INVITED ARTICLE

The role of unlearning in metamorphosis and strategic resilience

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Abstract

Purpose – This paper aims to conceptualize what it means to be resilient in the face of our current reality of indisputable turbulence and uncertainty, suggest that continual metamorphosis is key to resilience, demonstrate the role of unlearning in that metamorphosis and suggest that problem formulation is a key deliberate mechanism of driving continual cycles of learning and unlearning.

Design/methodology/approach – The paper entails a conceptual analysis.

Findings – It is found that both the unlearning and resilience literature streams are stuck in a paradigm whereby organizational behavior entails adaptation to the external environment and reaction to crisis. This paper suggests that, given a world of turbulence and uncertainty, a more useful paradigm is one where organizations take action before action is desperately needed, and that they proactively contribute to enacting their environment via their own continual metamorphosis.

Research limitations/implications – Future research should explore further the factors that can facilitate sensing the early warning signs, and facilitate the cyclical learning–unlearning process of metamorphosis.

Practical implications – The primary practical implication is that to ensure strategic resilience, managers must be able to identify early warning signs and initiate metamorphosis. This means understanding the processes needed to support unlearning, namely, problem formulation.

Originality/value – The originality and value of the present paper lies in that it suggests a shift in paradigm from adaptation and reaction, to action and enactment. Further, it proposes a cyclical process of learning and unlearning that together define periods of metamorphosis, and suggests problem formulation, whereby the mission statement is assessed and revised, as a mechanism in that endeavor.

Keywords Resilience, Failure, Unlearning, Problem formulation, Turbulence, Metamorphosis

Paper type Conceptual paper

Turbulence and uncertainty are no longer simply intermittent characteristics of the environment but ever-present qualities. It behooves thus the manager to not only learn how to survive in such an environment but also thrive in it. A common understanding within the management strategy literature is that organizational learning and adaptation are fundamental to organizational survival, especially in the face of crises

and environmental turbulence (Stieglitz *et al.*, 2016). This has also been an enduring understanding of strategic resilience, where swift adaptation to environmental change is espoused (Bhamra *et al.*, 2011; Burnard and Bhamra, 2011). In both cases, the behavior of organizations is assumed to be reactive. However, both research and common wisdom would assert that adaptation is often akin to swimming against the current, often too little too late (Cross, 2013). Notwithstanding times of crises, adaption is insufficient when it comes to strategic resilience because given our world of uncertainty and instability, continual renewal, or rather, metamorphosis, is needed (Morais-Storz *et al.*, 2016b). Strategic resilience is thus not about appropriate adaptation in the face of turbulence in the environment, but about "having the capacity to change before the case for change becomes desperately obvious" (Hamel and Välikangas, 2003, p. 3). This concept is in line with Senge's (1990) vision of a learning organization which encourages people to create what they want to create and make proactive change instead of reactive change. Nevertheless, how to build such capacity and what it takes to initiate the process remain challenges for managers and strategic management research alike.

The capacity for change is predicated on the organization's ability to continuously learn and unlearn (Tsang and Zahra, 2008). Although learning is undoubtedly important to organizational performance, it often encounters substantial obstacles, particularly in the form of behaviors that create barriers to new learning, such as entrenchment in obsolete knowledge (Starbuck and Milliken, 1988; Starbuck, 2017). Therefore, to learn, firms must first unlearn (Starbuck, 2017). At the organizational level, unlearning is a useful concept that describes the necessary antidote for such complications of organizational learning because it highlights the importance of "discarding old routines in order to make room for new ones" (Tsang and Zahra, 2008, p. 1437). It is a precondition for firms to learn new knowledge, and thus, it is an indispensable requirement of organizational learning (Nguyen, 2017a).

