't

broke, don't fix it" applies to this configuration. Nike's ambidexterity configuration illustrates an exploitation-dominant pattern. The Nike brand has been proficient in capitalizing upon and extending its core competencies (designing shoes and sports apparel). However, Nike has also been aware of environmental changes and emerging customer requirements, and this has led to the development of eco-friendly designs (for example, Air Jordan XX3), reduced toxins, and recycled materials (through the development of Nike grind designed for sustainability), shoes that mimic the experience of running barefoot, and footwear that is compatible with the ipod.

Symmetrical Ambidexterity: Parallel Exploration-Exploitation Configuration

The symmetric exploration-exploitation ambidexterity configuration is characterized by a symbiotic and synergistic integration that maintains evenly matched contributions from exploitation and exploration. The symmetric exploration-exploitation pattern reflects the conventional assumption underpinning most studies of organizational ambidexterity. As with asymmetric configurations firms engaging in this mix experiment with creative possibilities to generate new opportunities, effectively implement the ideas that are generated, and strive to improve established capabilities. However, the emphasis in this configuration is on leveraging the interaction between exploration and exploitation rather than optimizing either of the two activities. Interaction between exploration and exploitation creates synergies lead to additional value for the organization. Gilbert (2005) found that engaging in comparable degrees of exploration and exploitation simultaneously could increase shared selling space in the market (Smith & Tushman, 2005). For example, by introducing soft contact lenses, Ciba vision created an increase in demand for their conventional lenses too. Similarly, USA Today realized that their online business also increased readership across their traditional newspaper platform (Gilbert, 2005; Smith & Tushman, 2005).

This type of equilibrium-oriented dynamic tension is similar to the entrepreneurial, engineering, and administrative problems encountered by firms adopting an analyzer strategy (Miles, et al., 1978). The primary liability for firms with symmetrical ambidexterity is that they lose their productive equilibrium and creative tension becomes dysfunctional conflict resulting in what we term a 'burnout trap.' Organizations experience a burnout trap when their concern with maintaining matched exploration and exploitation overshadows their attention to the contributions from each set of activities. When this occurs, an organization's 'learn-to-burn' rate (Ghemawat, 1991) becomes misaligned and dysfunctional. Similar to the competing forces of differentiation and integration, organizations with a symmetrical ambidexterity configuration experience relentless pressure to assess and actively manage diverse objectives. Appropriate balance in a symmetrical pattern follows many of the criteria offered by Hamel and Prahalad (1993) for leveraging a variety of organizational resources and capabilities. The need for continuous and often mutual adjustments to realign search, experimentation and risk taking with implementation, refinement, and efficiency depletes resources and can dilute a clear sense of purpose. When offsetting investments in exploration and exploitation become mindless or arbitrary rather than deliberate and well-reasoned, a firm falls into the burnout trap.

Symmetrical ambidexterity can create valuable strategic benefits. Matched exploration and exploitation extends the range and variety of opportunities to stretch and leverage resources and competencies to capitalize on emerging conditions (Hamel & Prahalad, 1993). Dynamic tension between exploration and exploitation also contributes to organizational resilience and strategic agility (Lengnick-Hall & Beck, 2009). An ability to both create new knowledge and effectively use what it knows enables a firm to develop dynamic capabilities (Eisenhardt & Martin, 2000), capitalize on speed (D'Aveni, 1999), and to build its absorptive capacity across a

broad spectrum of activity (Cohen & Levinthal, 1990). Amazon and its 'Kindle' exemplifies symmetrical ambidexterity. While Amazon offers probably the largest selection of books (which is an established core competency of the company), Jeff Bezos, founder and CEO of Amazon revolutionized the way people read by introducing Kindle - a wireless electronic reading device that can download, store and display an almost limitless supply of books, magazines and other material, that can be conveniently carried around the globe, thus reducing the need to shop for books at stores.

> *Proposition 1*: Organizations can engage in a symbiotic and synergistic integration of exploration and exploitation through three distinct configurations a) symmetrical (matched) exploration-exploitation ambidexterity, b) asymmetrical exploration-dominant ambidexterity, and c) asymmetrical exploitation-dominant ambidexterity.

The following table summarizes these proposed ambidexterity configurations.

