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UNDERSTANDING CHANGE: WHAT CAN WE "LEARN" FROM ORGANIZATIONAL LEARNING?

Theme: Strategy, Competitiveness and Learning

Dutta, Dev K.

Richard Ivey School of Business,
The University of Western Ontario

Crossan, Mary M.

Richard Ivey School of Business,
The University of Western Ontario

Contact author: Dev K. Dutta
Richard Ivey School of Business
The University of Western Ontario
London, Ontario
Canada
N6A 3K7

Telephone: + 1 519 675-1956
E-mail: ddutta@ivey.uwo.ca

Abstract

We develop a theoretical perspective on how organizational learning informs and extends our understanding of change. Several parallels that we note between change and organizational learning include: (i) drivers of change (internal and external) and locus of learning (internal and external), (ii) frame-bending and frame-breaking change and exploitation and exploration as forms of learning, (iii) context, content and process of change, corresponding to situated, cognitive and behavioral dimensions of learning, and finally (iv) change implementation and its impact on learning outcomes (single-loop and double-loop learning). Using our insights from the two literatures, we propose a dynamic, integrative conceptual model of change based on organizational learning.

The nature of organizational change and how firms deal with it has been an area of high research priority for management scholars (Baden-Fuller and Volberda, 1997; Van de Ven and Poole, 1995). It has been suggested that any theory of organizational change is infused with dialectics and ideology (Rajagopalan and Spreitzer, 1997; Dunphy, 1996). There are as many definitions of change as there are books on the subject. Change has been defined as a departure of the organization from the status quo (Huber and Glick, 1993) or as a difference in the form, quality, or state of the organization's alignment with the environment over time (Van de Ven and Poole, 1995). Development of such a condition usually causes the firm to reformulate its strategy vis-à-vis the environment or undertake major changes within the organization, with the idea of improving business performance by taking advantage of emerging opportunities. The organizational change literature is replete with examples of how and why changes in environmental and/or organizational conditions necessitate a matching response by firms. Successful management of change requires that firms develop the ability to anticipate, recognize, and manage change imperatives in an efficient and effective manner. Notions of the environment as one characterized by high velocity, hyperturbulence and hypercompetition have made it necessary for firms to manage change as a creative process of managing discontinuities (Doyle, 2001). Proactive management of change requires firms to not only develop the ability to anticipate, recognize, and address change imperatives in a timely, efficient and effective manner but also be able to learn from this experience (Bierly and Hamalainen, 1995; Carayannis, 1999).

However, previous research has suggested different, and often conflicting, perspectives on change. Firstly, there have been divergent views on why organizations change. Some researchers have indicated that change is internally driven, and it occurs as a result of the life-cycle stage the organization is in, the aspirations it has and the way it initiates action to fulfill them (Child and Kieser, 1981; Kimberley and Miles, 1980). Yet others have suggested that change is externally motivated and occurs as a consequence of environmental pressures and upheavals arising out of shifts that are technological (Tushman and Romanelli, 1985; Henderson and Clark, 1990), institutional (Edelman, 1990), or shifts in competitive landscape (McPherson, 1983). Secondly, there have been debates about the content

versus process side of change. While content describes what changes in the organization between two time periods, process refers to how the change occurred (Barnett and Carroll, 1995). Research focused on assessing the content aspect of change follows more of a rational analytic perspective. Change is assumed to be a unitary phenomenon that leads to measurable shifts in the organization's business position that can not only be planned for but also executed against a changing environment that is dynamic but objective (Rajagopalan and Spreitzer, 1997). In contrast, research examining the process aspect of change adopts a much more evolutionary or iterative view of change, suggesting that change occurs as a consequence of small "learning" steps (Rajagopalan and Spreitzer, 1997). Therefore, it is emergent, evolving in a dynamic environment that is uncertain and hard to predict. Similarly, questions have been asked about whether change is incremental or transformational and whether it is affected more by organizational inertia or environmental stress (Huff, Huff and Thomas, 1992).

In this paper, we argue that in order to understand change more fully and resolve some of its apparent paradoxes, organizational learning can be applied as a powerful analytical lens. Even though organizational learning has been proposed as a principal means to accomplish strategic renewal (Crossan, Lane and White, 1999), so far there has been no systematic examination of the correspondence between elements of change and those of organizational learning.

Organizational learning is defined as the capacity or processes within an organization to maintain or improve performance based on experience (Nevis, DiBella and Gould, 1995), a capacity to encode inferences from history or experience into routines that guide future activity and behavior (Levitt and March, 1988), and systematic problem solving and ongoing experimentation (Garvin, 1993). It is the process by which management teams reshape their shared cognitive maps of the firm, its markets and competitors (De Gues, 1988), using which the organization detects and corrects errors (Argyris and Schon, 1978), or improves its actions based on increased knowledge and understanding (Fiol and Lyles, 1985). Organizational learning has been described as being objective and technical to being humanistic and political (Easterby-Smith, Snell and Gherardi, 1998). These parallel cognitive and social elements of organizational learning are directly related to organizational change. Fulmer and Perret (1993) suggest that learning enables organizations to not only adapt to environmental forces but also develop sustainable competitive advantage. Therefore, it is reasonable to suppose that in order to accomplish change organizations necessarily learn. In other words, change and organizational learning appear to be intimately linked.

