Integrative ambidexterity:

One paradoxical mode of learning

Purpose: Organizational ambidexterity brings together the paradoxical tensions between exploration and exploitation. Embracing such paradoxical tensions depends on both separating the poles to appreciate their distinct elements as well as integrating them to appreciate their synergies. The article focuses on integrative ambidexterity that focuses on the synergies between exploration and exploitation and theorizes these as a single, paradoxical, mode of learning.

Design/Methodology/Approach. We provide conceptual commentary that aims to expand the attention within the ambidexterity literature from emphasizing separation to further accommodating integration.

Research implications: We surface three practices that advance integrative ambidexterity – novelty via memory; agility via focus, and the potential for improvisation. Together, these practices enable organizations to achieve an alternative approach to learning and adaptation.

Findings: The authors outline that attention to separating exploration and exploitation needs to complemented with a focus on integration, hence the notion of integrative ambidexterity.

Practical implications: Exploring 'integrative ambidexterity', stressing the synergies between exploration and exploitation, extends our understanding of the nature and approaches to creating learning organizations. The three practices we surface offer a potential blueprint to do so.

Originality/Value: Previous scholarship emphasized how leaders can separate exploration and exploitation by allocating these learning modes to distinct organizational units or addressing them in different time horizons. However, we have less insight about the integration and synergies between exploration and exploitation, and the organizational factors that advance such integration.

Keywords: Learning, paradoxes, ambidexterity, integrative ambidexterity.

Type: Commentary

The very notion of the learning organization is paradoxical: learning requires unlearning, but unlearning is productive only as a path for learning (Holmqvist, 2003). The problem is clear when considering organizational approaches to exploiting and exploring. Learning innovative approaches for the future without also unlearning past approaches can produce an excess of exploitation that can lead to insistence on the wrong strategy (Vermeulen & Sivanathan, 2017) non-benign competency traps (Siggelkow & Levinthal, 2005), organizational ossification (Stacey, 1992) and cognitive inertia (Tripsas, 2009). For example, Miller's (1993) notion of 'architectures of simplicity' captures how organizations become narrowly focused on singular themes, activities or issues and are resistant to new opportunities from learning. Similarly, unlearning in the absence of learning can produce an excess of exploration, leading to inefficiencies, the inability to capture any of the benefits of experimentation, extreme costs, and an innovation frenzy (Falkenberg, Stensaker, Meyer, & Haueng, 2005; Stadler, 2011). As Soete (2013) argues, innovation can be more indicative of creative destruction than of destructive creation as it may reduce focus and efficiency. Consequently, as Probst and Raisch (2005) observed, growing and changing too much too quickly can be as problematic for an organization as aging prematurely.

Ambidexterity offers one response to avoid these traps by enabling organizations to simultaneously learn *and* unlearn, explore *and* exploit (Zimmermann, Raisch & Birkinshaw, 2015, Tushman & O'Reilly, 1996). Fundamental to an ambidextrous organizational approach is the notion that exploration and exploitation are paradoxical – as "persistent contradictions between interdependent elements" (Schad et al., 2016: 10). In his foundational essay, March (1991) frames the contradictory, interdependent and persistent relationship between exploratory and exploitative learning modes. Exploiting and exploring involve *contradictory* organizational approaches. Exploiting includes learning processes of efficiency, execution, risk-management and decreasing variation, while exploring requires experimentation,

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flexibility, risk-taking and increasing variation. Yet these practices are also *interdependent* and synergistic – long-term adaptation requires both execution and experimentation, risk-management and risk-taking, learning and unlearning. Finally, the relationship between exploring and exploiting *persists* – as overtime exploratory opportunities morph into the exploitative certainties and give rise to new exploratory opportunities (see March 1991).