INSERT TABLE 1 ABOUT HERE

Dynamic Nature of Ambidexterity

Most research on ambidexterity appears to assume that the relative proportions of exploration and exploitation activities within an organization are not only approximately equal but relatively static. Raisch, Birkinshaw, Probst, and Tushman (2009) raised some thought provoking questions regarding these assumptions. They argue that although ambidexterity is a means to pursue both exploration and exploitation simultaneously, organizations need to continuously adjust their patterns of behavior in order to deal with the varied range of conditions they face over time. Following this logic, we suggest that organizations will benefit from changing and modifying their ambidexterity configurations to achieve appropriate fit with organizational and environmental conditions as these factors shift. By fit, we mean designing an

effective alignment between various strategic choices and the context and structure of an organization (Drazin & Van de Ven, 1985). Fit is expected to contribute to performance.

The empirical evidence for the ambidexterity-performance relationship is mixed (Raisch & Birkinshaw, 2008). Gibson and Birkinshaw (2004) found that ambidexterity has a positive effect on performance at the business unit level. Lubatkin, et al. (2006) also found support for the ambidexterity-performance relationship in their study of small and medium sized firms. However, Venkatraman, Lee, and Iyer (2007) failed to find empirical support for the ambidexterity hypotheses. We propose that these equivocal results might be explained by using a configurational perspective on ambidexterity, and adopting a contingency theory lens. Specifically, we propose that more consistent results regarding the ambidexterity-performance relationship might be achieved if organizations select and adjust ambidexterity configurations to fit certain contingencies, thus highlighting the dynamic nature of ambidexterity. To demonstrate this, we discuss two specific *organizational contingencies* (stages of an organization's development and CEO succession patterns), and three *environmental contingencies* (munificence, environmental complexity, and environmental dynamism). These ideas are illustrated in Figure 2.

INSERT FIGURE 2 ABOUT HERE

Ambidexterity and the Organizational Life Cycle

The organizational life cycle provides a rich context for demonstrating the dynamic nature of ambidexterity. The underlying logic is that as the stages of an organization's life cycle change, so do the strategies and structure of the organization (Chandler, 1962; Jawahar & McLaughlin, 2001). Since pressures, threats, and opportunities in the internal and external environment vary with life cycle changes, it is reasonable to expect the contributions from

exploration and exploitation likewise to shift in importance as an organization evolves. Following Vera and Crossan (2004), we concentrate on the four stages of the organizational life cycle: birth, growth, maturity, and renewal.

Birth and growth stages of development

During the initial stages of development, organizations focus on attaining capital, entering relevant markets, and gaining support from suppliers. Their strategy is often built on innovation and creativity in order to increase the potential for long term returns (Jawahar & McLaughlin, 2001). Start-up ventures need to be prepared to combat a variety of competitive forces which require a range of strategic initiatives. As the organization grows there is greater concern with managing increasing demand and stabilizing production. At the same time firms need to make significant new investment in order to maintain or improve their market position (Jawahar & McLaughlin, 2001). Growth prompts concern with expanded product lines, innovation, boundary spanning activities, and technical specialization (Baird & Meshoulam, 1988). Particularly at early stages of development there is a strong incentive for the firm to remain sensitive to changing customer expectations, but at the same time to effectively select, refine, and exploit current capabilities. These pressures capture the need to engage in high levels of both exploration and exploitation. During early life cycle stages, a system of checks-and-balances is often needed to ensure legitimacy as well as growth. A symmetrical ambidexterity configuration helps ensure a broad repertoire of diverse knowledge and skills is available and ready to use within the organization.

> Proposition 2a: Organizations that rely on a symmetrical exploration-exploitation ambidexterity configuration during their birth and growth stages will exhibit superior firm performance.

Maturity stage

During the maturity stage organizations typically emphasize increasing production efficiency. Growth slows in existing markets and organizational attention shifts toward opportunities to create economies of scale and achieve steady and predictable profits (Cameron & Whetten, 1981). Strategic persistence, defined as "the extent to which a firm's strategy remains stable over time" (Finkelstein & Hambrick, 1990: 487), creates advantage from refining and enhancing core competencies. Firms tend to stick to strategies that have brought success in the past. Although overconfidence and risks of falling into the 'success trap' increase (Jawahar & McLaughlin, 2001), primary strategic gains come from relentless incremental innovations to the products that have been accepted by the market. Exploration activities concentrate on refining the firm's understanding of customer expectations in order to enhance existing products rather than on creating radical innovations. During maturity, firms that continue to explore new opportunities at a high rate may forego the ability to fully leverage and capitalize upon the capabilities and products they have established. An asymmetric exploitation-dominant ambidexterity configuration augments the emphasis on capability enhancement present during the maturity stage of the life cycle.