Change Drivers - "Loci" of Learning

Researchers have noted contradictory evidence of possible causes of change, direction of change as well as effects of change (Rajagopalan and Spreitzer, 1997). Similarly, the effects of change have been found to be unpredictable – change may

lead to improved business performance but also organizational decline and mortality (Haveman, 1992; Singh, House and Tucker, 1986; Carroll and Hannan, 2001). Most instances of change arise because of some discomfort experienced by the organization with respect to its environment. Singh, House and Tucker (1986) suggest that change is primarily an environment driven phenomenon, but within that it can be one of ecological (happens infrequently but when it does, the organization dies), adaptive (the organization makes adaptation to a changing environment and this increases its chance of survival) or random (change is ambiguous/fortuitous and the organization may or may not survive). However, there are differences in the way firms perceive environmental signals as well as their possible impact. While some firms may interpret environmental signals as one calling for a change initiative, others in the same industry may either remain unaware of the need for change or fail to act upon it until they are forced to do so (Rajagopalan and Spreitzer, 1997). Huff, Huff and Thomas (1992) assert that the key driver of change and renewal is actually a tension between inertia (an overarching commitment to maintain the status quo) and stress (arising from a mismatch in the demands and opportunities facing the organization and its current capabilities and appropriateness of its current strategy). Amburgey, Kelley and Barnett (1993) go further to suggest that when viewed over time, the same forces that cause organizations to lapse into inertia also make them malleable. Inertia is not just the preference of organizations to retain current operating routines and procedures and not change them but also the capability developed over time to modify routines and procedures but in set or predictable ways. This then is another form of inertia. The question is whether momentum can help the organization to manage different forms of change. At other times change may be initiated even though the organization is healthy but wants to take advantage of emerging opportunities in the environment. This may happen as a result of cognitive processes that allow managers to enact their environments (Lau and Woodman, 1995). Managers interpret the organization's operating environment and direct change efforts within the firm, in order to take advantage of emerging opportunities (Barr, 1998). In the process, the actions of firms as well as their competitors lead to changes in the environments which then further necessitate changes within the organization.

Traditionally, the organizational change literature has looked at the CEO as the architect of change (Johnson, 1987; Pettigrew and Whipp, 1991), so much so that it has been suggested that transformational change in the organization in the face of organizational difficulties and inertia requires the CEO to be replaced by a new incumbent - one who can lead change based on a new mental model or interpretive system of the impending concerns and opportunities that the change offers (Clark and Starkey, 1988; Grinyer and Spender, 1979b). Other authors have emphasized that management of change requires involvement of all employees down the line (Brown and Duguid, 1991). Yet others have posited that the need for change can arise as a result of the internal dynamic of the organization, e.g. CEO and/or top management influences on change. It has been postulated that top managers - through their values and beliefs - can act as either sources of change or inhibitors of change (Huber and Glick, 1993). Given their power in the organization, top managers have a control over resources and direct them to where they feel they are needed, especially in terms of choosing between alternatives of organizational action. In this way, managers

direct the efforts of the organization in ushering in change in specific directions. Similarly, managers can also act as a constraining factor, by imposing values and beliefs that seek to preserve the status quo when change is what is required for long-term organizational survival. Even in the case of managers as rational actors guiding change, researchers have looked at the multitude of roles played by managers – from directing the content aspect of change (strategy, business performance, entry into new markets, exiting current businesses, etc.) to muddling through the change process (creating a shared vision, common understanding, motivating employees to unfreeze and refreeze, etc.).

These contrasting perspectives on drivers of change as being external or internal relate to the opposing views on the locus of learning vis-à-vis the boundaries of the firm. In developing a typology of organizational learning, Miller (1996) uses two opposing characteristics of voluntarism versus determinism to suggest that the locus of organizational learning can go from being manager driven (voluntary) to being environment driven (deterministic). Organizations focusing on either of these contrasting forms of learning have been classified as being experimenting or engaging in intentional learning versus engaging in vicarious learning or second-hand experience (Huber, 1991). In the former, the organization is proactively engaged in learning and adaptation based on assessment of the environment as well as self appraisal. In the latter, the organization learns primarily based on strategies, administrative practices and technologies of other organizations. Of course, it is important to remember that just as change cannot be distinguished as being either completely environment driven or completely firm driven but is a mix of both with one predominating, so also the locus of organizational learning is not completely either outside the firm or within, but rather a mix of both. As a result, we propose the following:

Proposition 1a: Ceteris paribus, organizations that are driven towards change primarily as a consequence of environmental forces will tend to exhibit an external locus of organizational learning.

Proposition 1b: Ceteris paribus, organizations that are driven towards change primarily as a consequence of internal aspirations will tend to exhibit an internal locus of organizational learning.

Change Dimensions - "Approaches" to Learning

Broadly speaking, organizational change has been categorized as possessing three distinct but inter-related dimensions – context, content and process (Pettigrew, 1987; Barnett and Carroll, 1995). The context is the situation surrounding the organization – the playing field from where the forces of change emanate and where the change is accomplished. Pettigrew (1987) characterizes the context as being either outer or inner. Outer context refers to the political, economic, social, technological, regulatory

and competitive environment where the firm operates. The inner context refers to the internal environment of the firm – its corporate culture, structure, formal and informal processes, political context and power centres. In other words, context refers to the "why" of change (Pettigrew, 1987).

