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LIMINALITY: ON THE THRESHOLD BETWEEN LEARNING AND NON-LEARNING

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Abstract:

We claim that three fallacies stemming from the “first way” of the organizational learning field may restrict our efforts to understand the challenge of learning in organizations. We identify these fallacies as *the rational fallacy*, *the mismatch fallacy*, and *the myopic fallacy*. We further argue that the impact of institutional forces on actors in situations of mismatch and surprise has to be accounted for if these fallacies are to be avoided. As an analytic device, we draw on the concept of liminality. By doing so, we have a concept to help us analyze how recognition of mismatch as well as inquiry into surprising situations may be confined, sanctioned, or even subjected to self censorship in organizations.

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Introduction

Despite the lack of a shared agreement upon one definition of learning (Phillips & Soltis, 1998), there seems to be a common opinion among many theorists that in order for learning to take place, a mismatch between intentions and outcome has to occur (Argyris and Schön 1978), a split (Jarvis, 2006), a cognitive dissonance (Festinger, 1957) or a disequilibrium (Piaget, 1985). That is; the continual flows of actions are broken up by an often unforeseen discontinuity: The teacher in the classroom experiences that his way of explaining a mathematical problem does not contribute to the students learning. The manager realizes that her way of communicating with a subordinate leads to hostility instead of trust. The surgery team recognizes that the patient is about to be injured due to electromagnetic-interference.

The referred contributors are representing different schools within the field of learning, and concepts such as recognizing, realizing, experiencing, disequilibrium, and dissonance may carry different connotation. What the theorists seem to have in common is the identification of gaps as instances that may trigger learning. They take as a departing point that mismatch, break, or split in a continuous flow represents decisive moments that provide us with opportunities for change. To be more exact; *if* we realize that they provide such an opportunity, and *if* we choose to inquire into the situation at hand.

As we will illustrate in this article; this is far from obvious in formal organizations. On the one hand moments where mismatch or split occurs are common even in the most stable forms of organization. On the other hand, the fact that they are common does not guarantee that they are recognized or explored. Mismatch and continuity are related, and when mismatch occurs, it does so against a background of continuity. For example, from studying routines (Feldman, 2000) found that one of the situations where routines change is when unintended outcomes are produced by following the routines. Still, opportunities for learning are not synonymous with change, and we argue therefore for a closer examination of situations where opportunities for learning arise, but are not pursued.

In this article we concentrate on experiential learning in organizations, understood as the acquisition of knowledge from direct first hand experience (Huber, 1991). More specifically, we wish to contribute to the debate on the future of organizational learning (Easterby-Smith, 1997; Vince et al., 2002; Elkjaer, 2004). We do not aim at solving organizational learning's problems, and we do agree with Easterby-Smith's conclusion that the creation of a comprehensive theory is unrealistic. Rather, we claim that three interrelated fallacies stemming from the "first way" of the organizational learning field (Elkjaer, 2004) may restrict our efforts to understand the challenge of learning in organizations. We identify these as the rational fallacy, the mismatch fallacy, and the myopic fallacy. We further argue that the impact of institutional forces on actors in situations of mismatch and surprise has to be accounted for if these fallacies are to be avoided. In order to understand how institutional forces may affect organizational learning, we draw on the concept of liminality.

The article will be structured as follows: First; we discuss dominant organizational learning theories' tendency to require mismatch, split, or surprise as a prerequisite for learning to take place, and how the "first way"(Elkjaer, 2004) of organizational learning theory explains our inclination to avoid learning. We close our review by identifying what we see as three fallacies of organizational learning. Second; we introduce the concept of liminality, and discuss its strength and weaknesses as an analytic tool. Thereafter; we return to the three fallacies we have identified, and apply the concept of liminality in a discussion of their consequences.

The notion of mismatch and surprise in organizational learning theory

It seems to be a widespread assumption stemming from "the first way" of organizational learning theory (Elkjaer, 2004), that a mismatch between intentions and outcome has to take place in order for learning to come about. In a seminal Harvard Business Review article, Chris Argyris (1977) described organizational learning as a process of detection and correction of errors, where individuals act as agents for the organization, and learning occurs through the actors. One year later, Argyris together with Donald Schön published the tremendously influential *Organizational Learning: A Theory of Action Perspective* (Argyris & Schön, 1978). Influenced by American pragmatism and John Dewey's concept of experience, where it is "...the movement between the familiar and routine actions as well as between established and emergent social relations that brings about learning..." (Elkjaer, 2004, p. 423), they described learning as a possible outcome of an unforeseen situation where the actor is taken by surprise or confusion as a result of a mismatch between expectations and outcome.

The first way of OL and particularly the works of Argyris and Schön have resulted in a series of related schools known both as Action Science, Action Theory, Action Design, and Action Inquiry (Argyris & Schön, 1978; Argyris, 1976; Senge, 1990; Argyris et al., 1985; Leitch & Day, 2000; Friedman, 2001; Torbert, 1972; Torbert, 1991). A common thread is the notion of mismatch and the need for inquiry created by the mismatch. The assumption is that in order for learning to take place, there has to be a process of detection of errors that may lead to an inquiry into the situation at hand.

"When the consequences of an action strategy are as the agent intends, then there is a match between intention and outcome, and the theory-in-use of the agent is confirmed. If the consequences are unintended, and especially if they are counterproductive, there is a mismatch or an error" (Argyris et al., 1985, p. 85-86).

When our theories of action do not lead us to where we expected, we have a divergence between intentions and outcomes. This disparity may require correction, but in order for this correction to take place, the actor has to experience some sort of interruption, surprise, frustration, discontinuity, or disturbance. This surprising mismatch between expected and actual outcomes calls for a process of thoughtful inquiry that may lead to a modification of the actor's mental images of the organization (Argyris & Schon, 1996 p.16). A change in the individual's theory in use will be the ultimate proof that learning has occurred. Since the actor is an agent on

behalf of the organization, organizational learning will not take place unless a change in individual action theories first takes place (Honey & Mumford, 1992; Burgoyne et al., 1994).