> Proposition 2b: Organizations that rely on an asymmetric exploitation-dominant ambidexterity configuration during their maturity stage will exhibit superior firm performance.

Renewal stage

The renewal stage entails "a quantum shift in strategic thinking and organizational culture" (Acar & Winfrey, 1994: 165), a timely change in managers' mental models when faced with environmental changes (Barr, Stimpert, & Huff, 1992), shaking off organizational inertia (Dougherty, 1992; Barr, Stimpert, & Huff, 1992), and engaging in higher-order learning (Acar &

Winfrey, 1994; Barr, Stimpert, & Huff, 1992; Daugherty, 1992). Renewal requires a focus on product innovation (Daugherty, 1992). Often during this stage an organization needs to fundamentally reevaluate its strategic posture, because transition into the renewal stage is often triggered by the loss of demand for the products that have traditionally brought a firm success. Declining sales indicate the danger of slipping into decline which can only be overcome by proactively attempting to build a new market (Jawahar & McLaughlin, 2001). Renewal requires the restoration of intense innovation and creativity. An organization's center of gravity is often redefined. Reinvention requires a conscious effort to deliberately veer away from familiar certainties, while searching for 'blue ocean' opportunities that create new and uncontested markets (Kim & Mauborgne, 2005). An asymmetric exploration-dominant ambidexterity configuration fits the innovation requirements present during organizational renewal.

> Proposition 2c: Organizations that rely on an asymmetric exploration-dominant ambidexterity configuration during their renewal stage will exhibit superior firm performance.

Two caveats are important to note. First, once a firm undergos successful renewal, it could revert to an earlier stage of the organizational life cycle (for example the growth stage). A process of "creative destruction" sets the stage for a new cycle of birth and growth (Vera & Crossan, 2004). Second, firms that adopt strict defender, prospector, or analyzer strategy configurations (Miles et al., 1978) may not follow typical life cycle stage patterns.

Ambidexterity and executive succession

A basic tenet of strategy research is that top executives, including the CEO and other members of the top management team (TMT), play a dominant role in directing and implementing corporate strategy (Hambrick & Mason, 1984). Several studies have begun to examine the role of strategic leadership in organizational learning and ambidexterity (Jansen,

George, Van den Bosch, & Volberda, 2008; Jansen, Vera & Crossan, 2009; Smith & Tushman, 2005; Vera & Crossan, 2004). Leadership mechanisms enable TMTs to reconcile the tensions between knowledge capacities (Raisch & Birkinshaw, 2008). This is often accomplished through dynamic resource shifts orchestrated by top management (Floyd & Lane, 2000; Gibson & Birkinshaw, 2004). We suggest that CEO succession is another important organizational contingency whereby changes in the senior management team introduce the potential for major changes in organizational strategies. CEOs are selected and tasked with achieving targeted performance goals. Often, especially in instances of outsider and contender successions, there is also a change in the composition of the top management team. These changes introduce new perspectives and different priorities (Virany, Tushman, & Romanelli, 1992). We examine three types of CEO succession – outsider CEO succession, insider-follower CEO succession, and insider-contender CEO succession.

Outsider CEO succession

A common reaction to periods of poor performance is the dismissal of the incumbent CEO, and the appointment of a CEO from outside the organization as a successor (Kesner & Sebora, 1994). Despite the disadvantages they face in bringing about strategic change (such as alienation of the other TMT members and lack of firm-specific knowledge), hiring external CEOs is a common occurrence when performance has been declining. An outsider CEO is assumed to be more aware of external conditions, and therefore able to improve performance through better alignment between the firm and its environment (Shen & Canella, 2002; Viranyi, et al., 1992). Second order learning which involves a shift in core assumptions, and a break from history and precedent, is common with external succession (Virany, et al., 1992). In part, this is due to the external networks the new CEO introduces. These new contacts increase information

and experience heterogeneity, and potentially change the organization's competency base (Virany, et al., 1992). New information and capabilities encourage radical changes. Hiring new executives typically prompts a re-composition of the top management team, and this generates a repertoire of new ideas. Combined, the larger pool of competencies encourages exploitative efforts in complimentary domains and enables current application efforts to be leveraged efficiently (Cao et al., 2009). An exploration-dominant ambidexterity configuration complements the revitalization efforts typically undertaken with outsider CEO succession.