Similarly, the content and process dimensions of change distinguish between the "what" of change as opposed to the "how" of change (Pettigrew, 1987). Thus, change as content looks at organizational parameters before and after an event in the life of the organization – *change* – and tries to understand what the possible antecedents and consequences of the change could have been. In other words, change as content assumes that change is a tractable phenomenon and that it is almost possible to halt the organization in its track as it were, in order to define and engage in the collection of relevant measurements that help us to study change (Gibbs, 1993; Huber and Glick, 1993; Ginsberg and Buchholtz, 1990). In contrast, change as process is concerned with understanding the actual change as it unfolds, including the role of the manager as change agent. The process school is thus focused on studying change as a phenomenon that transforms the organization (Whipp, Rosenfeld and Pettigrew, 1989). Carroll and Hannan (2001: 358) sum it up well when they say, "Content change refers to what actually differs in the organization at the two points in time…[whereas] process change… [is] the way the change in content occurs – the speed, sequence of activities, decision-making and communication systems deployed, and the resistance encountered."

It is not easy to separate the context, content and process dimensions of change. Any organizational action associated with change must be able to recognize the distinctive nature of these three dimensions and their overlaps, and be able to manage them in parallel. This is where organizational learning offers a very useful perspective. Depending on whether the organization views the context as given as opposed to emergent, organizational learning is viewed as a planned activity as opposed to being an activity situated in practice. Planning as learning (De Geus, 1988) assumes that learning essentially involves knowledge acquisition and information processing (Dixon, 1990; Huber, 1991). This views learning essentially as expertise sharing between a teacher and a learner. It thus includes vicarious learning. In contrast, learning as situated practice recognizes that learning occurs in individuals and teams when a group of people engage in a series of activities when placed in a particular situation or context. This is the emergent view of learning (March, 1991; Daft and Weick, 1984; Sarma, Subramani and Aldrich, 2001). It is increasingly being recognized that organizational learning, in practice, has both elements associated with it. It is a combination of learning based on planning as well as learning based on situated practice (Crossan *et al*, 1999). We suggest that the level of emphasis placed on context during organizational change will relate the view adopted by the organization towards learning. Thus, we propose:

Proposition 2a: Ceteris paribus, if the organization does not view the context dimension of change as important, it will engage in organizational learning as primarily a planning activity.

Proposition 2b: Ceteris paribus, if the organization views the context dimension of change as important, it will engage in organizational learning as an activity where planning combines with situated practice.

Fiol and Lyles (1985) propose that learning has both cognitive and behavioral elements. Similarly, Daft and Huber (1987) contrast the systems-structural view of organizational learning vis-à-vis the interpretive view. The cognitive perspective incorporates within it the treatment of organizational learning as the summation of learning of individuals. It recognizes the organization as a primarily cognitive or information processing system (March and Simon, 1958) and any requirement of change is viewed in terms of cognitive maps of managers and employees as the gap between actual and desired results as measured in terms of business performance and that the organization is primarily concerned with generating resources, extending control and imposing rules to steer the organization from its current state to a desired future state (Markoczy, 1994). Lau and Woodman (1995: 537) suggest that such a cognitive approach to change offers value because "… an individual's perception and evaluation of the environment are done through the individual's schema… [and]… people use schemata to 'enact' their environments…". At the same time, however, this cognitive approach to organizational learning is not enough. It is impossible to see cognition occurring at the level of the organization (Cook and Yanow, 1993) and there occur problems when organizational members cannot agree on common cognitive models and interpret information or take action (Mirvis, 1996). To mitigate these difficulties, an alternative approach to organizational learning has been proposed - one that is based on consideration of the organization as an interpretive and cultural system. According to this view, organizational members enact learning based on their past experiences and what they see as the potential future, and change itself is visualized as a process of shared meaning making. As new members are inducted in the change process, not only do members learn, but the organization also learns and reinvents or reconstitutes itself as a feature of organization change (Cook and Yanow, 1993). In effect, learning is "situated" in context, and it occurs as a result of people's action, interaction and interpretation in situations that change over time (Tyre and von Hippel, 1997).

It goes without saying that cognitive and behavioral approaches to organizational learning are not mutually exclusive and that one cannot exist without the other. Cognitive elements associated with learning help to detect current environmental pressures and organizational conditions by individuals, who can then identify the need for organizational change in terms of a focused agenda for change (including an ideal scenario for the future and the content of a strategy to achieve this). While doing this, the change agent or the manager and other organizational members rely not only on their mental models and shared cognitive perspective of the change but also the knowledge resident in organizational memory. This helps the manager to develop a plan for organizational action, including strategy, resources, competitive pressures, and risk mitigation measures. Learning produces an inventory of dynamic knowledge in response to the strategic requirements and these serve to guide organizational change and renewal. In fact, learning can go one step further, by being

proactive in that the organizational members can make educated guesses or best bets about emerging situations as they unfold and how to deal with them in the best possible manner through a strategy of constant improvisation (Barrett, 1998; Miner, Bassoff and Moorman, 2001).