Increasingly, scholars adopt a paradoxical approach to understand ambidexterity (Smith & Tushman, 2005; Smith, 2014; Andriopolous & Lewis, 2009). A paradoxical approach involves both separating – exploring the distinctions between alternative options and integrating – identifying synergies and points of connection (Smith & Lewis, 2011). While extant studies of ambidexterity highlight separation as a means of managing these paradoxical learning approaches, scholars have payed less attention to integration and synergies (see Farjoun, 2010). In this paper, we advance an integrative ambidexterity approach, in which we stress how exploration and exploitation fuse into one learning mode in organizations. We suggest that integrative ambidexterity extends our understanding of the dual learning modes of exploring and exploiting to propose an idealized singular learning mode. We note the value of this integrated learning mode for organizations, and then introduce three practices enabling organizations to engage this integrative approach by emphasizing novelty, agility and improvisation.

Integrative ambidexterity

Organizations face multiple strategic paradoxes – "contradictory, yet interdependent demands in their organizational goals" (Smith, 2014: 1592), including tensions such as exploring and exploiting, enabling global integration along with local adaptation, and achieving social missions while addressing financial performance (Smith, Lewis, Tushman, 2016). Scholars describe two mutually reinforcing processes for managing these paradoxical tensions – separating, pulling apart the tensions to value and appreciate the nuances of each, and

integrating – identifying synergies, mutual reinforcement, and points of connection between alternative options. Separating might include developing distinct structures, roles, practices, and cultures, whereas integration might include practices that foster points of connection (see Andriopoulos & Lewis, 2009).

Ambidexterity scholars predominantly emphasized separation of exploration and exploitation, but have paid less attention paid to integration. For example, initial descriptions of ambidexterity depict structural ambidexterity – separating exploratory and exploitative modes of learning into distinct space and time (O'Reilly & Tushman, 2016). In this approach, distinct organizational units pursue either exploration or exploitation (Benner & Tushman, 2003; Gupta, Smith, & Shalley, 2006; O'Reilly & Tushman, 2004; Tushman & O'Reilly, 1996). An exploratory unit can build a structure, culture, practices, skills and roles relevant to experimentation and innovation, and distinct from the focus on operational efficiency (Papachroni, Heracleous & Paroutis, 2014). According to these models of structural ambidexterity, integration occurs either at the apex of an organization where senior leaders seek to bring together these distinct approaches, or through targeted tactical integration through lower operational levels (Smith & Tushman, 2005). For example, IBM built unique business units to focus only on the exploratory opportunities, allowing them to incubate and grow without being overrun by exploitative practices. Senior leaders at IBM navigated the integration between the exploratory and exploitative ventures (Harreld, O'Reilly & Tushman, 2007).

Contextual ambidexterity offers another model of navigating exploration and exploitation. While contextual ambidexterity assumes that integration occurs at lower levels, this model still predominantly stresses separation. According to a contextual ambidexterity approach, organizations create the context enabling individuals within the organization manage both exploration and exploitation (Gibson & Birkinshaw, 2004). The context at the business

unit level allows individuals to adopt and shift approaches over time. As Gibson and Birkinshaw (2004) note, "… in a contextually ambidextrous unit, the context is dynamic and flexible enough to allow individuals to use their own judgement as to how they *divide* their time between alignment-oriented and adaption-oriented activities, and both are valued and rewarded" (p. 211; emphasis added). In these contexts, individuals have access to different tools for both exploration and exploitation, and the contextual support to shift over different time frames. Individuals that can accommodate an environment with multiple distinct strategic demands quickly shift focus and practices from one to the other (see also Smets, et.al. 2015).

Both structural ambidexterity and contextual ambidexterity prioritize separation, emphasizing distinctions either across space (structural ambidexterity) or across time (contextual ambidexterity). Less explored, however, are models reinforcing integration and emphasizing the interdependence of learning mode to the extent that these modes are no longer separated (Farjoun, 2010; Jackson, 1999). In response, we propose the concept of integrative ambidexterity – an organizational approach to emphasizing the entwinements of exploration and exploitation. Integrative ambidexterity shifts the focus of extant studies from emphasizing practices and structures to separate these learning modes in relation to one another to instead emphasizes practices and structures to explore how they fuse with and inform one another to become a singular learning mode. These two learning modes become 'self-referential' (Smith, 2014): making up two sides of the very same coin and engender effective implementation of the other despite being contradictory. Emphasizing integration brings to light the ways in which exploration informs, challenges, impedes or impels exploitation, and vice versa (Piao & Zajac, 2016).