Unlearning usually happens after organizational failures and crises, when problems are obvious and inescapable. Because of this, it is largely regarded as demoralizing, harmful and very difficult to manage (Starbuck, 2017). Although organizations often need a forceful trigger to unlearn, we argue that for the resilient organization, unlearning must occur before the occurrence of a breaking point, that is, before crises or failure. Doing so requires deliberate action. As Starbuck mentions, the term unlearning refers to "overt actions that people took to stop behaving in certain ways and to stop relying on specific knowledge" (Nguyen, 2017a). These overt actions can include such things as:

> […] selling manufacturing equipment, losing confidence in and firing of personnel, giving less influence to personnel whose expertise seems to have grown less relevant, terminating programs, and destroying procedure manuals.

Given our world of transient advantages (McGrath, 2013) whereby turbulence and uncertainty are ever-present qualities of the environment to varying degrees, how can unlearning drive organizational metamorphosis toward strategic resilience without the pain and demoralization of crisis? In answer to this question, in this paper, we:

- conceptualize what it means to be resilient in the face of our current reality of indisputable turbulence and uncertainty;
- suggest that continual metamorphosis is key to resilience;
- demonstrate the role of unlearning in that metamorphosis; and

- suggest that problem formulation is a key deliberate mechanism of driving continual cycles of learning and unlearning.

Understanding this will help equip organizations with the ability to cope with environmental change timely and proactively.

The paper is structured as follows: we start by introducing the theoretical background for building a model of the metamorphosis process that is essential to organizational strategic resilience, and then propose our conceptual framework which elaborates the linkages between strategic resilience, metamorphosis and unlearning. We discuss how this conceptual framework relates to extant literature and close with a concluding remark.

Theoretical background

In this section, we briefly introduce the literatures that provide the basis for our conceptual framework, namely, strategic resilience, unlearning, problem formulation and leadership change behavior. Although their links will be made explicit in our conceptual framework, within each following subsection, we highlight their relations to metamorphosis and strategic resilience.

Strategic resilience: its relation to crisis and adaptation

The resilience literature primarily focuses on the organizational reaction to crises (Fowler *et al.*, 2007; Spillan and Hough, 2003), and the term primarily refers to the ability to endure and bounce back from a setback (Carmeli and Markman, 2011; Sutcliffe and Vogus, 2003) or the ability to return to a stable state after the setback (Bhamra *et al.*, 2011; Burnard and Bhamra, 2011). Although there are nuances in the conceptualization of resilience (Linnenluecke, 2015), as noted by Porac, the prevailing metaphor is that resilience is like "a kind of super material that can absorb strain and still maintain its shape" (as cited in Sutcliffe and Vogus, 2003, p. 4). Unique in this stream of literature is the conceptualization of strategic resilience by Hamel and Välikangas (2003). They define strategic resilience as:

> […] the ability to dynamically reinvent business models and strategies as circumstances change, to continuously anticipate and adjust to changes that threaten their core earning power - and to change *before* the need becomes desperately obvious (Hamel and Välikangas, 2003) (italics in original).

We build on this conceptualization of resilience, and suggest that:

- unlearning is the action needed for creating new learning before change is desperately obvious; and
- problem formulation is the process linking unlearning and new learning that together define metamorphosis.

Unlearning: definition and its role

Predominant among various definitions of unlearning is that they "explicitly refer to a process of getting rid of certain things from an organization" (Tsang and Zahra, 2008, p. 1437). The "things" to which the definitions refer are, for the most part, knowledge and routines. In a review of 66 works on the unlearning literature (Akhshik, 2014), 43 and 19 per cent, respectively, dealt with the subjects of knowledge and routines. In this paper, we build on this understanding of unlearning as *the process of discarding misleading knowledge and obsolete routines in organizations*. Defined this way, unlearning in our paper refers to an organizational process. After all, individuals do not unlearn. Absent brain trauma, people

cannot simply delete content from their minds, and therefore cannot discard knowledge, even if they wanted to (Visser, 2017).