> Proposition 3a: Organizations that rely on an asymmetric exploration-dominant ambidexterity configuration in the event of an outsider CEO succession (coupled with executive turnover) will exhibit superior firm performance.

Insider-follower CEO succession

The assumption in most CEO succession research is that insider-follower successors are appointed following a predecessor's ordinary retirement and when firm performance is strong. This pattern is often termed an heir-apparent succession because the predecessor has groomed the new CEO to follow in his or her footsteps, and the successor's mandate involves maintaining strategic continuity rather than initiating change (Brady & Helmich, 1984; Datta & Rajagopalan, 1998). Close connections and similarities to their predecessors, strong influence and socialization by the outgoing CEO, and shared strategic perspectives (Shen & Canella, 2002) may limit the willingness of a new CEO to initiate change in the organization. This succession pattern is often seen as a mandate for continuity (Shen & Cannella, 2002). The impetus in this instance is to incrementally update established routines, and to improve and build existing competencies with a fixed set of decision premises (Virany, et al., 1992). It is important to recognize that current competencies may rely on exceptional exploration or excellent exploitation capabilities. An insider-follower succession choice typically occurs if a firm's performance is on a positive

trajectory or, at least considered adequate. Logically, if performance below expectations, the succession strategy would reflect an acknowledged need for change. Since strong performance can take place under any of the three ambidexterity configurations, the expectation is that the ambidexterity configuration currently in use will continue to guide a firm's strategy. In other words, the established ambidexterity configuration, whether it is symmetric or asymmetric, will be retained when the new CEO is an insider-follower.

Executive turnover that takes place after a follower succession typically consists of ordinary retirements contributing to a smooth transition to a new top management team (Shen & Canella, 2002). This reinforces the message of continuity and is unlikely to lead to changes in the firm's strategy given the pervasiveness of institutionalized agreement within the management team (Virany, et al., 1992). Even if the new CEO sees a need to make changes in the team, he/she is likely to select new executives that reflect the prevailing logic of the organization (Hambrick & Mason, 1984). With no change in strategic orientation, the current ambidexterity configuration is expected to continue to meet organizational needs.

> Proposition 3b: Organizations that rely on continuation of the current ambidexterity configuration in the event of an insider-follower CEO succession (coupled with executive continuity) will exhibit superior firm performance.

Insider-contender CEO succession

Insider CEO succession does not always signal a desire to maintain strategic continuity. Based on the power circulation theory of control (i.e., instability and contested executive control over the corporation (Ocassio, 1994)), Shen and Canella (2002) suggest that at times incumbent CEOs face power contests initiated by other top level executives. Insider succession following a CEO's dismissal may be the result of a successful internal power contest against the incumbent CEO by a rival executive. This type of succession is termed insider-contender succession (Shen

& Cannella, 2002) and generally occurs when a firm has exhibited periods of poor performance and the challenger has convinced the board of directors that he or she can implement a different and viable strategic initiative that restores high performance (Ocasio, 1994; Shen & Cannella, 2002). The contender CEO will likely be given a mandate to initiate strategic change (Shen & Cannella, 2002). Since the new CEO was not selected and groomed by the dethroned CEO he/she may be able to avoid being 'stale in the saddle' (Miller 1991). Insider-contender CEOs often have the support of the board of directors as well as access to firm-specific knowledge. This helps them formulate and initiate effective strategic changes in a timely manner, while making sure that important established competencies of the organization are not destroyed (Shen & Canella, 2002; Virany, et al., 1992). An insider-contender CEOs will be in the unique position of enabling both first order learning (which involves making incremental innovations and modest changes to existing competencies), as well as second order learning (which involves making architectural or discontinuous innovations and fundamental changes in products or systems). Both are essential for a firm to flourish (O'Reilly & Tushman, 2004; Virany, et al., 1992). These strategic activities require a firm to envision a new future as well as an ability to select, refine, and exploit current capabilities (He & Wong, 2004).

