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Examining the Role of Culturally-Driven Schemata and Modes of Learning in Ambidexterity Development in Organizations

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Abstract

This paper examines how organizations and their leaders can build for ambidexterity (i.e., exploitation and exploration) as form of organizational development and learning practice through the use of cultural schemata. While much of the literature on organizational ambidexterity has traditionally taken a structural approach, examining how forms of exploitation and exploration can be allocated in organizations through resources, departments, and units, there is an increasing interest to understand the interplay between individual strategic choices that build for ambidextrous firms, and how they interface with contextual approaches in ambidexterity, where the firm's culture is leveraged to enable the learning of exploitation and exploration differently. To address this issue, this paper introduces a conceptual model and framework that explores how culturally-driven schemata affect the generation, assimilation, and the use of knowledge for exploration and exploitation purposes along with their management implications.

Keywords: Ambidexterity, cultural schemata, organizational learning, organizational development

1. Introduction

There is no question that the dynamics of today's economy require that organizations become more agile in their use of information. As part of today's economy, organizations face greater pressure to deal with complexity, increased volatility, and regulatory dynamics. At the same time, they must be capable of capturing, assimilating, and using knowledge from the external environment in order to build better products and services while also ensuring compliance to external regulators and institutions. Yet, how can organizations do so and in the context of what is known as ambidexterity-building – not just as a structural, but also as a culturally and risk propensity-driven process?

The concept of ambidexterity originates from the work of Duncan (1976) and March (1991), and focuses on the ability of firms to align and adapt activities around exploration and exploitation. The earliest studies, often labeled as "structural approaches" in ambidexterity, focused mostly on understanding how to allocate organizational resources and structure firm practices toward these ends. Recent approaches, however, have turned to the role of values (i.e., Gibson & Birkinshaw's 2004 work on contextual ambidexterity), as well as how forms of individual leadership can promote ambidexterity, both at the organizational and at the individual levels of analysis (e.g., Jansen et al., 2009; Baškarada, Watson & Cromarty, 2016).

Altogether, these three traditions, which encompass ambidexterity (structural, contextual, and leadership-based approaches), have both promoted and popularized its adoption by leading organizations. However, all three have long debated whether ambidextrous learning occurs as a form of cognitive dissonance between exploration and exploitation that requires either further separation or integration. For example, under the oldest of approaches (i.e., the structural ambidexterity approach), they paint exploration and exploitation as opposite ends of the spectrum. They stress that the incremental builds of exploitative learning and the path-breaking changes needed for exploration rely on antagonistic cultures and radically different sets of routines geared, respectively, toward reinforcing as opposed to challenging existing knowledge.

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However, a number of scholars have recently challenged this traditional view and have called for more research into possible areas of cross-integration and reconciliation (e.g., Andriopoulos & Lewis, 2009; Lubatkin et al., 2006).This gap in the literature is important to recognize because of March's (1991) assertion that success in ambidexterity-building depends upon appropriate continuous learning processes and implicitly stems from a firm's absorptive capacity, defined by Cohen and Levinthal (1990) as a firm's ability to absorb and assimilate information, and apply it towards commercial ends. Yet, most researchers fail to address whether, and how, pre-existing cultural schemata affect the firm's ability to achieve ambidextrous learning and to support ambidexterity-building strategies.

To address this gap, this paper focuses on how organizational learning modes and culturally-driven schemata affect a firm's ability to search, process, and use of information differently in exploitation and exploration activities. Schemata, in the context of this paper, are defined as a "preexisting assumption about the way the world is organized", or, more precisely, the underlying structure through which individuals make sense of their experience and organize information into categories (Axelrod, 1973, p. 1248). Schemata underpin how organizations collect, screen, and encode knowledge into organizational routines and organizational memory. They provide the maps and structures that are used to codify knowledge, establish priorities, link separate pieces of information, and put them into categories for future use. Schemata also underpin how individual employees prioritize either exploratory or exploitative learning in terms of mindset and behavior; they are shaped by both individual and organizational culture. However, learning orientations around exploration or exploitation will be mostly determined by the culture norms and practices where it becomes a dominant practice and roadmap for patterns of behavior (March, 1991). As described in March's seminal paper, employees who don't share these orientations will tend to be pushed out of the company, leaving of their own will or pushed as a result of mediocre performance evaluations, unless they are able to internalize the company's preferred modes of learning.