Whether knowledge and routines can be deemed "obsolete" and "misleading" depends on the context in question. In a fast-changing environment, strategies and core competencies easily become ineffective and contribute to inertia or core rigidity (Leonard-Barton, 1992). Routines that might be appropriate in the old institutional context become obsolete in a new environment and need to be unlearned before new knowledge and routines can take their place (Hedberg, 1981). Furthermore, misleading knowledge can contribute to routine obsolescence. People do not always have a perfect understanding of their world, and may inaccurately interpret information. They may inadvertently learn the wrong lessons, and these can be made manifest in inappropriate routines.

Unlearning plays an important role in building organizational resilience, as it is a constituent component of the metamorphosis cycle. Metamorphoses, "transformations which sharply distinguish one period of organizational history from another" (Starbuck, 1967, p. 113), are key to strategic resilience. We define metamorphosis as a cyclical process of unlearning and learning, where old routines are discarded and new routines are acquired. Without unlearning, it is difficult for organizations to establish new routines. Established routines create competency traps and cognitive structures that prevent organizations from acquiring new knowledge, let alone applying new routines. For example, an organization's current methods and beliefs might inhibit the reception of information about new technology or may reduce its apparent value. In addition, inaccurate understandings might lead to wrong attribution, judgment and actions (Akgün *et al.*, 2007). As Akgün *et al.* (2007, p. 806) summarize, unlearning:

[…] catalyzes organizational learning process to foster a dynamic learning process; provides a platform for shifting single-loop learning to double-loop learning; and connects organizational learning and organizational change processes.

When it comes to strategic metamorphosis, new knowledge and routines cannot enter the organization before old understandings are discarded. Therefore, the most important role of unlearning for metamorphosis, and ultimately strategic resilience, is to clear up obstacles created from misleading knowledge and obsolete routines, which paves the way for new learning thereafter.

Problem formulation as a mechanism of unlearning and learning
Even when it is clearly obvious that certain knowledge and routines are obsolete, entrenchment makes it very hard to let go (Pretz *et al.*, 2003). There is a reason why we have the idiom "force of habit" because habit has the force to perpetuate routines that are not only inadequate and insufficient but also counterproductive. They are counterproductive when the context is no longer the same as the one within which and for which they were created. Routines facilitate organizing because they provide guidelines for behavior that are based on past experience, and so long as the environment remains stable and reminiscent of its past, organizational members can put into practice those routines nearly automatically (Gavetti *et al.*, 2012). When the environment is one of turbulence, however, these routines can create "blind spots" (Weick and Sutcliffe, 2007, p. 23), and whereas, they were organizational capabilities in their original context, quickly become "disabilities" (Christensen and Overdorf, 2000) in a new context.

It is the function of the top management team (TMT) to regularly appraise their capabilities as juxtaposed to changing circumstances. When there is a crisis or failure, their cause is often so obvious that the problem to be solved is clear. However, in a world of turbulence and uncertainty, the TMT may not get a clear problem to be solved, and it may

not get a definitive signal that the organizational routines will soon reach their expiration date. Rather, they must actively assess and revise the organization's strategic mission and tailor its routines accordingly. A mechanism for this is problem formulation, where the "problem" can be conceptualized as the organization's mission.

The way a problem is defined is important because it sets in motion how it will be solved. As noted earlier, given "force of habit", there is a tendency for organizational members to jump to solutions (Dobbs *et al.*, 2015), but the process of problem formulation, whereby the outcome is a definition or representation of the problem, is extremely important. Within the literature streams of management strategy (Baer *et al.*, 2013; Foss *et al.*, 2015; Lyles, 1981), creativity (ReiterPalmon *et al.*, 1997; Runco, 1994) and operations management (Bowen, 2001; Choo, 2014), scholars confirm its importance. There are two primary focal points in this varied body of literature:

(1) the role of problem formulation in supporting or driving innovation; and

(2) the importance of problem formulation in avoiding type III errors (Buyukdamgaci, 2003), whereby a solution is developed for the wrong problem.