The propensity to alter the executive team is an important distinction between insider-contender succession patterns and insider-follower succession patterns. A contender CEO has firm-specific knowledge and can take advantage of existing systems and social relationships (because of their previous positions in the organization), and at the same time can incorporate more heterogeneous expertise through carefully chosen executive turnover. These factors enable a contender CEO to assess the capabilities of senior management and restructure the top management team to suit the required strategic changes. Undergoing insider-contender CEO

succession creates a great deal of organizational stress. While fundamental changes are often needed, it is equally important not to squander valuable capabilities and relationships. Exploration to identify viable new paths and exploitation to capitalize on established competencies are required. This suggests that a symmetrical ambidexterity configuration offers the best fit with insider-contender CEO succession.

> Proposition 3c: Organizations that rely on symmetrical exploration-exploitation ambidexterity configuration in the event of an insider-contender CEO succession (coupled with selectively orchestrated executive turnover) will exhibit superior firm performance.

Ambidexterity and the Environment

Three specific environmental dimensions have been shown to have a strong influence on organizational survival: *environmental munificence, environmental dynamism*, and *environmental complexity* (Dess & Beard, 2984; Sharfman & Dean, 1991; Walters, Kroll & Wright, 2010). These environmental conditions have been found to influence the ambidexterity-performance relationship as well (Jansen, et al., 2006). For example, organizations that operate in environments characterized by high dynamism and competition have been shown to engage in simultaneous (ambidextrous) pursuit of exploration and exploitation rather than to rely on temporal solutions (Auh & Menguc, 2005; Floyd & Lane, 2000; Jansen, et al., 2006). Examining the effect of environmental contingencies with respect to different ambidexterity configurations may help explain some of the inconsistent findings in the ambidexterity-performance relation.

Environmental munificence

Environmental munificence measures the ability of a given environment to support sustained growth (Dess & Beard, 1984). A munificent environment provides abundant resources and opportunities, which in turn increases "strategic degrees of freedom" through the accumulation of slack within an organization (Hambrick & Finkelstein, 1987; Li & Tang, 2010;

Wiersema & Bantel, 1993). Slack resources enable an organization to devote substantial efforts towards simultaneous pursuit of exploration and exploitation. Thus, symmetrical ambidexterity is facilitated by a resource-rich environment (Gupta et al., 2006) since resource constraints are one of the most substantial challenges to organizational ambidexterity (March, 1991). A lack of environmental munificence, in contrast, creates stressful conditions for the firm. This stress is suggested to lead to formalization and centralization within the organization coupled with decreased information processing, which often results in rigid problem solving, adherence to traditional routines, and decisions based on outdated information and perspectives (Wiersema & Bantel, 1993). Environmental scarcity, therefore, tends to force organizations to choose between emphasizing exploration or exploitation, and consequently encourages asymmetric ambidexterity.

> Proposition 4a: Organizations that rely on a symmetrical exploration-exploitation ambidexterity configuration under conditions of high environmental munificence will exhibit superior firm performance.

> Proposition 4b: Organizations that rely on an asymmetric ambidexterity configuration under conditions of low environmental munificence will exhibit superior firm performance.

Environmental complexity

Environmental complexity defines the extent to which a firm's environment is competitive and heterogeneous (Aldrich, 1979; Dess & Beard, 1984; Li & Tang, 2010). Hambrick and Finkelstein (1987) suggested that when there are fewer competitors, rules are relatively well established and this will inhibit the organization from making certain radical changes. Alternatively, in more complex markets, there are fewer restrictions and firms will be able to initiate changes and explore a more extensive range of activities (Dess & Beard, 1984). Complex environments also require greater information processing and stronger cognitive

abilities to understand how various environmental sectors interact (Dess & Beard, 1984; Walters, et al., 2010). This is particularly relevant for organizations competing in industries with many different sectors. Three factors contribute to creating high levels of environmental complexity: technical complexity, product diversity, and geographic dispersion (Sharfman & Dean, 1991, Walters, et al., 2010). Technical complexity (the degree to which technical requirements characterize an industry) generates environmental complexity because a greater range of knowledge is required to participate successfully in the industry. Product diversity creates complex environments because a broader range of critical success factors must be understood and mastered, and interdependence must be managed across product infrastructures and input requirements. Geographic dispersion of operations contributes to environmental complexity it requires organizations to adjust their mental maps to take into account increasing number of diverse suppliers, customers, and competitors (Gripsrud & Gronhaug, 1985; Walters, et al., 2010).