To provide deeper insight into this strategic issue, this paper begins with a review of the existing literature on organizational learning, and how it thus conceptualizes this link between organizational learning and ambidexterity. It then explores how individual biases, derived from (1) organizational culture (itself a product of norms and expectations derived from the firm's funding contexts) and (2) individual history (i.e., an individual's previous learning experiences and points of familiarity), can create both challenges and opportunities in information use and orient the organization towards either exploitation or exploration. Finally, this paper introduces a framework that links cultural schemata to product life cycle development in ambidexterity-building along with its leadership implications.

2. A Review of the Literature on Ambidexterity, Organizational Learning Modes, and Organizational Culture

Beginning with a review of the ambidexterity, and the organizational learning scholarship, research has thus called for a better understanding of the role of individuals, particularly managers and leaders, in promoting a better balance between exploitative and exploratory learning at the organizational level, and, for a few, at the individual level. Introduced by Duncan (1976), the "structural ambidexterity" approach harkens back to classical styles of management (e.g., Taylor, 1914; Mooney & Reiley, 1931; Urwick, 1933, 1938; Weber & Henderson, 1947; Fayol, 1954). It advocates that exploitation and exploration activities be separated structurally, and embedded in specific units with their own structures and culture, such as R&D (focused on exploration) and customer sales (focused on exploitation). This approach is advocated in order to avoid paralysis and conflict between what researchers usually sketch as antithetic approaches to learning. Yet, over the past two decades, scholars have called for a better understanding of the role of values in the firm's biases towards exploitation and exploration, and its ability to find a necessary balance between the two. Is ambidexterity simply achieved as a form of structural separation? Or, is there more?

As a form of organizational development practice, ambidexterity depends on how well firms can reconcile learning for exploration and learning for exploitation. Garcias et al. (2015) explain that managing these differences between exploitation and exploration requires an understanding of 1) how they can be used to generate or limit applications of existing and new knowledge, and 2) how they might be used to induce new learning experiences based on scope and organizational characteristics. Accordingly, it is important to focus upon how knowledge is acquired, assimilated, and used during contexts of change; it is also important to understand how learning modes are shaped by culture, which creates the points of familiarity and incentives to focus on exploration, exploitation, or a mix of both.

3. Paradigms That Shape Organizational Learning as Relevant to Ambidexterity

In this regard, a large body of literature on organizational learning and change management, however, points out those organizational learning paradigms are critical to knowledge assimilation and integration. These paradigms frame learning, and provide both processes and boundaries. For example, Argyris and Schön (1996), as well as Tosey, Visser and Saunders (2011), explain how the scope and depth of organizational knowledge, and the gathering, encoding and use of information for commercial purposes is shaped by attitudes to internal and external feedback, and by the organization's ability and willingness to challenge its routines, habits, values and its underlying, often implicit, assumptions.

Culturally-driven schemata, as one example, provide a mechanism through which feedback and challenge is either resisted and rejected, or accepted and encouraged. They also influence learning modes through the promotion of single-, double- and triple-loop learning.

Single-loop learning specifically refers to a learning process whereby feedback comes mostly from within organizations, from trusted sources and experts, and fails to surface and challenge underlying assumptions. It focuses on minor changes and adjustments to practices and behaviors based on what has or has not worked in the past. The goal is incremental improvement, often taking the form of alterations to procedures and rules. It does not challenge existing values and organizational culture. It prioritizes exploitative learning by building incrementally on existing knowledge, skills and competencies.

This mode of learning contrasts with double-loop learning, which requires that employees take a step back, question their assumptions, and observe their own behavior; that they look at the process, and not just the outcome, of change. Double-loop learning is based on the search for insights about why a solution worked or not. It often relies on external as much as internal feedback to surface patterns, as well as tacit operating assumptions and organizational values. It is a learning process that includes exploitative learning, but also fosters explorative learning, calling for new concepts and perspectives to reinforce or remove patterns of thought and behavior.