The link to organizational learning is for the most part made in relation to the role of problem formulation in knowledge creation (Lyles, 2014; Nickerson *et al.*, 2007), and only a couple of exceptions that we know of (Hewing, 2013; Jørgensen and Perderson, 2010) mention unlearning, albeit without substantial elaboration. There is thus a need to expand the role of problem formulation in knowledge creation and organizational learning if it can be usefully conceptualized as a process that entails not just one, but both sides of the coin, that is, learning and unlearning, such that they are mutually supportive in creating knowledge and organizational learning.

The process of problem formulation is itself not inconsequential. Baer *et al.* (2013) emphasize the importance of comprehensiveness in problem formulation, whereby "alternative, relevant problem formulations are identified with respect to an initial symptom or web of symptoms" (Baer *et al.*, 2013, p. 199). Schön (1983), using the terminology of "problem setting", suggests that "a process in which, interactively, we *name* the things to which we will attend and *frame* the context in which we will attend to them" (Schön, 1983, p. 40) is needed to formulate or construct the problems that are to be solved. What both "problem setting" and "comprehensive problem formulation" describe is a social process that takes into account heterogeneous information so as to develop a problem representation (or multiple representations) for who the organization wants to be and where it wants to go. When it comes to the strategic "problem" of the organization (i.e. its mission), the kind of problem formulation that takes into account heterogeneous information within a social context that is open to debate is likely a very important measure in avoiding quick obsolescence of its outcome. The outcome of problem formulation should describe "what an organization wishes to become or why it wishes to reproduce itself" (Poulis and Poulis, 2016, p. 517). Only then can the process of unlearning begin.

Leadership change behaviors as a requisite factor
Although leadership intervention is required for raising awareness and implementing change (Fiol and O'Connor, 2017), it has been shown that leadership intervention can also sometimes be detrimental for unlearning in the context of crisis because top leaders may (inappropriately) prefer choosing the "weathering-the-storm" strategy to unlearning (Starbuck and Nystrom, 1997). Managers tend to make decisions based on past experience that is informed by a "collection of their past successes" and can hence get "stuck in their cognitive structures" (Nystrom and Starbuck, 1984). However, they may be unaware that the

basis for those decisions (i.e. past experience) may be misleading. While trying to keep crises from escalating, the actions taken by managers may be misled by faulty views (Starbuck and Nystrom, 1997). Therefore, in addition to questioning the obsolescence of the organizational routines themselves, managers must actively question the basis upon which they were created. That basis is intertwined in misleading knowledge that too must be unlearned for new (appropriate) knowledge to take its place.

Leadership behavior has been studied since the 1950s "based on the premise that effective leaders performed certain identifiable behaviors" (Gregoire and Arendt, 2004, p. 396). Reviewing literature on effective leadership in over the past 50 years, Yukl *et al.* (2002) proposed three categories of leadership behavior: task behavior, relations behavior and change behavior. Among these three classes of behaviors, leadership change behavior is most relevant for situations that require responding to failure, or turning failure into success (Morais-Storz *et al.*, 2016a). Whereas task behaviors such as "short-term planning", "clarifying responsibilities and performance objectives" and "monitoring operations and performance" (Yukl *et al.*, 2002, p. 18) and relations behaviors such as "supporting", "developing", "recognizing", "consulting" and "empowering" (p. 19) are relevant for ongoing operations, leadership change behaviors are particularly important in driving metamorphosis. Change behaviors include such things as "external monitoring", "envisioning change", "encouraging innovative thinking" and "taking personal risks to implement change" (p. 22). All of these change behaviors are precisely those that are likely key to driving change before it becomes desperately needed, rather than when there is already a crisis. To sum up, leadership intervention can be harmful for unlearning unless it involves leadership change behaviors.