Success in highly complex environments often requires a broad strategic action repertoire and the ability to move quickly and decisively (Ferrier, 2001). Exploration tends to generate a wide range of alternatives, while exploitation facilitates quick implementation. Thus, a symmetrical ambidexterity configuration with high levels of both exploration and exploitation is needed in extremely complex environments. Less complex environments are generally more predictable and enable organizations to benefit from more specialized and concentrated efforts that capitalize on capability enhancement (D'Aveni, 1999). This suggests that an asymmetric exploitation-dominant ambidexterity configuration would be well suited to less complex environmental settings.

> Proposition 4c: Organizations that rely on a symmetric ambidexterity configuration under conditions of high environmental complexity will exhibit superior performance.

Proposition 4d: Organizations that rely on an asymmetric ambidexterity configuration under conditions of low environmental complexity will exhibit superior performance.

Environmental dynamism

Environmental dynamism refers to changes that occur in the task environment due to an absence of established prior patterns (Dess & Beard, 1984). These changes are typically difficult to predict and increases the need for top managers to be able to adjust their perceptions of the environment (Walters, et al., 2010; Wiersema & Bantel, 1993). In stable environments, a firm's decision making requirements are standardized, and exploitation of established capabilities is emphasized (Karaevli, 2007; Walters, et al., 2010). However, established routines and practices are often detrimental to firm performance in dynamic environments (Walters, et al., 2010).

Two important dimensions that make up environmental dynamism are market dynamism (high variation in demand for industry outputs (Walters, et al., 2010)) and technological dynamism (frequent industry innovation (Dess & Beard, 1984)). As these two forces increase, "the need for new capabilities may emerge, requiring radically different knowledge" (Zahra & Filatotchev, 2004: 886) also grows. Increased information processing and analysis is needed to reach a satisfactory performance level (Dess & Beard, 1984). Rapidly changing technology may transform an entire industry, yet core rigidities coupled with an established dominant logic may hamper an organization's response to the new realities. Firms that operate in highly dynamic environments need to be able to rapidly adjust their strategies, tactics, and resources. In addition, environmental dynamism limits the ability of firms to be able to capitalize on limited, incremental or process innovations since radical change is common. However, firms operating in slower-paced and more predictable environments are able to benefit from competence-enhancing, incremental changes that build on established capabilities.

Proposition 4e: Organizations that rely on an asymmetric exploration-dominant ambidexterity configuration under conditions of high environmental dynamism will exhibit superior firm performance.

Proposition 4f: Organizations that rely on an asymmetric exploitation-dominant ambidexterity configuration under conditions of low environmental dynamism will exhibit superior firm performance.

DISCUSSION AND CONCLUSIONS

This paper proposes a dynamic and contingent approach to understanding the need for an organization to simultaneously achieve both exploration and exploitation in order to survive and thrive. Based on March's (1991) call for an 'appropriate balance' between exploration and exploitation we propose at least three different types of ambidexterity configurations: (1) A symmetric configuration in which exploration and exploitation make comparable contributions, (2) an asymmetric exploitation-dominant configuration in which established capabilities maintain prominence, and (3) and an asymmetric exploration-dominant configuration in which new opportunities drive a firm's strategic agenda. Each of these configurations presents a distinct outcome pattern. We propose that the question of balance should hinge on the strategic contribution that is needed from the symbiotic and synergistic interactions of these two processes in order to fit organizational and environmental contingencies. This is a departure from the emphasis on the inputs to these two learning processes that has been the focus of much previous research. There is general agreement that exploration and exploitation are symbiotic in that both are considered vital for organizational success. What we believe has been overlooked is the different types of positive synergy that can be derived from particulat combinations of exploration and exploitation. A focus on the potential contribution from different ambidexterity configurations suggests that organizations would benefit from adopting a contingency perspective and adjusting the relative emphasis on exploration and exploitation as the firm

evolves and as the organization's leadership undergoes various types of. In addition, since the benefits and liabilities of a particular ambidexterity configuration are expected to vary with differences in environmental conditions, the choice of which configuration to adopt may also benefit from considering environmental contingencies.