This view has been and still is influential. Argyris has continued his work along the same lines, producing an impressive amount of articles, books, and seminars. Wooddell claims that "Chris Argyris has been one of the single most influential scholars in the field of organizational development. His ideas on organizational learning, reasoning and thinking have had a tremendous impact upon the field" (Wooddell, 2003, p.67). When Easterby-Smith, Antonacopoulou, Simm, and Lyles selected seven prominent contributions to organizational learning, their first pick was Argyris and Schön (1978) and the concepts single and double-loop learning, and espoused theory and theory-in-practice (Easterby-Smith et al., 2004).

The 'first way' of organizational learning is according to Elkjaer characterized by learning as acquisition of knowledge as well as analytical and communicative skills, while the 'second way' puts emphasis on learning as participation in communities of practice. A 'third way' is sketched by Elkjaer as a synthesis of elements of the first two added with a dash of body, emotion, intuition, and an understanding of the relation between individuals and organization that emphasizes the role of commitment and organizations as social worlds (Elkjaer, 2004). This indicates that organizational learning has come a long way since the 'first way', but the idea of mismatch and surprise as a prerequisite for learning nevertheless still seems to have a strong influence. For example, when Elkjaer makes her case for the 'third way', she does so by revisiting pragmatic learning theory, Dewey's concept of experience and inquiry, and the presumption of mismatch and surprise: "The provocative element in experience, i.e. the element that arouses the mind and puts it to work, is facing an uncertain or problematic situation, an unforeseen event. When habitual actions are upset, it creates the basis for gaining new experiences and subsequent new knowledge" (Elkjaer, 2004, p. 425). And she concludes: "In sum, the content in pragmatic learning theory is to develop experience and become knowledgeable with a point of departure in the meeting with the uncertain situation (Elkjaer, 2004, p. 426).

In other words, one might say that the presupposition of mismatch has survived from the first to the third way of organizational learning.

Defensiveness and rational inquiry as a proposed response to surprise

Following dominant organizational learning theory an organization is dependent on the individual actor's capability of detecting and correcting errors in order to learn. If the actor does not (1) recognize the situation as a discontinuity, (2) inquire into the situation in "a thoughtful way", and (3) produce "corrective responses", there will be no learning, whether individual or organizational.

So why do we repeatedly not recognize, nor inquire into situations of mismatch? According to the first way of OL, it is primarily because of inhibitory loops and defensive routines. Argyris claims that rigorous reasoning stops and defensive reasoning takes over when problems involve potential threat or embarrassment (Argyris, 1994). The explanation for such a behavior is psychological, according to Argyris. We develop defensive mental models, master programs for protection, early

in life for dealing with emotional or threatening issues. These are sets of rules that we use to design our own actions as well as to interpret the actions of others. We retrieve them rather unconsciously in situations when we face problems or invent solutions. The programs can be understood as theories-in-use, theories that can be identified from observing what we actually do. They may differ substantially from our espoused theories, the theories we believe or claim we apply. Few of us are aware of the inconsistency between the two.

On the contrary, most of us are consistently inconsistent in the way we act, according to Argyris. We follow theories-in-use that seem to have the same set of governing values, independent of culture, race, and gender: We strive to remain in unilateral control, we aim at maximizing winning and minimizing losing, we suppress negative feelings, and we wish to be as rational as possible. We do so because we are programmed to apply a deeply defensive strategy in order to avoid embarrassment, risk, vulnerability, and we do not want to appear incompetent in the face of others and ourselves (Argyris, 1994).

Argyris and Schön hold forth that defensiveness begins with primary inhibitory loops on the individual level (Argyris & Schön, 1996, p.89). They may lead to secondary inhibitory loops, defined as "...the behavioral loops – causal connections between action strategies and antilearning consequences – that are supra-individual, pertaining to interactions of groups within organizations" (Argyris & Schön, 1996, p.97).

The argument is largely echoed by March's observation; that organizations operate to conceal, tolerate, or even stimulate, incoherence (March, 1994, p. 194). However, while March puts emphasis on the role of the organization, the first way of organizational learning has its lens focused on the individual. The direction for how the development of defensive routines is from the individual to the organizational level. The routines develop from the skilled use of unlearning strategies among individual actors, and from there the defensiveness may become a group trait and finally a characteristic of the organization as a whole.

On the one hand Argyris and Schön claim that we have to experience surprise and mismatch in order for learning to take place, on the other hand they illustrate how we develop cover up strategies and individual as well as collective blindness that hinder learning. Their proposed way out of this dilemma is shown in Table 1.

Conditions for Error	Corrective responses
Vagueness	Specify
Ambiguity	Clarify
Untestability	Make testable
Scattered information	Concert
Information withheld	Reveal
Undiscussability	Make discussable
Uncertainty	Inquire
Inconsistency/incompatibility	Resolve

Table 1: Conditions for Error and Corrective Responses (Argyris & Schön, 1996, p.91)

Argyris and Schön's suggestion is to first identify the conditions for error, and then apply suitable corrective responses. The underlying idea is that clarifying and structuring a situation that may be experienced as confusing or contradictory will reduce barriers to learning. It is a highly rational procedure: Through structured and focused elimination of uncertainty one may remove "cover ups" and improve the possibility for learning to take place.

A preliminary conclusion: Three fallacies of organizational learning

As we have attempted to illustrate; the dominant organizational learning theory's notion of mismatch and surprise takes as a departing point a split, discontinuity, or surprise that creates a situation that needs to be inquired into for learning to take place. Failing to learn is then typically explained as a consequence of micro to macro expansion of defensive routines. In order to overcome the defensiveness, highly rational action steps are proposed (Argyris & Schön, 1996).