Similarly, the behavioral side of organizational learning – as demonstrated by interpretive and cultural forces associated with learning - help drive the process dimension of organizational change. For any change to succeed, it is important that the change agent is able to create a drive for change through the organizational hierarchy, and thus make employees own the change agenda. This is where shared meaning making based on organizational learning helps. During change, an important requirement for organizational members is to unlearn and unfreeze some of the existing redundancies, before improvements can be made. This can be achieved by driving organizational learning efforts (Crossan, Lane, White and Djurfeldt, 1995), especially along social and cultural dimensions. Learning primarily involves construction of identity (Lave and Wenger, 1991) and the cultural and interpretive dimensions of organizational learning help to provide organizational actors with the required psychic space to nurture self-identity (Coopey and Burgoyne, 2000) and thus break free of the constraints of shared mental maps (Mirvis, 1996). Learning as culture change involves instilling confidence, invoking emotion and stimulating organizational excitement, and all these can help the organization to unfreeze and move along the desired path of change (Mirvis, 1996). Similarly, the power dynamic and collaborative action in the organizational learning process stimulate unplanned revision of expectations and understandings of an emergent situation, thus allowing for dialogue and creation of shared meaning making by loosening up familiar social relationships (Blackler and McDonald, 2000). In summary, we propose:

Proposition 3a: Ceteris paribus, the content dimension of change will draw from and be based upon the cognitive approach to organizational learning.

Proposition 3b: Ceteris paribus, the process dimension of change will draw from and be based upon the behavioral approach to organizational learning.

Change Types - "Mode" of Learning

Another issue is the type of change, on which there is enormous overlap in prior literature. Through their life-cycle, organizations seem to go through periods of relative stability or incremental change followed by sudden, short upheavals. This has led theorists to suggest that organizations follow a "punctuated equilibrium" model of change (Hedberg and Jonsson, 1977; Grinyer and Spender, 1979a; Tushman and Romanelli, 1985; Kimberly and Bouchikhi, 1995). According to Tushman and Romanelli (1985), the organizational life-cycle is punctuated by sudden reorientations (or discontinuous shifts in strategy, structure, processes and

environmental conditions) in an otherwise relatively long and stable period of convergence (or equilibrium, characterized by incremental change and continuous adaptation to it). Thus, change can be classified as being any of the following several bi-polar categories: evolutionary-revolutionary, episodic-continuous, incremental-transformative, first/second-order, and radical-convergent. For instance, change revolutionary when many elements change during a brief interval while it is evolutionary when it occurs gradually and affects only a few elements (Miller, 1982; Greenwood and Hinings, 1996). Implicit in this depiction of change is the assumption that certain environments or contexts seem to favor revolutionary change over others, because given the levels of inertia the natural tendency for any organization would be to prefer evolutionary change over revolutionary change.

Weick and Quinn (1999: 365-375) classify change as being episodic or continuous. According to them, "… episodic change [is]… infrequent, discontinuous, and intentional… [while] continuous change [is]… ongoing, evolving, and cumulative." They suggest that episodic change arises as an outcome of environmental forces or organizational events (such as change in leadership). Continuous change, on the other hand, is more a result of routine events occurring in the environment or within the organization. Episodic change tends to occur in sudden episodes, is initiated at the upper echelons of the organization, is more strategic, involves planning and is formal but unleashes more disruptive forces, and is wide in scope. In contrast, continuous change occurs on a day-to-day basis, involves the operational levels of the organization, is narrower in scope and is evolving and cumulative.

Dunphy and Stace (1988) distinguish change based on the time interval of change. If the organization is engaged in change on a continuous basis, they term it as incremental change. If it happens on a discontinuous basis, change is transformative. In addition, the authors suggest that in terms of the means employed to usher in change, change can be classified as coercive (when it driven by the top leadership and does not involve the rest of the organization in any manner) or collaborative (if it includes employees at all levels of the organization in ushering in change).

A few authors (e.g. Watzlawik, Weakland and Fisch, 1974; Bartunek and Louis, 1988) have classified organizational change as being either first- or second-order. First-order change imposes upon organizational members a need to make incremental modifications in their current ways of operating. In contrast, second-order change requires the organizational incumbents to fundamentally break away from their currently operating frameworks, assumptions and heuristics, and adopt new ways of action and behavior. Greenwood and Hinings (1996) use the same ideas to classify change as being either convergent or radical. According to them, convergent change is "frame-bending" and requires that existing orientation of organizational members be fine-tuned or changed in minor ways. In contrast, radical change requires that organizations make fundamental changes in their orientations or engage in "frame-bending".

In other words, as regards types of change, a plethora of terms have been used in prior literature. In order to compare and contrast these definitions of change and draw links between change and learning, we classify change according to its distinguishing features. This is shown in Table 1. We notice that even though there are several differences in the way previous researchers have interpreted change, change tends to fall into two categories. In the first category is change that has elements of evolutionary, continuous, incremental, first-order and convergent. In the second category is change that has elements of revolutionary, episodic, transformative, second-order and radical. We take recourse to Greenwood and Hinings' (1996) terminology and call these two types of change frame-bending and frame-breaking change, respectively.