Two contributions from this paper have particularly important implications for future research (1) recognition that there is a not a uniform mix of exploration and exploitation that signals organizational ambidexterity, and (2) understanding the dynamic and contingent nature of design choices regarding exploration and exploitation configurations. Viewing ambidexterity in this way and seeing appropriate balance as contingent on a number of organizational and environmental factors raises a new set of questions for researchers and managers.

First, as with many organization design features, different contingencies argue for different designs. For example, during the maturity stage of its life cycle, we propose an organization would benefit from an exploitation-dominant configuration. However, if that same firm operates in a highly dynamic and complex environment, an exploration-dominant configuration would offer the strongest fit. This is not unlike the design challenge faced by a firm with an integrated process technology (Thompson, 1967) that operates in a highly uncertain external environment (Lawrence & Lorsch, 1967). Clearly there is not a single, easy to determine optimal design that considers all relevant contingencies. An important question to resolve is which contingent relations should have priority. If the firm adopts an exploration-dominant configuration to facilitate a broad range of strategic responses to dynamic environmental conditions, its ability to achieve efficiency and generate competence-enhancing innovations is hampered. If, on the other hand, the firm adopts an exploitation-dominant configuration to leverage and capitalize on established capabilities, it increases its vulnerability

to unpredictable environmental jolts. If the firm tries to hedge its bets by adopting a symmetrical configuration it may forego the advantages of either quick responsiveness or capability leveraging. We suspect that as with other organization design contingencies, the answer will vary by firm and depend on other elements of a firm's strategy and resource position, but we argue that asking the question is an important step in the right direction.

Second, all of the contingencies we discussed are dynamic. We do not contend that these are an exhaustive list of relevant contingencies, but they do illustrate three different sources and types of change that are expected to have important implications for a firm's choice of ambidexterity configuration. A firm's life cycle development is a somewhat predictable, evolutionary process governed substantially by internal choices and priorities (Chandler, 1962; Vera & Crossan, 2004). Environmental munificence, complexity, and dynamism are largely a consequence of iterative and difficult to control interactions across external actors (Dess & Beard, 1984). CEO succession is typically an infrequent, punctuation event rather than a developmental stream of activities, and may be triggered by either internal or external conditions. An interesting question, then, is to determine the relative merits and liabilities of designing a firm's ambidexterity configuration to fit conditions over which control is relatively high or comparatively low. In other words, should a firm select an ambidexterity configuration to capitalize on its strengths or to prepare for the unexpected? With either choice, given the dynamic nature of the contingent factors that need to be matched, it is clear that firms would benefit from developing the capability to adjust their relative mix of exploration and exploitation over time and that a focus on equilibrium is not always the most viable strategy.

Third, distinguishing among the three ambidexterity configurations proposed in this paper could move toward resolving some of unanswered questions and equivocal results found in

prior studies of exploration and exploitation. Studies of ambidexterity as a uniform construct may be vulnerable to construct validity or operationalization problems because varying proportions of exploration and exploitation that may represent different, but appropriate, measures of balance are not considered. The relation between external social capital and ambidexterity provides an example. While, components of internal social capital have been shown to influence a firm's ability to integrate exploration and exploitation, components of external social capital have been found to moderate the relationship between internal social capital and ambidexterity (Tempelaar, Jansen, & Volberda, 2009). External social capital enables an organization to discover resources that are not found within the organization, and introduces diverse perspectives that are not being utilized currently within the organization. Therefore, external social capital may be related more closely to exploration than to exploitation. By studying firms with an exploration-dominant ambidexterity configuration, it may be possible to demonstrate the connection between external social capital and firm performance more consistently, and to examine the relationship between ambidexterity and social capital in a more nuanced way. Following this approach, a productive research agenda could focus on identifying particular factors that have the strongest influence on each of the individual components of ambidexterity (exploration and exploitation) as well as identifying those factors that facilitate a firm's efforts to achieve both outcomes simultaneously but in differing proportions. The results could offer a useful menu of options for designing, nurturing, and changing ambidexterity configurations as conditions or needs change.