We maintain that reducing learning to a rational inquiry into a surprising situation created by a mismatch may restrict organizations capacity to learn. Our review has led us to the following conclusions:

- *It underrates the role emotions have on actors in liminal situations.* The first way of OL asks us to be aware of our feelings in communicative situations and encourages us to make them explicit (Argyris, 1977), but the often subtle effect emotions have on individual behavior in liminal situations as a result of institutional forces and what is already learned in an organization, is overlooked. We call this the *rational fallacy*.
- *The likelihood that learning also can take place under continuity, as well as how this learning may occur; is not sufficiently explored.* One consequence of restricting learning to mismatch is that learning becomes associated with deviation and failing, and as such, learning possibilities in ongoing daily work may not be taken notice of. We call this the *mismatch fallacy*.
- *It is myopic.* Focus tends to be on the individual, and defensiveness is primarily explained as a micro to macro process expanding from individual to organization level. This can be clearly seen in the work by Argyris and Schön. We call this the *myopic fallacy*.

It often takes a novel lens to become aware of new aspects embedded in well established organizational phenomena. We will thus introduce the concept of liminality as an analytic device to help us understand organizational situations of mismatch and continuity that may call for learning. After that; we will return to the three fallacies we have identified and we will discuss them in the light of liminality.

Liminality as an analytic device

Liminality is a concept that stems from the Latin word *limen*, meaning "threshold". It was taken into use by the ethnographer Arnold van Gennep (Van Gennep, 1960) in

his *Rites of Passage*, originally published in 1909. Building on Van Gennep; Victor Turner later revitalized the concept in his interpretive and symbolic anthropological analyses. Turner says:

“This term, literally "being-on-a-threshold," means a state or process which is betwixt-and between the normal, day-today cultural and social states and processes of getting and spending, preserving law and order, and registering structural status” (1979, p.465).

Turner frames liminality as a state where “anything might, even should, happen” (p. 465). He continues to describe liminality as situations that can be full of potency and potentiality, experiment and play, where ideas, words, metaphors and symbols may be brought into play. Turner does not confine liminality to the rites of passage that we might associate with studies of artforms, tribes, and rituals in distant cultures:

“Scientific hypotheses and experiments and philosophical speculation are also forms of play, though their rules and controls are more rigorous and their relation to mundane "indicative" reality more pointed than those of genres which proliferate in fantasy. One might say, without too much exaggeration, that liminal phenomena are at the level of culture what variability is at the level of nature” (p.465).

In spite of Turner’s attempt to export liminality as a general analytic concept, it has been most frequently used in ethnographical and anthropological studies of rites and rituals (McNamara et al., 2002; McCadden, 1997), ecstasy and extreme states of mind (Waskul, 2005; Dayal, 2001), and other threshold situations (Pierce, 2007; Terrill, 2006; Sharpe, 2005; Miles, 2006). Liminality has also been used to analyze the significance of time (Anderson, 2005; Wallace, 2006) and space (Cunha & Cabral-Cardoso, 2006; Starr-Glass & Schwartzbaum, 2003; Buckingham et al., 2006).

Lately we have seen the concept increasingly applied also outside the realm of traditional ethnography and anthropology, for example in the study of ethics (Ganim, 2007; Bargiela-Chiappini, 2007; thaus-Reid, 2006) and development (Deflem, 1991; Clegg et al., 2006). One reason for the interest may be that liminal situations present possibilities for innovation. Drawing inspiration from Schutz, Weick works from the idea that reality is presented as streams of experience to actors, which they sometimes act upon by applying intuition and improvisation (Weick, 1979). Parts of Weick’s work are directed towards what he calls ‘confusing events’, which occur as a result of tangled processes that appear equivocal to actors. It is the condition of equivocality in particular that allows for alternative courses of action and alternative interpretations to be made of what is happening. Weick’s point is that under normal conditions in organizations, confusing events may constitute occasions for innovation. Innovation is typically possible when actors can reflect and experiment with different possible courses of action. We find an illustration in Clegg et al. (2006). They studied how staff involved in pedagogic innovations are presented with challenges that take them outside their habitual fields of expertise and disciplinary identities and into liminal situations (Clegg et al., 2006). Following the same line, Meyer and Land put forward that learning involves the occupation of a liminal, unstable space in which the learner may swing between old and emergent

understandings towards mastery (Meyer & Land, 2005). Also, Bryans and Smith have argued that since radical shifts are taking place in management theory; corresponding shifts should occur in the theory of training and development. More precisely a turn towards a dialectical relationship between actors and their organizations is called for, characterized by openness, uncertainty, complexity, relationships, reflection, reframing and restoration (Bryans & Smith, 2000).

When taken into organizations, the heritage from folklore and ethnography has often colored the studies and influenced the selection of units of analysis. For example, Moore analyzed Walt Disney World as a pilgrimage centre in the form of a "giant limen ritual threshold" with play, myth, rites of passage and ritualistic behavior (Moore, 1980). Sturdy et al. focused on the ritualistic role of business dinners and back-stage management consultancy, and suggested that liminality as organizational space can be both comfortable, structured, and strategic or tactical (Sturdy et al., 2006). Czarniawska and Mazza took on management consulting as ritualistic activities in liminal space (Czarniawska & Mazza, 2003). Powley and Cameron used liminality to illustrate how organizations may heal through rituals after major traumas (Powley & Cameron, 2005), and Trice and Beyer studied organizational culture as rites and ritualistic behavior (Trice & Beyer, 1984).