Table 1
Typologies of Organizational Change

Distinguishing Parameter	**Change Type**	
	Revolutionary	**Evolutionary**
Scope	• Many organizational elements	• Few organizational elements
Coverage	• Largely affected	• Sparingly affected
Speed	• Quick	• Slow
	Episodic	**Continuous**
Source of change	• Major environmental or organizational forces	• Minor environmental or organizational forces
Frequency	• Infrequent	• Frequent
Intent	• Intentional	• Unintentional
	Transformational	**Incremental**
Time frame	• Discontinuous	• Continuous
	Second-order (Radical)	**First-order (Convergent)**
Level and quality of organizational response	• Major changes expected in frameworks, assumptions and heuristics	• Minor changes expected in frameworks, assumptions and heuristics

Having established the commonalities and differences among categories of organizational change, we now establish the links between change and organizational learning. Levitt and March (1988) suggest that organizational learning is basically an experiential approach to change management, in that organizations interpret their experience and change their routines, which then guide changes in action. This occurs through one of the two forms of organizational learning: exploration and exploitation. March (1991) conceptualizes organizational learning as occurring in cycles of exploration and exploitation. Crossan *et al* (1999) equate this to feed-forward and feedback learning, suggesting both occur simultaneously in the organization. However, it is appropriate to suggest that organizations may emphasize one over the other at any point in time. In the exploration phase of learning, firms are involved in longer-term decisions with respect to the environment. These can include change initiatives such as building new capabilities, entering new markets, making major technological changes, etc., all of which enable the firm to ensure long-term viability. In the exploitation phase, however, firms are more concerned with exploiting current capabilities and achieving higher levels of performance. Exploration and exploitation occur in cycles and cannot be completely disaggregated from each other in any particular instance of organizational change. In other words, firms need to achieve a balance between their emphasis on exploration and exploitation in order to derive the biggest results from change. Depending on whether change is disruptive or incremental, firms will tend to engage in one of the two kinds of learning – exploration or exploitation. Therefore, we propose:

Proposition 4a: Ceteris paribus, organizations will tend to be in the exploitation mode of learning during frame-bending change.

Proposition 4b: Ceteris paribus, organizations will tend to be in the exploration mode during frame-breaking change.

Change Results - "Outcomes" of Learning

In view of the complexities associated with change and its manifold dimensions, it is obvious that implementation can take more than one possible route. In order to develop their causal model of change and performance, Burke and Litwin (1992) integrate theories relating to change implementation as well as change process to suggest that change occurs as a result of tension between two categories of factors: transformational and transactional. According to Burke and Litwin, transformational factors include forces that affect the organization-environment interface and demand entirely new sets of behavior patterns from organizational members. In their depiction, these include aspects such as the mission and strategy, leadership, and organizational culture. Similarly, the change process is also affected by a set of transactional factors that require only a relatively short-term reciprocity amongst the organizational members. In their classification, these include organizational factors such as structure, management practices, systems, work unit climate, task and individual skills, motivation, individual needs and values. While suggesting that change is driven by both transformational and transactional factors, the authors indicate that it is the specific type of change – disruptive or incremental - that will require an organizational response that emanates out of primarily transformational or

transactional factors. In turn, change will affect both these factors - transformational and transactional.

Whenever a firm undertakes an organization-wide change initiative, there will be an impact on its strategy, structure, systems, processes and culture. However, we focus on only one aspect of the change results, viz. learning outcomes. Lant and Mezias (1992) show that organizational change can be conceptualized as punctuated equilibrium and the related organizational response can be understood as cycles of two types of organizational learning – first-order learning and second-order learning. In first-order learning, the organization's learning efforts are oriented towards handling incremental change. The idea is to remain equipped by fine-tuning organizational strategy/structure and expending/changing capabilities that allow the organization to stay ahead of the forces of changes. At the same time, the organization does not anticipate any major changes in its current way of operating and does not invest in any substantial organizational change program. In contrast, second-order learning occurs when there are major shifts or changes in the organization's environment. As a result, most of the current ways of operating become redundant and the organization has to proactively engage in the search for alternative ways of working, which may lead to modification in organizational strategy and structure as well routines and capabilities. Argyris and Schon (1978, 1996) term these two alternative styles of organizational learning as single-loop learning and double-loop learning, respectively.

Any organizational change initiative has both strategic and operational components. Therefore, it will incorporate within itself possibilities of both single and double-loop learning. Some authors have suggested that during organizational change, single-loop occurs on the part of the employees at the operational level while double-loop learning evolves at the level of senior managers (Aston, 1988; Hosley, Lau, Levy and Tan, 1994). In single-loop learning, the organization's efforts are primarily targeted towards tracking errors and keeping them within the tolerance levels of existing rules, standards and norms. It is used when the organization faces a relatively stable business context and managing change requires incremental modifications to the organization's current way of operating and learning from these initiatives. Single-loop learning, therefore, occurs more as a result of repetition and routine and there is an implicit understanding that this process occurs in incremental steps. Double-loop learning, on the other hand, involves fundamental change in the organizational rules and norms guiding action and behavior. It involves the entire organization and emerges out of organizational cognitive processes rather than through repetition and routine. On such occasions, the organization will be engaged in both single- and double-loop learning so as to manage the complexities associated with the change. This is because the business context becomes so complex that current routines do not hold any longer and a fundamental shift in the organization's mental framework becomes necessary. We are cognizant that the organizational learning literature has traditionally classified single- and double-loop learning as being processes. Without taking away from the process nature of these elements, we are suggesting that each of these types will also have a learning outcome that is affected by, and occurs as a result of management of change by the organization. Therefore, we propose:

Proposition 5a: Ceteris paribus, frame-bending change will lead to single-loop learning for the organization.