We have provided a brief look at literature of strategic resilience, unlearning, problem formulation and leadership change behavior and examined their subtle connections. There are some implicit links between these concepts that have not been made clear in the extant literature. In the next part, we propose a conceptual framework that explains how strategic resilience can be built by connecting these concepts together. We propose that strategic resilience is based on metamorphosis that consists of continuous cycles of unlearning and new learning.

Conceptual framework
We have emphasized the importance of building organizational strategic resilience proactively and suggest briefly that unlearning, problem formulation and leadership change behavior can contribute to that process. In this section, we elaborate how to build organizational strategic resilience in more detail through two models:

(1) the role of unlearning in metamorphosis and strategic resilience; and

(2) the metamorphosis process.

A common denominator of the unlearning and resilience literature is that the context is often one of crisis. More to the point, both deal with adaptation to changes in the external environment. Yet, if organizations wait for a crisis to unlearn, it will be either painful or too late. The research literature has not mentioned the possibility of unlearning *before* crises, and that by doing so, it may facilitate strategic resilience (i.e. change before the need for change becomes desperately obvious). Given this substantial chasm in these two research streams, we propose that strategic resilience depends on change before change becomes desperately obvious (Hamel and Välikangas, 2003), and thus entails continual metamorphosis (Morais-Storz *et al.*, 2016b). Metamorphosis is defined not just by change (its outcome) but also by the process of unlearning and learning that must happen cyclically over time to

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ensure long-term resilience. Metamorphosis describes a full circle, where old routines are discarded and new routines are acquired. The crux of the matter is that metamorphosis must begin before there is an obvious trigger or disturbance. We thus bridge the chasm with the following proposition and model:

P1. Strategic resilience depends on continual metamorphosis that is defined by cyclical learning and unlearning over time.

The model of the role of unlearning in metamorphosis and strategic resilience (Figure 1) serves to conceptually depict their relationships, but also serves to highlight questions that if answered will facilitate the process further. Namely:

Q1. What are the early warning signs that a metamorphosis is needed?

Q2. What kind of process is required to determine what needs to be unlearned?

In a world of turbulence and uncertainty, it is impossible to accurately predict the environmental shifts that the future will bring so as to adapt the organization accordingly. Adaptation to an obvious and inexorable force (such as a crisis or failure) is arduous and painful, and for many organizations, it is too-little-too-late. It behooves thus the manager of the resilient organization to sense and identify the early warning signs for when unlearning must begin.

Sensing a need for change usually comes about from a feeling that the existing situation is insufficient. The insufficiency of the situation is made explicit in the face of a crisis, and when there is a problem that is clearly identified and defined that must be solved. However, in a world of complexity and uncertainty, problems are rarely well defined (Baer *et al.*, 2013) – they must be formulated. When it comes to strategic resilience, the "problem" of the organization is defined in its mission statement. More to the point, the mission statement lays out the strategic intent, and therefore, a strategic problem is when there is a deviation from that intent which results in a "symptom or web of symptoms recognized as needing to be addressed" (Baer *et al.*, 2013, p. 199). It is this "symptom" or "web of symptoms" that provides the early warning signs that metamorphosis is needed.
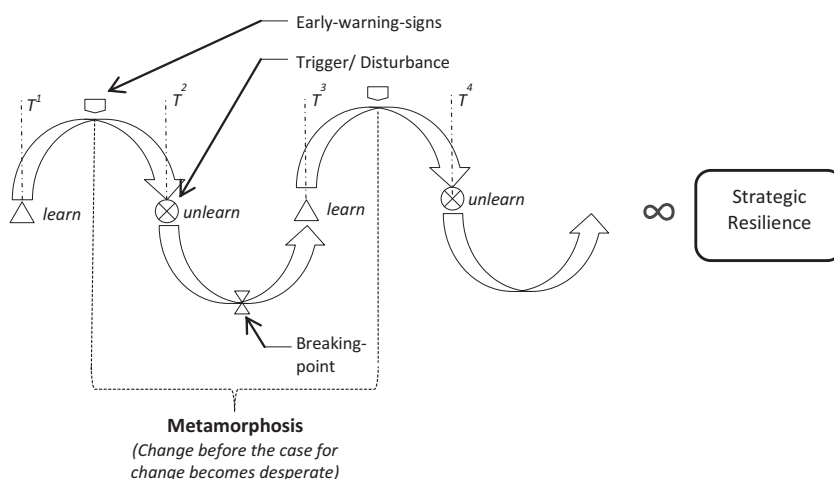