This paper offers several useful implications for managers. First, by suggesting actionable strategies we provide a framework for managers to consider when making decisions about the level of investment they wish to make in exploration and exploitation activities. In

order to do so, managers need to adopt a paradoxical thinking (Mom, Van den Bosch, & Volberda, 2009), and identify the kind of synergies different combinations of exploration and exploitation generate in order to allocate the firm's resources most effectively. Second, the ideas presented here suggest that developing the ability to alter their firm's pattern of exploration and exploitation activity toward a configuration that is for a strong fit with the strategic focus they wish to obtain is an important device in the organization change toolkit.

Ambidexterity has evolved as a central mechanism in organizational learning theory. This paper extends the literature by specifying three dissimilar patterns of exploration and exploitation that that enable these disparate activities to complement each other in distinct ways and offer diverse competitive contributions as a result. We build on the assumption from prior research that there is no single correct pattern of exploration and exploitation but that a contingency perspective is needed to determine what would comprise an 'appropriate balance' for a particular firm at a specific point in its history (Lee & Ryu, 2002; Miller, Zhao & Calantone, 2006). We extend work by Cao et al (2009) and describe three specific ambidexterity configurations and offer a menu of internal and external contingency factors to illustrate the importance of not only considering the symbiotic requirements for simultaneously engaging in exploration and exploitation, but also considering the distinctive synergies that can result from different proportional combinations of these two learning processes.

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Table 1: Characteristics of Alternative Ambidexterity Configurations

Ambidexterity configuration	Characteristics	Benefits	Challenges
Asymmetric Ambidexterity: Exploitation-Dominant	High levels of exploitation activity coupled with modest levels of exploration activity that tend to stay within established technology, market, and competitive boundaries	Helps guard against "success traps" Focus is on 'learning-in-action' in which organizations combine experience, intelligence, and experimentation based on practical and immediate needs	Constrained by current knowledge stocks and established capabilities
Asymmetric Ambidexterity: Exploration-Dominant	High levels of exploration activities coupled with exploitation activities that are directed toward modular activities rather than process activities	Helps guard against "failure traps" Focus is on unconventional sources of value creation and novel products and processes that set a new agenda for the competitive field	Heavy investments in product R&D High marketing expenses constrained by need to create necessary infrastructures, and to exploit complementarities in an established portfolio of resources, capabilities and products
Symmetric Ambidexterity: Parallel exploration-exploitation	High levels of exploration coupled with high levels of exploitation Experimenting with creative possibilities and generating new opportunities, while effectively implementing the ideas that are generated.	Enables leveraging of resources and competencies to capitalize on emerging conditions Building of organization resilience and strategic agility Developing dynamic capabilities, and increasing absorptive capacity	Possibility of falling into the "burnout trap" Pressure to assess and actively manage diverse objectives Could lead to dilution of a clear sense of purpose

Figure 1: Different ambidexterity configurations through synergistic integration of exploration and exploitation

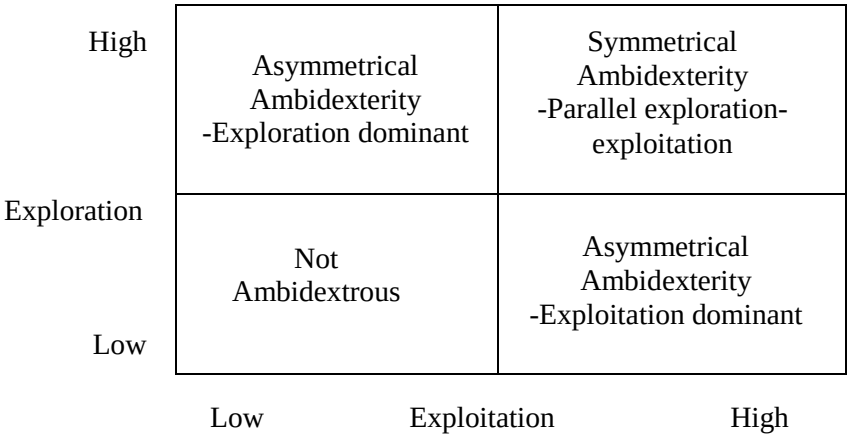

Figure 2: Dynamic nature of ambidexterity and its impact of firm performance