The yin-yang offers an abstract symbol to underscore our core insight. In the yin-yang, the black and white slivers are distinct from one another. Emphasizing separation notes the two different slivers and highlights the differences between the black and the white.

Emphasizing integration, however, highlights how the black sliver accommodates a white dot; noting how the white informs and is part of the black and vice versa. Moreover, the nature of integration is further noted in the flowing line between the two slivers: the white sliver creates boundaries that define and accommodate the black sliver. Finally, if we consider the entire yin-yang, we do not only focus on the distinct black and white slivers, but rather on how those pieces come together to define a whole. Zooming out to consider the full circle, we see the holistic integration.

In more practical terms, integrative ambidexterity might consider how exploratory activities are defined within an organization by the boundaries of the organization's exploitative actions. As Piao and Zajac's (2006) explain, the insistence on exploitation may produce significant exploration. Farjoun (2010, p.203) summarizes this key idea, suggesting:

> Stability often presupposes flexibility and change (Bateson, 1972), and reliability requires variation (Weick & Roberts, 1993). Mirroring this, bureaucracies can be remarkably flexible (Adler, Goldoftas, & Levine, 1999), and limits can be liberating (Dewey, 1922) and instrumental for innovation (Dougherty & Takacs, 2004).

Toyota offers one example, where the Tayloristic approach with its core focus on exploitation is a source of change rather than an obstacle to it (Osono Shimizu & Takeuchi, 2008). Similarly, we see how the boundaries of exploitation define and inform the understanding of exploration. The extent to which the organization wanted to exploit the core competency of the interlocking brick created the boundary to define innovations such as introducing co-branded boxes of Legos, novel Lego figures, or even open Legoland theme parks (Lewis, 2017; Robertson & Breen, 2013).

Moreover, integrative ambidexterity stresses how these contradictory elements exist as parts of more holistic approach, zooming in and out (Nicolini, 2013) to see the forest and trees (see Schad & Bansal; 2018). This approach even offers the potential for transcendence of contradiction once that wider picture of the learning organization is understood (Bednarek et al., 2017) or paradoxical thinking applied (Miron-Spektor et al., 2018). A holistic approach,

for example, stresses how organizational systems require both exploration and exploitation in order to be adaptive and sustainable over time (March, 1991; Smith & Lewis, 2014).

By stressing the integrative emphasis of paradox, we can see exploration and exploitation as mutually defining (Farjoun, 2010; Cunha & Putnam, 2019). Understanding one learning mode is critical to appreciating the other. Implementing one learning mode effectively is critical to implementing the other. In short, the very meaning of exploratory learning gains clarity when defined in relation to the notion of exploitative learning. Metaphorically, therefore, exploration and exploitation are like mermaids: when split they each lose meaning[1]. In the extreme, the integrative nature of ambidexterity suggests that instead of thinking of exploration and exploitation as two distinct learning modes, we see them as one, and explore their intersection and mutual definition.

Appreciating the integrative nature of these dual learning modes further requires insight into the temporality of tensions. As Smith & Lewis (2011) argue, paradoxical tensions never go away. Rather, they persist over time, and are impervious to resolution. While we need 'workable certainties' (Luscher & Lewis, 2008) to allow us to push forward, these approaches are fleeting at best, and requires ongoing shifting and changing. Thus, an integrative approach does not suggest that we find a creative integration, and idealized, yet static synthesis between exploring and exploiting. Rather, we stress a processual integrative perspective with a sensitivity to temporality in which the relationship between exploring and exploiting dynamically morphs and changes over time (Lê & Bednarek, 2017; Zimmerman, 2015). Previous learning may impel or impede future learning and the success of a given balance may be protected until it becomes an element of organizational unbalancing. Moments of conflict flow into moments of integration and vice versa and yet always the paradox persists within and

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[1] This image is borrowed from Fabiana Pimentel, PhD student at The Federal University of Bahia, possibly inspired by Iemanjá.