Figure 1.
Model of the role of unlearning in metamorphosis and strategic resilience

McGrath (2013) posits that in a world of "transient advantages", "disengagement can and should take place when a business is still viable, rather than when a desperate organization has no other choice" (McGrath, 2013, p. 14). She suggests three early warnings for when it is time to disengage:

(1) "when the next-generation innovations offer smaller and smaller improvements in the user experience";

(2) when customers start saying that new (or cheaper) alternatives "are increasingly acceptable to them"; and

(3) when there is a small decline in sales growth, followed by a flattening out, and then declining sales (McGrath, 2013, pp. 54-57).

This third one is probably less of an early warning, than of a loud alarm. Although the context is disengagement in projects (products/services) that have run their course, these warning signs are useful to consider at the strategic level as cues for when unlearning may be needed. Metamorphosis is still possible when there is a clear warning, but it is difficult, and it is the lucky few that achieve it. This is why leadership change behaviors and the goal of strategic resilience, conceptualized as engendering change before change becomes desperately obvious, are so important. We thus suggest the following proposition and model of metamorphosis:

P2. Metamorphosis is driven by a deliberate process of unlearning that is ignited before the need for change becomes desperately obvious.

This conceptual model of the metamorphosis process (Figure 2) answers the following question: What kind of process is required to determine what needs to be unlearned? It shows that problem formulation is a process that questions the validity of the organization's strategic intent in the face of early warning signs that it may have become (or soon risk becoming) inadequate. In doing so, management is responsible for revising the strategic intent, by renewing its mission and updating the routines that should support it. Updating the routines means discarding of obsolete old ones and acquiring appropriate new ones, effectively unlearning to learn.

In answer to the basic question driving this conceptual paper, namely, how can unlearning drive organizational metamorphosis toward strategic resilience without the pain and demoralization of crisis?, we have suggested that problem formulation is a key, deliberate mechanism of driving continual learning and unlearning. Notwithstanding the self-evident importance of the process of problem formulation, it comes with its own impediments (Baer *et al.*, 2013), and research has shown that it is often bypassed or shortchanged (Lyles, 1981). Baer and his colleagues (2013) suggest certain countermeasures to impediments, but in addition to these, psychological safety (Edmondson, 1999) and
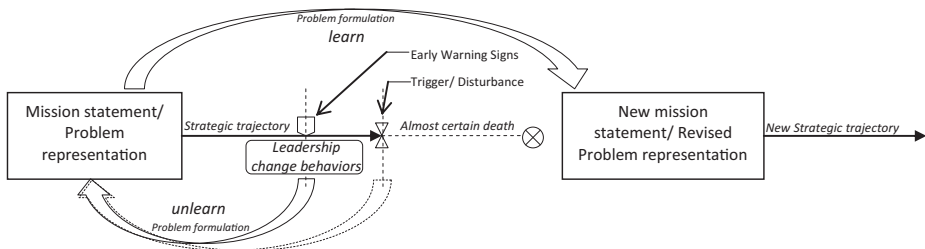
Figure 2.
Model of metamorphosis process

leadership change behaviors (Yukl *et al.*, 2002) are likely two important factors in driving the process. Future research should explore further the factors that can:

(1) facilitate sensing the early warning signs; and

(2) facilitate the cyclical learning–unlearning process of metamorphosis.