Finally, triple-loop learning goes beyond processes (the focus of single-loop learning) and patterns (the focus of double-loop learning) to examine principles. It asks, "Why do we even do this?" "Do we need this product?" "Is there a completely different way to solve the same problem or address consumers' needs and expectations?" It challenges organizations to understand how previous actions created the conditions that led to current problems and focuses on learning how to learn (Romme & Van Witteloostuijn, 1999; Tosey, Visser& Saunders, 2011). It is most conducive to exploratory and transformative learning.

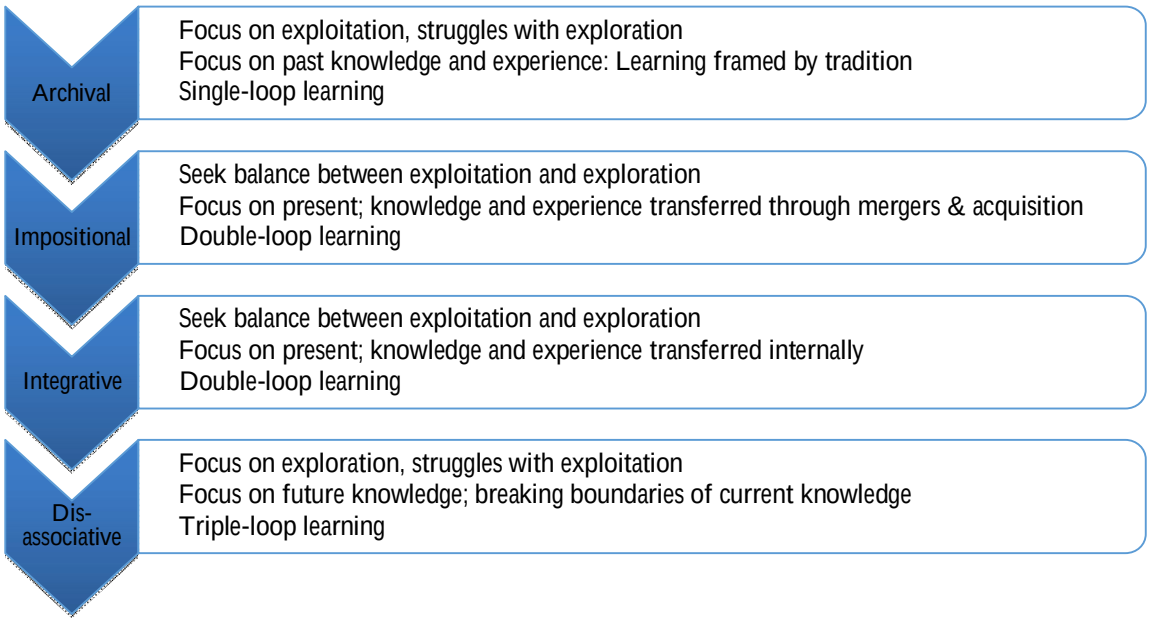
Actors in the process of narrative building, from top management to employees, are rarely aware of how their implicit assumptions shape these dynamics (Rowlinson & Hassard, 2014). In spite of the aforementioned studies, there remains much ambiguity and too few insights on (1) how cultural schemata affect organizational learning, particularly in the context of ambidexterity; (2) how organizational culture affect the way employees perceive, absorb and re-use information from internal and external sources; and (3) how dominant cultural schemata promote single-, double-, or triple-loop learning. Answering all three questions is critical for a better understanding of how organizations embrace or resist explorative and exploitative learning. This in turn contributes to researcher and practitioner knowledge of how organizations can build ambidexterity at the practical and granular level.

4. Overview and Explanation of the Conceptual Framework

To address these challenges in the literature, this section describes how culturally-driven schemata at the organizational level influence how individuals within these organizations collect, screen, categorize and use information for exploitation and exploration activities, and therefore impact ambidexterity-building. Graph 1 introduces the initial framework.