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through these different experiences. A paradox lens, and specifically this notion of persistence, points us towards developing such a processual, temporally grounded, view of ambidexterity.

These tensions persist over time, even if the tensions become latent and not experienced directly by the people in the organization (Jarzabkowski, Bednarek & Lê, 2018). The challenge for sustaining ambidexterity thus lies in the development of sensitivity to what is not visible and developing awareness that invisibility is not absence. Awareness of what is invisible may prevent the organization from developing an excessive inclination to one of the forces and paradox may this mitigate the limitations of more sectional studies of ambidexterity that present the process as more state or condition than as process.

Adopting an integrative approach to ambidexterity

Adopting an integrative approach to the dual learning modes of exploring and exploiting creates a number of demands on leaders and organizations (Waldman & Bowen, 2016). Issues concerning when and how to integrate these forces of exploitation and exploration are complex (Smith, 2014). Indeed, the synthesis of exploitation and exploration is likely not only difficult to operationalize but also to explain, as it is built over long periods of time, through practice, based on what Nayak, Chia and Canales (2019) called a non-cognitive substrate, meaning an habitual practice developed without explicit mental awareness.

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> **Commented [SW4R3]:** Rebecca or Miguel - do one of you want to take a stab at this?

How then can leaders build ambidexterity not as two modes of learning but as one integrative path that values the synergistic potential of exploitation and exploration? As Gupta et al. (2006, p.697) pointed out: "although near consensus exists on the need for balance [of exploitation and exploration], there is considerably less clarify on how this balance can be achieved". Our approach lies in shifting the focus from finding a static balance, to exploring and ongoing dynamic balancing that values the integrative nature of exploration and

exploitation. To do so, we propose three supportive processes of novelty, agility, and improvisation.

Figure 1 elucidates our argument, depicting how processes of novelty, agility and improvisation can allow for the integration of exploration and exploitation. Novelty and flexibility support improvisation to enable exploration and change the system, while memory and focus enable improvisation to enable exploitation to sustain the system. The refinement of the 'storehouse' as well as 'poetic leaps of imagination' are one and the same process.

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Novelty via memory. Ambidexterity from a paradox perspective can be enabled by fostering an entwined approach to novelty and memory. Novelty emerges in the temporal space where remembered pasts meet imagined futures (Garud, Simpson, Langley & Tsouks, 2015). "To improve memory is to gain retrospective access to a great range of resources" (Weick, 1998:547) and this is what provides the firm foundation for novelty (and the trial and error it implies; Barrett, 1998; Zheng, 2011).

For this emergence to occur, organizations need to offer their members a space where past rules offer the memories from which to evolve and depart. For instance, Weick (1996) showed (organizational) memory expressed in general terms, rather than in detailed list of procedures, may be more useful in situations where novelty is required (also see: Moorman & Miner, 1998). In short, plans of action are necessarily built over existing knowledge and routines, but they aim to create non-existing solutions. This offers the type of deviation that can potentially sustain exploratory moves. For example, one can see how a new product like the iPhone inhibits design as a reflection of the 'memories' emerges from its predecessor such as the iPod, but also as novel design to take significant steps into a completely new market for Apple. Importantly, to get this balance right organizations should create systems where people feel that not all deviations and novelty must be sanctioned by the (hierarchical) structure. For

example, W.L. Gore & Associates has emphasized innovation through the 'power of small teams' in which associates with great ideas to build upon their past can implement these ideas provided that they can convince others to join them and they can describe their business and strategic rationale. Innovation, therefore, is a result of both memory of the past and imagination for the future. Too much memory will anchor organizations in the past; too much imagination will deprive the organization of its identity and strategic consistency.