Discussion

Unlearning is typically initiated by destabilizing events, such as crises or failures, which disrupt the current practices and routines in an organization. Failures and crises are important triggers for unlearning (Nguyen, 2017b) because they provoke doubt about the efficacy of old knowledge and routines (Hayes *et al.*, 2007). By providing evidence that the current way of doing things is seriously deficient, absent of any other deliberate actions to question the status quo, only crisis and failure can make people question their current beliefs and practices (Nystrom and Starbuck, 1984). Empirical studies provide many examples of how unlearning is normally triggered by catastrophic failures or crisis (Nystrom and Starbuck, 1984; Starbuck, 2017). Although these disruptive events often provide the trigger for unlearning (Starbuck, 2017), unlearning by itself is insufficient for success or survival. Rather, unlearning is the precondition for new learning. Together they, unlearning and new learning, facilitate new knowledge to enter the organization.

Within the field of organizational unlearning, there are several models that describe unlearning-related processes. Starbuck and his colleagues depict three stages of firms' reaction to crisis (Starbuck and Nystrom, 1997). First, firms "weather the storm" by doing such things as reducing the budget, limiting peripheral activities and centralizing control. Once the first stage proves unsuccessful, unlearning will likely become painful and destructive. For instance, an extreme case can be the firing of the whole TMT. Nevertheless, the second (painful) stage is deemed an essential prerequisite of the third stage which finally entails "rediscovery and regeneration" (Starbuck, 2017). Fundamental to this three-stage process is that unlearning must precede learning anew. It is however unclear how unlearning can happen, and what the process should look like. Fiol and O'Connor (2017) responded to this gap by proposing that the process model of unlearning established routines consists of three subprocesses:

(1) initial destabilization;

(2) simultaneous experimentation and discarding old patterns; and

(3) eventual releasing old understanding and developing new understanding.

Their model explains the underlying mechanism of unlearning and the mutually reinforcing nature of these three subprocesses, and they suggest that experimentation is the principal source of new learning. Nevertheless, we still know very little about how to conduct this experimentation activity deliberately, for example what specific steps are involved in making it successful. Our paper complements these models in two ways. First, given that firms react to crisis in three stages, and given that old routines are being discarded while new ones are being built, our paper describes further the subsequent steps after unlearning that can lead organizations to new learning successfully. Second, our paper elucidates how unlearning can contribute to the ultimate goal of organizations, that is strategic resilience.

Implication for theory and practice

Top managers are often portrayed as either villains who lead firms into crises or heroes who rescued firms from crises (Starbuck and Nystrom, 1997). In either case, they are very

likely to become scapegoats once crises start and escalate (Starbuck and Nystrom, 1997). To avoid being scapegoats, top managers need to continuously strengthen strategic resilience by:

- deliberately facilitating the unlearning and new learning process; and
- actively building not only a learning organization (Senge, 1990) but also an unlearning organization (Hsu, 2013; Nguyen, 2017b).

To facilitate the unlearning and new learning process, managers must make it a point to listen to dissenters because their messages can give hints of the early warning signs that unlearning is required (Starbuck and Nystrom, 1997). When it comes to strategic resilience, managers must actively engage in change behaviors (Yukl *et al.*, 2002) so that early warning signs provide sufficient impetus for metamorphosis. As such, managers will be neither villains nor heroes, but rather good leaders. However, it is difficult to know which dissents and warnings to take seriously. Managers can solve this challenge by assuming all dissents and warnings are partially valid and calculating the associated cost if they turn out correct, then searching for evidence for validating these signals and testing whether they might entail catastrophic failure or crisis.