However; there are also examples of organizational analysis that transgress or expand liminality's ethnographic heritage: For instance; Garsten regarded temporary employees as 'liminal threshold people', and applied liminality as an analytic device to examine how learning occurs at the limits of organizations, such as in teams and networks across traditional borders (Garsten, 1999). Tempest and Starkey, building on Garsten, extended the use of liminality to discuss learning in relation to flexibility and individualized work in organizations (Tempest & Starkey, 2004). And Cunha and Cabral-Cardoso discussed dilemmas of legality and illegality in a liminal view (Cunha & Cabral-Cardoso, 2006).

The exploratory power of liminality

As an analytic tool, liminality's strength appears to be as a lens to focus on social situations where actors find themselves in between different states of being and levels of awareness. The central part is "being-on-a-threshold," in a state or process betwixt-and between the normal and the unknown or unusual (Turner, 1979, p.465). This state, process or context may be understood as a form of space (Anderson, 2005; Buckingham et al., 2006; Cunha & Cabral-Cardoso, 2006; Starr-Glass & Schwartzbaum, 2003) where provocation as a result of transgression of the reigning order may occur (Lugones, 2006). Since pre-given logics and procedures in bureaucratic organizations often generate rather than solve local problems when applied in liminal situations (Dressman, 1997), some authors have argued for the need to learn playfully and creatively in lack of prescriptions that work (Clegg et al., 2006; Starr-Glass & Schwartzbaum, 2003). Playfulness allows us, as March argues, to go beyond rationality and purpose, and such "foolish" behavior may open for new solutions (March, 1976). But formal work organizations are attempts to institutionalize standardized sets of responses to problems where rule following is imperative (Orlikowski, 1996; Hatch, 1999; March & Simon, 1958; Tsoukas & Chia, 2002), and liminal behavior may consequently be perceived as exasperating, infuriating, irritating, annoying, distracting, and even threatening.

We choose to define organizational liminal space as an *uncertain and undefined situation, process or phenomenon characterized by borders, thresholds and in-betweenness*. By doing so, we have a concept to help us analyze how recognition of mismatch as well as inquiry into surprising situations may be confined, sanctioned, or even subjected to self censorship. While liminal behavior and artforms (e.g., foolish behavior, role play, improvisation) is expected and welcomed in certain liminal contexts often described by anthropologists and ethnographers (carnival, rites of passage, etc.), they are often challenging the existing order and provoking the established hegemony in formal organizational settings, thus often become problematic. Instead of leading to new knowledge, the result may be non-learning.

A liminal view on organizational learning fallacies

In the following sections we will return to the three fallacies of organizational learning that we previously identified; *the rational fallacy, the mismatch fallacy, and the myopic fallacy*, and we will discuss their consequences in the light of liminality.

The rational fallacy: Ignoring emotional responses to surprise in organizations

It seems like emotions become particularly important in liminal situations. This is shown in the illustrious Iowa card game experiment (Damasio, 1994, p. 212-222): In front of you are four decks of cards. Two of them are blue and two are red. Each card in those decks either wins you a sum of money, or costs you some money. You are asked to turn cards from any of the two decks, in order to maximize your winnings. The scientists have, however, not told you that the red decks are a minefield. You may win, but when you loose on the red cards you loose substantially. The only way of winning is by taking cards from the blue decks. Then you win small sums steadily, and at the same time you risk small penalties. What the experiment showed was essentially that the gamblers figured the game out before they realized it. They also began making adjustments in their gambling strategy before they were consciously aware of their adjustments (Damasio, 1994; Gladwell, 2005). When the neuroscientists measured the activity of the sweat glands below the skin in the palm of the gamblers' hands, they found that the players started generating stress responses to the red decks by the tenth card. Even more impressive; the scientists proved that the gamblers changed their behavior as well, in the sense that they started favoring the blue cards. But it took forty more cards before they were able to say that they had a hunch about what was wrong with the decks².

Experiments like this have paved the way for what has been known as the somatic marker hypothesis (Bechara & Damasio, 2005; Dalglish, 2004; Damasio et al., 1996). Emotions set the soma against which observation is rationally interpreted. Following the somatic marker hypothesis; prior experiences from comparable contexts may have induced positive or negative emotions that lead to automatic reactions to mismatch and surprise. Since an emotion has two dimensions; direction and intensity, emotions may strongly influence on whether you choose to get closer

² There have been presented other ways of interpreting the Iowa card game experiment, see for example Maia and McClelland (Maia & McClelland, 2004)

or further away from a liminal situation, and on how strongly and immediate you should react. Emotions thus aid our decision making process and help us sort between different possibilities. They provide a structuring and directing element to support our decision making. Emotions direct attention, and help us avoid or approach situations and things. The combined directionality and emotionality confers a 'vector character' upon emotions

The Iowa gambling experiment was a laboratory study. That is; the participants were met with expectations different from what would have been the case if they were actors in a formal organization. They knew this was an experiment and that failing was expected and allowed. We suspect that emotions will play a more subtle but also more important role in formal organizational contexts. When individuals find themselves in liminal spaces, understood as uncertain and undefined situations, processes or phenomena characterized by borders, thresholds and in-betweenness; we anticipate that these situations will often be recognized as negative deviances from the organization's standard operating mode. As such, a negative emotional response will be triggered that may lead the person to ignore or conceal the deviance. This is a form of learned ignorance or self censorship that is preferred to being sanctioned from authorities. Consequently, we expect that actors in formal organizations in most cases will associate discontinuity with negative emotions, and thus ignore or conceal liminal spaces. Also, we anticipate that reacting to the unforeseen and uncertain with liminal behavior such as playing, improvising, and fooling around, may trigger negative responses where they would have been received with applause in less formal contexts such as family gatherings, parties, carnival, and rites of passage.