Agility via focus. Agility, the delivery of customer value via iterative, incremental work conducted in small teams (e.g. Denning, 2018) is critical to developing ambidexterity as a paradoxical mode of learning. Strategic agility itself similarly evokes a contradiction (Lewis, Andriopoulos & Smith, 2014), namely between focus and flexibility (Bingham, Furr & Eisenhardt, 2014). The key to ambidexterity is, again embracing the need for both focus and flexibility. Too much focus may increase exploitative competency but will potentially decrease flexibility. Too much flexibility may sustain nimbler organizing but will potentially lead the organization to drift (Ciborra, 2002), from opportunity to opportunity without a consistent learning trajectory (Bingham, Furr & Eisenhardt, 2014). Focus and an attention to exploiting past knowledge helps organizations resist jumping at any potential opportunity; flexibility impedes the organization from sticking to their knitting to the degree that they preserve their core competencies to the point that they become core rigidities (Leonard-Barton, 1992). As such, despite all the recent fascination regarding technology as the foundation for organizational agility, staying agile is to some extent the result of preserving a balance between the cultivation of exploitation and the inclination for exploration via the relentless pursuit of incremental innovations (Denning, 2018). The relentless change characteristic of the semi-structured organizations described by Brown and Eisenhardt (1997) illustrates the process.

Leaders can build focus to enable flexibility, by implementing 'simple rules' or the basic boundaries for innovation (Eisenhardt & Sull, 2001). Creating these boundaries, or

"guardrails" (Smith & Besharov, 2018) expands the potential for greater innovation within. For example, Lego's foray into co-branded boxes, new Lego models, Legoland theme park, and other innovative approaches, ultimately created problems for the organization. They overextended innovation, without enough discipline to effectively and efficiently implement these innovations. In response, they started to create discipline through simple rules and guardrails. As one rule, they decided that new boxes of Legos could only have a small percentage of unique bricks, compared with the general bricks that could be applied across the full collection of Lego boxes.

Improvisation further offers a foundation for seeing the value of exploration within exploitation. Ambidexterity implies a capacity to learn the new as well as to explore the established. One process has been presented as expressing this dual quality is improvisation or accommodating available resources in the absence of a plan (Cunha, Cunha & Kamoche, 1999). Improvisation has often been associated with tackling extraordinary situations such as major occurrences with an element of unexpectedness. But improvisation has also been associated with system maintenance: people often improvise not to avoid impeding disasters but to correct trivial deviations (Cunha & Clegg, 2019) in the process making the system more robust.

Organizational improvisation literature does not deny or negate the value of such concepts but suggests that it is in the tension and interaction between these and their opposites: structure and change, order and chaos, control and freedom, that creative attitudes, innovative outcomes and productive practices may be found. Or, to summarize, inherent in the notion of improvisation is the recognition that it is in the interaction and tension between 'structure and change, order and chaos, control and freedom that creative attitudes, innovative outcomes and productive practices may be found' (Zheng et al., 2011, p.307)

As a foundation for ambidexterity improvisation is a process of ongoing adjustments. These adjustments express a dual implication: they maintain the system by changing the system, relentlessly and often invisibly. From an ambidexterity perspective improvisation addresses a millennia old paradox first raised by Socrates:

> [A] man cannot search either for what he knows or for what he does not know[.] He cannot search for what he knows—since he knows it, there is no need to search—nor for what he does not know, for he does not know what to look for (in Sedley, 2010, p.23)

Rather than explicit 'searching', new knowledge can be gained, and existing knowledge adapted and developed via improvisation. The paradoxical ontology of improvisation has been discussed previously (Clegg, Cunha & Cunha, 2002) but the role of improvisation in the creation of ambidexterity is yet to be discussed. This seems to be a promising line of research. In short, improvising might be one means to both balance memory and novelty as well as focus and flexibility (Moorman & Milner, 1998). Embedding improvisation as part of an organization's infrastructure as a behavioural habit is thus critical to ensuring that ambidexterity is a process that is cultivated every day at different levels of an organization (Nayak, Chia & Canales, 2019). Berliner explains of improvisation:

> [T]he routine process is largely devoted to rethinking. By ruminating over formerly held ideas, isolating particular aspects, examining their relationships to the features of other ideas, and, perhaps, struggling to extend ideas in modest steps and refine them, thinkers typically have the sense of delving more deeply into the possibilities of their ideas. There are, of course, also the rarer moments when they experience discoveries as unexpected flashes of insight and revelation. Similarly, a soloist's most salient experiences in the heat of performance involve poetic leaps of imagination to phrases that are unrelated, or only minimally related, to the storehouse. (Berliner 1994, pp. 216-217; cited in Weick, 1998).

Implications for theory. Studying the integrative nature of organizational ambidexterity promises to shed light on several important processes. For example, it can illuminate the relationship between explorative and exploitative learning. When do they exist in balance? How is "balance" framed: as a duality in which both poles are present or as a bland halfway

that ultimately devitalizes the paradox? We have only begun to answer these foundational questions (Antonopoulos & Lewis, 2009).

More specifically, the topics of novelty, agility and improvisation open promising new avenues to explore the relationship between learning and ambidexterity. First, they suggest the need to understand further how improvisations taking place outside the gaze of managerial attention, in what has been called, based on George Perec's appreciation of what is banal, quotidian and obvious, the infra-ordinary organization (Cunha & Clegg, 2019), are possible micro-foundational to sustain more visible demonstrations of ambidexterity. Second the relational patterns established via repeated interactions, create the human infrastructure for the development of agility. In principle people will not improvise in the absence of trust (Carmeli, Zivan, Gomes, & Markman, 2017), therefore harming flexibility. Third, to learn and to unlearn are complicated processes as they occur simultaneously. As Nystrom and Starbuck (1984) and, more recently, Vince (2018) have pointed out, the learning organization must also be an unlearning organization. In the same way that March (1991) defended the importance of slow learning for exploration, the role of slow *un*learning should also be taken into account as an antidote against the type of fast unlearning that deprives the organization of valuable experiences accumulated over time. But understanding what to unlearn and when is difficult, as organizational learning via ambidexterity juxtaposes learning paths that converge with those that diverge and which have different logics unfolding simultaneously. The exercise is necessarily complex and potentially overwhelming.

Implications for practice. The ideas of the integrative nature of ambidexterity draw from ancient philosophical texts (Schad, 2017), but only recently have become more popular for management audiences. It is important to be realistic about their implementation: leading organizational ambidexterity is a difficult balancing act that may put people constantly off balance. We hope that our insights around novelty, agility and improvisation provide

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Commented [SW6R5]: Miguel – do you want to take this.

Commented [ASS7]: One of the important points that March (1991) makes is that "slow learning" allows for greater exploration. I suppose this also extends to "slow unlearning".

Commented [SW8R7]: Miguel – I think this is a great comment. What do you think? If you agree, do you want to add a bit into this text.

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Or
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practitioners a pathway through and a way of thinking about this complexity. The benefits of approaching organizational processes, like learning, 'paradoxically' have been shown to be immense despite this inherent difficulty and complexity (Luscher & Lewis, 2008).

Concluding remarks

We have argued that focusing on the integrative nature of paradox develops a view of ambidexterity that brings together exploration and exploitation as one learning process. Indeed, ambidexterity in the absence of such integrative approaches may correspond to equivalent of one hand clapping (Wendt, 1998), the sound of the absurd. Our suggested pathway towards a paradoxical mode of learning involves novelty founded on memory, agility that draws on both flexibility and focus and improvisation that both maintains and changes systems. Each of these ideas are, in their own right, worthy of specific further attention by scholars interested in the learning organization.

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