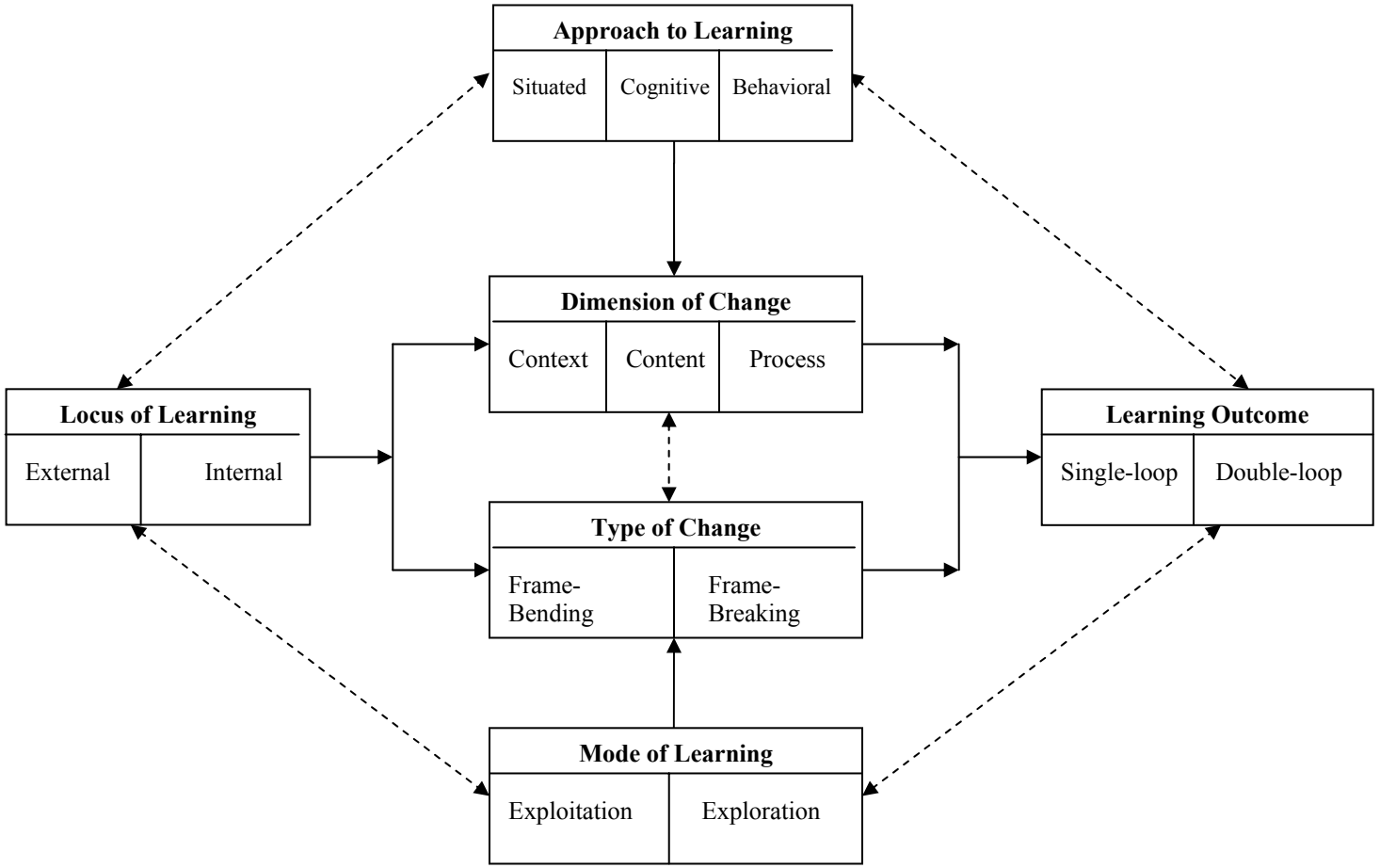
Proposition 5b: Ceteris paribus, frame-breaking change will lead to both single- and double-loop learning for the organization.

Synthesizing the Model – What Have We "Learned"?

Having established the broad links between different elements of change and organizational learning, we now synthesize the elements to develop a dynamic, integrative model of organizational change based on learning. The model is depicted in Figure 1.

Figure 1

Change and Organizational Learning



Locus of learning is the first item in our model. We suggest that it drives change by making the latter either externally driven or internally motivated. While most instances of organizational change are driven by forces emanating from the environment, change can also result because of a shift in magnitude and orientation of organizational forces, e.g. a change in leadership. Though the locus of learning appears as being bipolar (external/internal) in our depiction of the model, it is not an "either-or" situation and an organization can be driven towards change by both external and an internal forces, with one predominating over the other at any specific instance. We suggest the other constructs in our model similarly fall into categories that are bipolar as well as simultaneous, with one predominating over the other at any particular point in time. Locus of learning drives organizational change. But change itself has dimensions (context, content and process) and type (frame-bending versus frame-breaking). We affirm that any specific instance of change can be classified based on these two types of elements. Thus, approach to learning relates to the dimension of change. Cognitive learning drives the content aspect of change just as behavioral learning is concerned with the process aspect. Similarly, mode of learning relates to the type of change. Being in the exploitation mode would enable an organization to initiate as well as deal with incremental change. However, to manage transformational change, an organization would need to be in the exploration mode. Once again, the relative tension between exploitation and exploration would lead to change being predominantly incremental or transformational just as the relative tension and balance between cognitive and social learning would lead its content and process sides to emerge. Finally, the dimension and type of change, as driven by the approach to learning and enacted through the form of learning, lead to learning outcome. Depending on whether the organization is driven by exploitation or exploration and manages frame-bending or frame-breaking change leads it to accomplish a learning outcome that is only single-loop or both single- and double-loop, respectively.