We hold forth that the explanation is institutional rather than psychological: Modern organizations are based on the idea that bundles of standardized sets of responses solve problems (March & Simon, 1958) and processes of institutionalization and creation of standardized routines form the basis of organizational continuity (Levinthal, 1991). Consequently; organizational actors have learned that routines are important, and that compliance to routines, plans and procedures secure continuity. A deviation from status quo in the form of surprise or mismatch may thus trigger negative emotional responses such as fear and anxiety, resulting in a possible neglect of the divergence, or avoidance of the recommended inquiry into the situation at hand. Institutionalization has emotional effects on individuals and how they make sense of their reality. 'The elimination of emotion and feeling from the human picture entails an impoverishment of the subsequent organization of experience', Damasio states (2003, p.159) (Damasio, 2003, p.159). The result may be non-learning because of the absence of direction and intensity of emotions, both of which are indispensable for learning to occur..

The mismatch fallacy: Ignoring learning under continuity

It is obviously possible to be surprised by continuity. If you expected a change, and that change did not take place, it follows from canonized organizational learning theory that this may be a starting point for a learning process. If mismatch between expectations and outcome is a prerequisite for learning, then one may also learn from continuity that comes as a surprise.

However; it should also be possible to learn from continuity, even though you are not surprised by it: It requires that you recognize it as a continuous phenomenon in front of you, and (1) reflect upon why you are not surprised, or (2) inquire into what may cause the permanence. Let's imagine a meeting at work that follows the same pattern as this type of meeting always tends to. You realize that what you experience is a repetition of what you use to see in these meetings. And it comes as no surprise to you. There is no mismatch at all. So; can you – and should you – learn from this situation? We think so. Continuity is a starting place for learning, just as well as discontinuity is.

One consequence of limiting learning to situations created by mismatch is that learning becomes associated with discontinuity and failure, and as such, learning possibilities in ongoing daily work may not be taken notice of. This may be utterly dangerous, as shown by Wicks in his study of the 1992 explosion at Westray Mines (Wicks, 2001). Individual perceptions of the inherent risks in work practices had become clouded. A mindset of invulnerability had developed as a result of regulative aspects of the institutional environment backed by powerful sanctions, norms and rules stemming from social obligations, and cognitive elements creating constitutive rules that were obeyed because they formed the basis of individuals' social identities as coal miners and as men. The workers' behavior was a function of how they interpreted the environment, and these processes had established a collective taken-for granted understanding and attitude that created a reinforcing set of institutional expectations. A harmful mindset had institutionalized. As Wicks points out; in an industry like underground mining, reinforcing sets of institutional expectations can have catastrophic consequences; in many organizations, however, their negative consequences can easily go unnoticed, but still be harmful.

What Wick describes in his analysis of the mining disaster finds a parallel in Weick and Sutcliffe description of mindlessness (Weick & Sutcliffe, 2001). We can observe mindlessness in situations where early signs of danger, changes in context, and outdated diagnoses of problems are unnoticed. Instead people tend to act on automatic pilot, following recipes, and imposing old categories to classify what they see, and thus mislabeling new with old contexts. At the same time, people feel like they understand what's going on, even if they don't. Weick and Sutcliff portray an organizational pathology where we favor the familiar and mature at the expense of novelty and innovation (Ahuja & Lampert, 2001). Mindfulness, conversely, is a preoccupation with updating, according to Weick and Sutcliff, growing in an understanding that knowledge and ignorance grow together. Mindlessness on the other hand leads to ignorance towards mismatch and surprise. It is fueled by "silent" institutional forces: As an example of a silent contributor to mindlessness, Weick and Sutcliffe point to the zeal for planning. Plans act the same way as expectations, they hold forth. "Disconfirming evidence is avoided, and plans lure you into overlooking a buildup of the unexpected quite as handily as do other expectations" (Weick & Sutcliffe, 2001, p. 43). Brunsson claims that non-learning organizations have developed a proficiency in ignoring. Not only do they ignore problems, they also ignore their own attitudes to these problems and the possible solutions. Brunsson's explanation is institutional: Distribution of responsibility through procedures support and reinforce the non-learning behavior (Brunsson, 1998).

In order to better understand the challenges of organizational learning, we hold forth

that there is a need to (1) recognize how learning takes place under continuity, and (2) understand the liminality inhibited in mismatch situations. The first will require that we transgress the propensity to delimit learning to mismatch situations and surprise. The latter will require an understanding of how individuals in mismatch situations may find themselves “betwixt-and between” the normal and the different (Turner, 1979), and as such, “caught” in a state where local needs and canonized practice collide.

The myopic fallacy: Ignoring the formative context

The first way of organizational learning clearly has a bias towards individual learning, as illustrated in the works of Argyris. As an example; defensiveness is explained as a process escalating from the individual to supra-individual levels, finally establishing organizational defensive routines. The defensiveness is explained psychologically: We are programmed to apply a deeply defensive strategy in order to avoid embarrassment, risk, vulnerability, and we do not want to appear incompetent in the face of others and ourselves (Argyris, 1994).

We do not claim that defensiveness does not have psychological explanations. We rather maintain that focusing on the individual or group level of analysis may lead to myopia (March, 1991; Levinthal & March, 1993). The consequence is that both explanans and explanandum become restricted to what we see most clearly in nearsight. It is a propinquity trap, according to Ahuja and Lampert, where we end up favoring exploring what is already familiar to us – we look for solutions near to existing solutions (Ahuja & Lampert, 2001).

A series of studies illustrate how forces that may fall outside our immediate nearsight may constitute local action: Brunsson’s study of the public sector in Sweden elucidates how institutional pressure may lead to hypocrisy as a strategy to survive when conflicting demands arise (Brunsson, 1993). Kets de Vries and Miller demonstrate how some organizations develop pathological tendencies and deserve psychiatric diagnosis in their attempts to master conflicting demands (Kets de Vries & Miller, 1984). Meyer and Rowan describe how conformity towards institutional rules and forms of working may come in contrast to criteria of effectiveness in the organization, and in some cases ends up in “ceremonial conformity” (Meyer & Rowan, 1977). Brown and Duguid illustrate how the “non-canonical” knowledge of the reps at Rank Xerox was driven out of sight due to heavy celebration of the official “canonized” knowledge and practices voiced by management (Brown & Duguid, 1991).