A learning organization, which is one "where people are continually learning how to learn together" (Senge, 1990, p. 1), has been a popular concept among companies and managers since the 1990s. An unlearning organization, which aims to establish a mechanism for its members to unlearn institutionalized knowledge (Hsu, 2013; Nguyen, 2017b), on the contrary, is rarely used in the growing literature of unlearning. This might be due to the view that unlearning is subsumable under learning (Huber, 1991) and thus building a learning organization includes unlearning in the process. An unlearning organization, in this perspective, might be an unnecessary concept, as unlearning is incorporated in the learning organization concept. The problem with this mind-set is that companies focus on the wrong thing: they focus on learning but forget to create the precondition for new learning to happen. As a result, integrated model of the learning organization (Örtenblad, 2004) often misses mentioning organizational unlearning (Tsang, 2017) and thus companies are still struggling to make real progress in building a learning organization (Bonchek, 2016). Following Hedberg, Nystrom and Starbuck (Hedberg *et al.*, 1976; Nystrom and Starbuck, 1984; Starbuck and Nystrom, 1997; Nguyen, 2017a), we argue that unlearning is not subsumable under learning but is a precondition for new learning. As Starbuck has contended, no new learning can occur without unlearning at the organizational level (Nguyen, 2017a). Thus, organizational unlearning is a separate process from organizational learning (Tsang and Zahra, 2008), and organizations not only need the ability to learn but also the capability to unlearn (Bonchek, 2016). This approach emphasizes the importance of an unlearning organization concept, referring to an organization that not only aims to discard obsolete routines and misleading knowledge but also strives to retrieve the knowledge suppressed under the predominant routines and practices (Hsu, 2013; Nguyen, 2017b).

When it comes to strategic resilience, researchers and managers alike need to consider the factors that can facilitate both abilities and how to build an organization that is both learning and unlearning. Although Tsang (2017) acknowledges current studies of learning organizations have missed organizational unlearning and suggests a remedy by redefining that "a learning organization is one which is good at both organizational learning and unlearning" (Tsang, 2017, p. 46), we think the remedy should go further than that and thus propose the concept of a "learning and unlearning organization". Future research should not only incorporate unlearning into the learning organization but give unlearning an equal status by studying how to build a *learning and unlearning organization*. In a *learning and*

unlearning organization, employees are equipped with the ability to "recognize and challenge an outdated status quo, to discard misleading knowledge, and to experiment with new practices that help unleash the full organizational potential for creativity and innovation" (Nguyen, 2017b, p. 73).

To build a learning and unlearning organization, leadership is crucial for creating the enabling conditions for everyone to unlearn old knowledge and learn new knowledge. Managers should liberate employees' unlearning power and inspire them to come up with new ideas and actions that are free from any institutional constraints. They can encourage everyone to build and exercise their unlearning capabilities – by openly discussing and debating, by questioning the status quo and by continuously experimenting with new methods – to prepare for the new learning to come. Leadership behaviors, especially change behaviors, together with a deliberate process of problem formulation are the driving forces for creating such new learning.

Concluding remarks

We live in a world of turbulence and uncertainty, and it is impossible to accurately predict the environmental shifts that the future will bring. Yet, it is insufficient (and downright unacceptable) to wait until a forceful trigger (in the shape of failure or crisis) to adapt the organization to fit with a new order being imposed on it. The unlearning and resilience research studies are stuck in a paradigm whereby organizational behavior entails adaptation to the external environment and reaction to crises. We have instead suggested that, given a world of turbulence and uncertainty, a more useful paradigm is one where organizations take action before action is desperately needed, and that they proactively contribute to enacting their environment via their own continual metamorphosis. The primary practical implication is that to ensure strategic resilience, managers must be able to identify early warning signs and initiate metamorphosis. This means understanding the processes needed to support unlearning, namely, problem formulation. Further, we have proposed a cyclical process of learning and unlearning that together define periods of metamorphosis, and suggest problem formulation, whereby the mission statement is assessed and revised, as a mechanism in that endeavor. As a result, our framework expands the scope of what is meant by the learning and unlearning organization, and underscores the role of strategic resilience in thriving in the face of turbulence and uncertainty.

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