To summarize, our model suggests that any particular instance of change receives its impetus from the organization's locus of learning, which can be external or internal. Based on this locus and the organization's disposition towards exploitation or exploration, the organization perceives the type of change as being either frame-bending or frame-breaking. The organization engages in a mix of cognitive and behavioral approaches to learning, which allow it to manage both cognitive and the process aspects of change. Depending on the combination of these elements and their management, the organization achieves only single-loop learning or both single-loop and double-loop learning. In our model, the solid lines and arrows indicate the direct influences of the elements on each other. The dotted lines with bi-directional arrows indicate the reciprocal influences between elements. In other words, our model is cyclical as well as dynamic. We suggest that change and organization learning interact with each other in a spiraling relationship that is path-dependent as well as emergent. This is so because the notion of organizational learning emerges from the open systems view of the firm: that organizations are active entities in their environment, with repeated inputs of information and energy shaping patterns of behavior, especially by stimulating differentiation of functions and constantly demarking and creating boundaries of action (Mirvis, 1996). While its processes are idiosyncratic (Senge, 1990; Leonard-Barton, 1992; Lawler, 1994), they enhance the ability of the organization to change continually (Dodgson, 1993). By being involved

in organizational learning, all members of the firm have a potential to play the role of a change agent in varying capacities – effectively blocking or facilitating change through learning (Rogers, 1983).

Discussion and Conclusion

In this paper, we have suggested that change is intimately linked with organizational learning. By developing the rationale for a conceptual model relating change with organizational learning, this paper makes several contributions. Firstly, we show that there exist parallels between the two streams of literatures and that learning can be looked upon as a powerful theoretical lens to dissect, untangle and/or understand the complexities associated with organizational change. Secondly, we show that learning also offers an explanation of the overall process by which organizations understand, drive, manage and implement change. Finally, through our model we suggest a balance between somewhat opposing views relating to organizational change suggested in prior literature. We recognize that change may have an external or internal focus, be either frame-bending or frame-breaking, and be based on exploitation or exploration as the primary mode of learning. However, change aligns closely with organizational learning only when the change initiative is emergent rather than planned.

Having provided a synthesis of the two literatures, a few questions remain: Is organizational change synonymous with organizational learning? If they are different, how and where do they overlap? To provide answers to these questions, we need to go back to the historical roots of these two disciplines and analyze the way each field evolved over time. In his exposition of the historical foundations of organizational learning, Mirvis (1996) contends that organizational learning as a discipline evolved from our understanding of organizations as social systems, as information systems, as interpretive systems, as inquiring systems, and as learning systems. While doing so, organization learning literature borrowed heavily from and was enriched with ideas from several established disciplines such as psychology, sociology, management science, strategy, production management and cultural anthropology (Easterby-Smith, 1997).

In the early years, organizational learning seemed to share close overlaps with the emerging organizational change literature. For instance, Mirvis (1996) notes that Michael's 1973 treatise was titled as "Learning to plan, planning to learn", with the focus being on identifying the mismatch between the imperative of long-range planning vis-à-vis the requirements of short-term organizing. Similarly, processing and making sense of information seemed to be the primary goal of organizational learning. This view of learning identified the organization as a cognitive or information processing system (March and Simon, 1958). Any requirement of learning or change was viewed in terms of cognitive maps of managers and employees, as a gap between actual and desired results measured in terms of business performance. If Simon (1991) equated organizational learning with a summation of individual learning, March (1981) suggested that learning is concerned with individual choice and decision-making. Similarly, in examining learning deficiencies of organizational systems, Argyris and Schon (1978) indicated a difference between

individual's "espoused theory" and "theory in use". All through this development, there was an implicit assumption that there is one best way to engage in problem-solving and organizational action and the role of organizational learning is to facilitate this process. In that sense, the organizational learning literature seemed to have close parallels with the literature on change, which too assumed that there exists an ideal scenario for the organization and that the role of the change agent is simply to lead the organization out of the current morass into this ideal state. Thus, organizational change had as its most important criteria a recognition that there is an ideal state of the organization and that the organization can be steered and controlled by the change-agent to achieve it.