We maintain that limiting the level of analysis to the micro level in all these cases will lead to a restricted understanding of organizational learning. Also, it will conceal the dysfunctional effects of myopia in practice. As an example of the latter; improvisation has become increasingly celebrated as a hallmark of good practice (Schön, 1983; Brown & Eisenhardt, 1997; Barrett, 1998; Hatch, 1999; van der Bij et al., 2003). The problem is that improvisation is myopic, with a “...local intelligence that is short sighted”, according to Karl Weick (Weick, 1993, p.373). It is based on an action-oriented sensitivity for local conditions, but not necessarily for the needs of the organization as a whole. The solutions which are found locally may create problems in other parts of the organization. Thus, what seems to be successful on-the-spot learning in a local mismatch situation may in a peripheral view be recognized as a

threat to the quality and effectiveness of the organization, and can endanger people's lives because safety routines are ignored and rules are bent.

The myopic fallacy leads to a disregard of the formative context. For example, in the celebration of improvisation, we tend to forget that a formal work organization is very different from a jazz orchestra. The formative context, understood as the set of pre-existing institutional arrangements, cognitive frames and imageries that individuals regularly enact (Ciborra & Lanzara, 1994), has a very different influence upon the actors in a bureaucratic organization than it has in more informal contexts. If organizational learning is to transgress its myopic heritage, it has to recognize the institutional forces that exercise power upon the actor. That is not to say that one should submit to a structural view of organization, but rather look for relational explanations that avoid the macro-to-micro or micro-to-macro dichotomy. As Hodgson (2007) points out, individuals are in-between upward and downward causation. They possess the ability to change institutions, but they are also formed by the institutions. Through reconstitutive downward causation institutions structure, constrain and enable individual behaviors. The institutions have the power to mould dispositions, to constrain and change aspirations, and to act upon individual habits of thought and action. This does not imply that institutions directly, entirely or uniformly determine individual aspirations, but that these processes may have significant downward effects on individuals (Hodgson, 2007).

Conclusion

Organizations become institutions through processes of standardization and routinization that lay the basis for the formation of continuity in an organization's behavior (Levinthal, 1991). Routines are supraindividual; when people leave organizations, action routines persevere and offer a structure which provides continuity (Weick, 1991; Weick & Gilfillan, 1971). Since continuity essentially is the very essence of organizational survival (Srivastva, 1983), liminality, as something "different" and "abnormal", becomes problematic in organizations. Even though liminal spaces should be seen as opportunities for learning and innovation, we suggest that the association of learning with mismatch, mismatch with discontinuity, discontinuity with failure, and failure with negative emotions, may lead actors to avoid or ignore liminal spaces and as such contribute to an unlearning organization.

The very nature of bureaucratic organizations produces liminal spaces; mismatch situations and thresholds between learning and non-learning (Cunha & Cabral-Cardoso, 2006). At the same time organizations also make people feel guilty if they recognize liminality, and if they react to threshold situations with liminal behavior. The heavy weight on rules and procedures in bureaucratic organizations force their members into liminality, but they also drive individuals to ignore or avoid liminal situations because of these situations' low degree of legitimacy. Breaking out of the dilemmas through liminal behavior such as play, foolishness, or improvisation, tend to be sanctioned, confined, or subjected to self censorship. It is a double blind situation (Bateson et al., 1956) produced by institutional forces.

In liminal organizational spaces individuals try to make sense of the confusing situation based on what they have previously learned is legal and legitimate and what is not. If engaged in deviance, managers tend to feel guilty (Veiga et al., 2004) and may find themselves caught in a vicious circle of caution, blame, lack of reflection and unproductive communication (Vince & Saleem, 2004). Cunha and Cabral-Cardoso claim that guilt is normal, since deviation, even when morally correct, still is a deviation. If the liminal situation is not overcome and the perceived formal order regained, justification may be a strategy in order to reduce the cognitive dissonance (Cunha & Cabral-Cardoso, 2006, p. 217). The individual may do what s/he can to reduce deviance and regain continuity, or s/he may interpret the situation so that the mismatch is reduced to a perceived “acceptable level” that does not require corrective action. The individual might have learned how to handle a liminal situation, ‘betwixt-and between the normal’ (Turner, 1982), but in either case, organizational learning is hindered.

In this article we have identified three fallacies. They are summarized in Table 2.

Fallacies:	The Rational Fallacy	The Mismatch Fallacy	The Myopic Fallacy
Blindness:	Ignores how institutional pressure shapes emotional responses	Ignores learning under continuity	Ignores the formative context

Table 2: Three Fallacies in Organizational Learning

According to Webster's Revised Unabridged Dictionary³, one explanation of fallacy is 'that which misleads the eye or the mind'. A fallacy may lead your attention away from what is important. That does not imply that what you see is wrong, it might just be a part of a larger picture. What you do not see may be just as important as what you see. We claim that three interrelated aspects have fallen outside the headlight of dominant organizational learning theory: First, we call for increased attention to the emotional effect institutional forces have on individuals in liminal situations. In order to do so, one needs to avoid what we have called the rational fallacy. Second; we would like to see more focus on learning under continuity. Thus, one should stay clear of what we have coined the mismatch fallacy. Third and finally, we point to the need for analyzing the effect of the formative context and the reconstitutive downward causation. One should accordingly keep away from the myopic fallacy.