4.1 Introducing Four Schemata of Ambidextrous Learning

Graph 1: Four Schemata of Ambidextrous Learning



This framework is built, in part, from Hofstede and Hofstede's (2001) cultural framework and in particular to the four dimensions of time (i.e., employee's perception of past, present, and future challenges and opportunities), uncertainty avoidance (i.e., level of comfort with change and uncertainty), individualism (i.e., propensity to diverge from the collective thinking and norms), and power distance (i.e., degree of respect to authority) as well as Schwartz's (2006) values dimensions. The choice of Hofstede and Schwartz's frameworks emerge largely because their underlying dimensions are approximate measures for risk propensity, which differentiate exploitation from exploration, and specifically from risk avoidance when building competencies, often found in exploitation, as opposed to pursuing risks needed for exploration. The following sub-sections provide a brief explanation of Graph 1.

4.1.1. Archival schemata are steeped in the traditions of "guilded systems" and apprenticeship models that confirm historicity and traditional forms to reinforce long-guarded practice and social networks. They focus on tradition over innovation, are oriented towards the past and highly suspicious of risk taking and uncertainty, as they might damage the knowledge and loyalties, both from employees and clients, built over several generations. They discourage individual learning and favor learning as collective wisdom passed on with only minor challenges across generations. Power distance is high, and firms, dominated by master craftsmen or experts, rely on knowledge acquired over time. These firms believe in hierarchies, trust experts, and discourage challenges to established norms. As a result, they tend to over- engage in single-loop learning by reinforcing what is already known. Thus, archival schemata tend to overvalue exploitation.

4.1.2 Impositional schemata derive from strategic planning models and mindsets focused on industry leadership. Learning relies on systems views bounding and framing exploration through regular strategic planning to capture potential threats and boost profitability in the short- to medium-term. Internal learning is oriented to present exploitation, and external learning focused on the future captured through acquisition as form of double-loop learning. These firms thus have medium risk avoidance, waiting for new technologies and product to be further along the development stage before buying them. They seek a balance between challenge, based on individual values, and collective discipline. Attitudes to hierarchies are mixed and a source of tension, as older employees (insiders) defend established hierarchies while newcomers (outsiders) challenge it.

4.1.3 Integrative schemata are differentiated from archival and impositional in that learning is framed and bounded by cross-integrative systems whereby individuals learn by exposure to other divisions and internal knowledge sharing systems, such as peer learning groups. They focus on a mix of internal innovation to build the future and immediate exploitation by stretching the new knowledge to new applications.

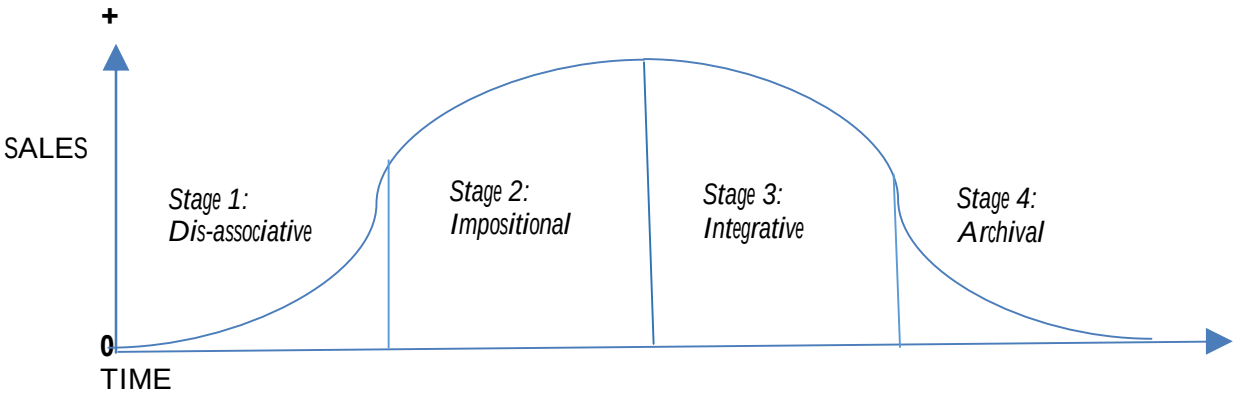
4.1.4 Uncertainty avoidance is neither low nor extreme. Individualism is rewarded for disruptive learning but collaboration and a strong collective culture also promoted for exploitation purposes, leading to internal paradoxes. A few individuals challenge collective wisdom in other divisions, but group cohesion and loyalty is important. Integrative schemata are thus promoted by industry leaders in large-scale, multi-product and multidivisional firms that offer scope for cross-pollination across divisions. They tend to value more exploration than exploitation found in impositional or archival schemata.