Organizational learning and change began as disciplines sharing similar intellectual roots (e.g. learning as being the sum of cognitive learning of individuals and change as being equal to cognitively defined planned change). However, with time they diverged in their respective outlooks. Organizational learning incorporated within itself the situated, contextual and behavioral perspectives. It recognized the social-practice perspective on knowledge (Brown and Duguid, 2001) that suggested that context is an important parameter in learning (Fiol and Lyles, 1985). Under this, organizational learning occurred when a group of learners (as social beings) engage in joint construction of reality and shared meaning making, based on social interaction within specific socio-cultural settings or context (Nicolini and Mezner, 1995; Miner and Mezias, 1996; Gherardi, Nicolini and Odella, 1998; Tyre and Hippel, 1997). In fact, Lave and Wenger (1991) went so far a to suggest that not only is learning *situated* in practice, it is completely hidden from the organization as a whole. Implicit in this social view of learning is the distinction between organizational knowledge (or tacit and explicit knowledge resident in the minds of people) and organizational knowing (or knowledge that emerges in action) (Cook and Brown, 1999). The perspective adopted by these later authors towards organizational learning is fascinating because they seem to suggest that much of knowledge is generated only when individuals engage in action.

About this time, even though organizational change expanded its perspective to recognize that change can be driven through agents at multiple levels of the organization (or bottom-up change as opposed to top-down change), it still did not go as far as parallel developments on the situated process of learning as espoused in organizational learning literature. It is only recently that the change literature has accepted that change need not be completely planned but can be emergent as well, and change is being thought of as a process (Hendry, 1996).

On the other hand, the organizational learning literature has only recently recognized the importance of power and political processes and their impact on learning (Blackler and McDonald, 2000; Coopey and Burgoyne, 2000; Vince, 2001). In the change literature, however, discussion of these organizational forces had been incorporated several years back. For instance, Pettigrew (1987: 666) noted, "… the development of strategic change in the firm takes on the character of a political learning process, a long-term conditioning and influence process designed to establish the dominating legitimacy of a different pattern of relation between strategic content, context, and process."

Thus, one can say that the change and learning literatures began with similar ideas and concepts, diverged along the way and are now coming together, even though the two disciplines have several differences as of now. We believe that by incorporating insights from organizational learning, our paper has offered a novel theoretical explanation of change that recognizes not only its planned and emergent aspects, but also suggests that change involves a dynamic interplay of the environment, strategic planners, operational employees and the context. In fact, by drawing parallels between these two often disparate streams of literature, we concur with other authors that organizational learning contributes to our knowledge and understanding about change, in terms of reconciling its apparently conflicting forces – e.g. convergence and reorientation (Lant and Mezias, 1992) or continuity in the face of discontinuities (Kuwada, 1998).

Dunphy (1996) proposes that any theory of change can be described in terms of five key parameters: a basic metaphor, an analytic framework or diagnostic model, an ideal model of an effectively functioning organization, an intervention theory, and a definition of the role of change agent. He used these criteria to characterize change based on different approaches such as consideration of the organization as socio-technical system. Weick and Quinn (1999) use these parameters to compare and contrast episodic vis-à-vis continuous change. We extend these arguments and examples to develop a comparison between organizational change and organizational learning. The results are depicted in Table 2.

Table 2
Comparison Between Change and Learning

Distinctive Element	Organizational Change	Organizational Learning
Metaphor of organization	Organizations evolve and change in their environment.	Organizations learn during their life-cycle.
Analytic framework	Change arises as a result of a perceived gap in the fit between the state of the organization and forces operative in the environment or a gap in the fit between existing and desired states of the organization. It is a deliberate process of organizational action. • Perspective: external or internal • Emphasis: short-run adaptation • Key concepts: inertia, discontinuity, desired state	Learning arises as a result of accumulation of experience by the organization. It is a combination of planned and emergent processes within the organization. • Perspective: Primarily internal • Emphasis: short-run adaptation, long-run capability development • Key concepts: cognition, behavior, memory, redundancy, improvisation
Ideal organization	Capable of constant adaptation.	Capable of constant learning and its use
Intervention Theory	Change is a deviation from the current state of operation so as to achieve a higher fit with the environment or the desired internal state.	Learning is the change in individual and organizational thought and action based on development of capabilities.
Role of Agent	Change driver or rainmaker, leads the organization into the new state.	Multiple players (learners), at individual, team and organizational levels.

We see that even though there are certain similarities between the two concepts, there are differences as well. However, with consideration of change as a combination of context, content and process and the change process as emergent rather than planned (Hendry, 1996) and learning as having both cognitive and behavioral elements (Crossan *et al,* 1999), the two disciplines are coming closer and there is now a significant overlap between the two literatures. We suggest that there is potential for significant cross-fertilization of ideas from these two schools. Thus, change has a lot to offer learning, and learning change. While we are yet to see much citation of

works from one by the other, this is expected to happen over time. Even though some of the fundamental assumptions behind each of these two disciplines remain different, both fields have moved close to each other in the recent years.

To conclude this paper, we would like to draw attention to some of its implications for practitioners. By drawing upon the rich but parallel streams of literature in two disciplines, we have shown the importance of adopting an organizational learning approach to managing change. We have indicated how being inward or externally focused with respect to initiating organizational change can have a dramatic impact on how change is viewed within the firm, how it is managed and how it leads to experiential learning by the firm. We have also suggested the importance of viewing change as a process that has several elements that constantly interact with each other, as a result of which it is not enough to focus on only a few elements and ignore the others. Finally, by juxtaposing elements of organizational learning with those of change, we have demonstrated that contextual and temporal aspects of organizational change are just as important as its planned and cognitive dimensions.

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