Several scholars associated with what Elkjaer's second and third way of organizational learning have proposed alternatives to Argyris and Schön's rational approach. Easterby-Smith, for example, makes a case for multi-disciplinary approaches (Easterby-Smith, 1997). Blackler and McDonald argue for understanding the role of power in situations where the needs of the here-and-now overshadow normal routines and authority hierarchies (Blackler & McDonald, 2000). Vince explores the paradoxes and politics of organizational learning and points to the need

³ Webster's Revised Unabridged Dictionary. Retrieved April 08, 2008, from Dictionary.com website: <http://dictionary.reference.com/browse/fallacy>

for understanding the role of emotions in organizational learning (Vince & Martin, 1993; Vince, 2001), while Elkjaer calls for a “third way” where intuition, emotions and commitment are allowed to play a more significant role (Elkjaer, 2004). We do acknowledge these and many other novel contributions to the organizational learning field. However, we maintain that there still is a need for developing the *organizational* in organizational learning. We would like to see more studies that break out of the the field’s myopic tendencies, studies that analyze individual emotional responses in the light of institutional pressure, as well as studies that do not take mismatch as a prerequisite for learning. Mismatch and surprise are utterly important in organizational learning, but routines and continuity are the very core of the idea of the bureaucratic organization, and represent opportunities for learning both when they are changed and when they are not.

Reference List

- Ahuja, G. & Lampert, C. M. (2001). Entrepreneurship in the large corporation: a longitudinal study of how established firms create breakthrough inventions. *Strategic Management Journal*, 22, 521-543.
- Anderson, A. R. (2005). Enacted Metaphor: The Theatricality of the Entrepreneurial Process. *International Small Business Journal*, 23, 587-603.
- Argyris, C. (1976). Theories of Action That Inhibit Individual Learning. *American Psychologist*, 31, 638-654.
- Argyris, C. (1977). Double Loop Learning in Organizations. *Harvard Business Review*, 55, 115-125.
- Argyris, C. (1994). Good Communication That Blocks Learning. *Harvard Business Review*, 72, 77-85.
- Argyris, C., Putnam, R., & Smith, D. M. L. (1985). *Action science*. Jossey-Bass San Francisco.
- Argyris, C. S. & Schön, D. A. (1996). *Organizational learning II: Theory, method and practice*. Reading, MA: Addison Wesley.
- Argyris, C. & Schön, D. A. (1978). *Organizational Learning: A Theory of Action Perspective*. Reading, MA: Addison-Wesley.
- Bargiela-Chiappini, F. (2007). Liminal ethnography: understanding segregated organisations. *Qualitative Research in Organizations and Management: An International Journal*, 2, 126-143.
- Barrett, F. J. (1998). Creativity and improvisation in jazz and organizations: Implications for organizational learning. *Organization Science*, 9, 605-622.
- Bateson, G., Jackson, D. D., Haley, J., & Weakland, J. (1956). Toward a theory of schizophrenia. *Behavioral Science*, 1, 251-264.
- Bechara, A. & Damasio, A. R. (2005). The somatic marker hypothesis: A neural theory of economic decision. *Games and Economic Behavior*, 52, 336-372.
- Blackler, F. & McDonald, S. (2000). Power, Mastery And Organizational Learning. *Journal of Management Studies*, 37, 833-852.
- Brown, J. S. & Duguid, P. (1991). Organisational Learning and Communities-of-Practice: Toward a Unified View of Working. *Organisation Science*, 2, 40-57.
- Brown, S. L. & Eisenhardt, K. M. (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. *Administrative Science Quarterly*, 42, 1-34.
- Brunsson, K. (1998). Non-Learning Organizations. *Scandinavian Journal of Management*, 14, 421-432.
- Brunsson, N. (1993). Ideas and actions: justification and hypocrisy as alternatives to control. *Accounting, Organizations and Society*, 18, 489-506.
- Bryans, P. & Smith, R. (2000). Beyond training: reconceptualising learning at work. *Journal of Workplace Learning*, 12, 228-235.
- Buckingham, S., Marandet, E., Smith, F., & Wainwright, E. (2006). The liminality of training spaces: Places of private/public transitions. *Geoforum*, 37, 895-905.
- Burgoyne, J., Pedler, M., & Boydell, T. (1994). *Towards the learning company: concepts and practices*. London: McGraw-Hill Book Company.
- Ciborra, C. & Lanzara, G. F. (1994). Formative Contexts and Information Technology: Understanding the Dynamics of Innovation in Organizations. *Accounting, Management and Information Technology*, 4, 61-86.