4.1.5 ***Dis-associative schemata*** finally derive from counter-cultures or systems that require successive ruptures to denounce existing practices and to radically shake up, reinterpret existing knowledge and invent new paradigms both in historical competencies and future explorations. They orient learning towards the future and have very low uncertainty avoidance. They thrive in individualistic and low power distance cultures as individual innovators feel empowered to challenge collective wisdom, hierarchies and norms. Thus, they embrace triple-loop learning needed to fully realize exploration to transform markets.

5. Applications and Implications of Culturally-Driven Schemata on Leadership and Product Life Cycle Development

These orientations, in turn, imply different combinations or levels of transactional versus transformational management and leadership, a concept initially defined partly by Bass (1981, 1999). They are, in part, a result of organizational life cycles that require a shift in learning routines over time, to ready organizations for new combinations and patterns of exploration and exploitation based on the size of the market and the ability to recoup the cost of exploration. See Graph 2.

Graph 2: Product/Process life cycle and cultural schemata



Stage 1: ***Dis-associative***	***Stage 2:*** ***Impositional***	***Stage 3:*** ***Integrative***	***Stage 4:*** ***Archival***
High emphasis on transformational change/leadership	Medium or low emphasis on transforma-tional change and leadership	Medium or high emphasis on transforma-tional change	Lowest emphasis on transformational change and leadership
Low emphasis on complexity building and compliance	Medium emphasis on transactional leadership and compliance	Medium emphasis on complexity building	Medium emphasis on transactional leadership to low depending on the level of compliance needed to preserve the status-quo

The next paragraphs explore how product life cycle impacts the profitability of learning for exploration or exploitation, and as a result gives a competitive edge to firms with one of the four cultural schemata (Graph 2) as in their respective stages below.

5.1. Stage 1 – Dis-associative schemata are typically found in learning modes of start-ups, where there is a low need for, or acknowledgement of, organizational complexity, but a high need for change on an on-going basis. This environment requires radical transformation (i.e., transformational leadership) but not necessarily high levels of transactional routines or compliance exchanges in the use of these schemata; the focal point of such organizations is how to engage in triple-loop learning – as a means to confront and usurp existing means and practices, whereby the lowest levels of complexity needed to facilitate this magnitude of change are valued by leveraging a dis-associative frame. This, in turn, shapes the profiles of managers needed. They must be able to facilitate triple-loop learning and drive radical change.

5.2. Stage 2 – Impositional schemata, however, are eventually needed for longer term survival - and specifically to move organizations past the start-up phase. In order for organizations to do so, they must reintroduce cultural schemata that orient toward exploitation, needed to bring the new product to market in an effective manner – and at a cost that more than covers the cost of exploration if they are to turn a profit and survive. The early adopters are not always successful in building and retaining domination of the new market. Many fail at exploitation and fall into the chaos trap. This problem arises from too many ideas and prototypes and not enough clients willing to pay the price for the new product. To resolve it, organizations should develop new pools of expertise requiring greater coordination to acknowledge exploitation (i.e., forms of transactional leadership as a value-add) for their organizations without losing focus on transformational change. As the organization moves to the scaling up stage, they should transition to an integrative frame.

5.3. Stage 3 – Integrative schemata are found in more established companies that build capabilities to integrate the internal knowledge of scaling up new products with the external knowledge of the new product or innovation because they can communicate more effectively in terms of goal orientation across key stakeholders. The strengths of firms with an impositional schema is a search for and awareness of new technologies threatening the status quo at the periphery of their ecosystem. When successful, they excel at merging creativity and innovation with control and discipline. They reduce the cost and risk of exploration through acquisition of outside knowledge through hiring practices and M&As and manage complexity and the coordination of competencies. However, they are prone to falling into the trap of conflict between old and new, at the levels of employees, teams, divisions, products, and technologies. This may lead to attrition and a deficit in loyalty as existing employees are challenged and sometimes replaced by talent and ideas from the outside. They may overpay for exploration, hire at high cost, and fail to reap the benefits when the graft of new ideas and people fails to "take" and create value (unrealized promised synergy syndrome).The organizational learning routines of companies with an integrative schema turn to a reinterpretation of the past in the light of current exploitation challenges and a focus on measuring and stretching existing knowledge while acknowledging less risky exploration efforts through the use of accommodation routines and cross-pollination across divisions. Organizational memory is tapped for examples of exploitation, successful turnarounds and cost cutting examples from the past, which allowed for the organizational survival. Organizational leaders and their individuals start to scale down some of the organization's transformational efforts by beginning to disable double-loop learning while heightening a daily focus on key exploitative efforts through an integrative frame to ensure some aspect of compliance (i.e., transactional leadership) for consistency and quality. They increase the chances of success in product and technology adaptation by focusing on those with the widest appeal for consumers and employees alike; yet, organizational leaders often fall into an obsolescence trap by focusing on internal learning at the expense of external feedback. They are not focused on seeing how disruption from the outside (i.e., players coming from different industries) might affect their business. Finally, as products or technology mature, as consumers move on to the next generation of products and new entrants impose new, cheaper or better processes, the remaining firms become "niche players". They focus on exploitation to the detriment of exploration and prioritize incremental change dealing with problem solving and tweaking existing products and processes, requiring archival schemata.

5.4. Stage 4 – Archival schemata are best-suited to periods of recession (value for money), stable markets and slow-paced innovation, but unsuited to periods of fast-changing markets and technologies except as a niche market. They adopt an "archival" cultural schema that focuses on preserving traditional products and methods for a small market of aficionados, prepared to pay higher prices for either rarity or nostalgia.

They focus on exploitation to the detriment of exploration and orient to incremental change, aimed at problem solving and tweaking existing products and processes. As part of maintaining this emphasis, organizational leaders and their individuals promote quality and tradition at the expense of exploration and new ideas. They focus mostly on transactional leadership, and the safeguard of existing practices and products.

These companies use single-loop learning, and engage in corrective actions based on what is already known to work effectively by focusing on incremental innovation that does not challenge tacit operating assumptions. Specifically, as products mature and the market is flooded with new entrants and competitors, often from emerging markets, the organizations - active in these markets - scale down on exploration and focus mostly on exploitation, particularly on bringing down the cost of the product as competition focuses on price and margins fall. This cultural frame is less-suited to markets that have reached a high degree of sophistication and appetite for customization and highly innovative products.

6. Conclusions and Recommendations for Practitioners and Scholars

To conclude, ambidexterity-building requires an understanding of how to deal with change in terms of acceptation, definition of scope and speed, supporting routines, and desired outcomes related to cultural values in risk orientations; these areas are linked to forms of single, double-, and triple-loop learning that are defined in part by culturally-driven schemata.

Specifically, as described in Graphs 1 and 2, the framework for integrating new knowledge and challenging the status quo, whether through reinforcement or extraction of internal learning or external feedback, is dependent on cultural schemata that can be linked to product or process life cycle. At each stage, organizational leaders and employees may adopt different logics and narratives. Organizations can go through different stages of their product's life-cycle, or focus on one stage, seen as their "comparative advantage" based on timing, specific skills, history, current culture, and learning routines; all of these factors will trigger a different set of issues and opportunities for ambidexterity building as well as the managerial and leadership implications that they hold.

As part of this paper's framework and contribution, this paper thus builds from Levitt and March's definition of organizational learning as routine-based and history-dependent. Organizations, as this paper argues, learn by encoding insights into routines (Levitt & March, 1988). These insights come from internal knowledge, derived from the organization's own history and the past experience of its employees within the firm, or other firms, and external knowledge (competitors and general business environment), as in Porter's five-forces model (1990). The encoding process, as filtered by cultural schemata, makes sense of the history of organizations and employees. It shapes the current and future perception of past events, and "tags" specific behavior, values, and perspectives as either acceptable and desirable, or unacceptable and undesirable. Encoded insights become part of the current organizational culture, but also influence future learning routines needed to better realize ambidexterity-building in organizations.

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