- Clegg, S., McManus, M., Smith, K., & Todd, M. J. (2006). Self-development in Support of Innovative Pedagogies: Peer support using email. *International Journal for Academic Development, 11*, 91-100.
- Cunha, M. P. & Cabral-Cardoso, C. (2006). Shades of Gray: A Liminal Interpretation of Organizational Legality-Illegality. *International Public Management Journal, 9*, 209-225.
- Czarniawska, B. & Mazza, C. (2003). Consulting as a liminal space. *Human Relations, 56*, 267.
- Dalgleish, T. (2004). The emotional brain. *Cortex, 14*, 199-208.
- Damasio, A. R. (1994). *Descartes' Error: Emotion, rationality and the human brain*. New York: Avon Books.
- Damasio, A. R. (2003). *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*. New York: Harcourt.
- Damasio, A. R., Everitt, B. J., & Bishop, D. (1996). The Somatic Marker Hypothesis and the Possible Functions of the Prefrontal Cortex [and Discussion]. *Philosophical Transactions: Biological Sciences, 351*, 1413-1420.
- Dayal, S. (2001). Managing Ecstasy: a subaltern performative of resistance. *Angelaki: Journal of the Theoretical Humanities, 6*, 75-90.
- Deflem, M. (1991). Ritual, Anti-Structure, and Religion: A Discussion of Victor Turner's Processual Symbolic Analysis. *Journal for the Scientific Study of Religion, 30*, 1-25.
- Dressman, M. (1997). Congruence, resistance, liminality: Reading and ideology in three school libraries. *Curriculum Inquiry, 27*, 267-315.
- Easterby-Smith, M. (1997). Disciplines of Organizational Learning: Contributions and Critiques. *Human Relations, 50*, 1085-1113.
- Easterby-Smith, M., Antonacopoulou, E., Simm, D., & Lyles, M. (2004). Constructing Contributions to Organizational Learning: Argyris and the Next Generation. *Management Learning, 35*, 371.
- Elkjaer, B. (2004). Organizational Learning: The 'Third Way'. *Management Learning, 35*, 419-434.
- Feldman, M. S. (2000). Organizational Routines as a Source of Continuous Change. *Organization Science, 11*, 611-629.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford.
- Friedman, V. J. (2001). Action Science: Creating Communities of Inquiry in Communities of Practice. In P.Reason & H. Bradbury (Eds.), (pp. 159-170). London: Sage Publications Inc.
- Ganim, J. M. (2007). Gower, Liminality, and the Politics of Space. *Exemplaria, 19*, 90-116.
- Garsten, C. (1999). Betwixt and between: Temporary Employees as Liminal Subjects in Flexible Organizations. *Organization Studies, 20*, 601.
- Gladwell, M. (2005). *Blink: The Power of Thinking Without Thinking*. New York: Back Bay Books.
- Hatch, M. J. (1999). Exploring the empty spaces of organizing: How improvisational jazz helps redescribe organizational structure. *Organization Studies, 20*, 75-100.
- Hodgson, G. M. (2007). Institutions and Individuals: Interaction and Evolution. *Organization Studies, 28*, 95.
- Honey, P. & Mumford, A. (1992). *The Manual of Learning Styles*. Maidenhead: Peter Honey.
- Huber, G. P. (1991). Organizational Learning: The Contributing Processes and the Literatures. *Organization Science, 2*, 88-115.
- Jarvis, P. (2006). *Towards a Comprehensive Theory of Human Learning*. New York: Routledge.
- Kets de Vries, M. F. R. & Miller, D. (1984). *The Neurotic Organization*. (Jossey-Bass ed.).

- Leitch, R. & Day, C. (2000). Action research and reflective practice: towards a holistic view. *Educational Action Research*, 8, 179-193.
- Levinthal, D. A. (1991). Organizational Adaptation and Environmental Selection-Interrelated Processes of Change. *Organization Science*, 2, 140-145.
- Levinthal, D. A. & March, J. G. (1993). The Myopia of Learning. *Strategic Management Journal*, 14, 95.
- Lugones, M. (2006). On Complex Communication. *Hypatia: A Journal of Feminist Philosophy (Project Muse)*, 21, 75-85.
- Maia, T. V. & McClelland, J. L. (2004). From the Cover A reexamination of the evidence for the somatic marker hypothesis: What participants really know in the Iowa gambling task. *Proc Natl Acad Sci US A*, 101, 16075-16080.
- March, J. G. & Simon, H. A. (1958). *Organizations*. John Wiley & Sons Inc.
- March, J. G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2, 71.
- March, J. G. (1994). *A Primer on Decision Making: How Decisions Happen*. New York: Free Press.
- McCadden, B. M. (1997). Let's Get Our Houses in Order: The Role of Transitional Rituals in Constructing Moral Kindergartners. *The Urban Review*, 29, 239-252.
- McNamara, O., Roberts, L., Basit, T. N., & Brown, T. (2002). Rites of Passage in Initial Teacher Training: ritual, performance, ordeal and Numeracy Skills Test. *British Educational Research Journal*, 28, 863-878.
- Meyer, J. H. F. & Land, R. (2005). Threshold concepts and troublesome knowledge (2): Epistemological considerations and a conceptual framework for teaching and learning. *Higher Education*, 49, 373-388.
- Meyer, J. W. & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83, 340-363.
- Miles, R. J. (2006). Virgin on the edge: Luis Buell's transnational trope. *Studies in Hispanic Cinemas*, 2, 169-188.
- Moore, A. (1980). Walt Disney World: Bounded Ritual Space and the Playful Pilgrimage Center. *Anthropological Quarterly*, 53, 207-218.
- Orlikowski, W. J. (1996). Improvising Organizational Transformation Over Time: A Situated Change Perspective. *Information Systems Research*, 7, 63.
- Phillips, D. C. & Soltis, J. F. (1998). *Perspectives on learning*. (3rd ed.) New York: Teachers College Press.
- Piaget, J. (1985). *The Equilibration of Cognitive Structures: The Central Problem of Intellectual Development*. Chicago: University of Chicago Press.
- Pierce, K. (2007). Betwixt and Between: Liminality in Beginning Teaching. *The New Educator*, 3, 31-49.
- Powley, E. H. & Cameron, K. (2005). Organizational Healing: Lived Virtuosity amidst Organizational Crisis. *Michigan Ross School of Business Working Paper Series*.
- Schön, D. A. (1983). *The reflective practitioner*. New York: Basic Books.
- Senge, P. M. (1990). *The fifth discipline*. New York, NY: Doubleday.
- Sharpe, M. (2005). Maghrebi Migrants and Writers: Liminality, Transgression and the Transfer of Identity. *Dialectical Anthropology*, 29, 397-421.
- Srivastva, S. (1983). Introduction: Common themes in executive thought and action. In Surseh Srivastva and Associates (Ed.), *The Executive Mind*. (pp. 1-14). San Francisco: Jossey-Bass.
- Starr-Glass, D. & Schwartzbaum, A. (2003). A Liminal Space: challenges and opportunities in accreditation of prior learning in Judaic Studies. *Assessment & Evaluation in Higher Education*, 28, 179.

- Sturdy, A., Schwarz, M., & Spicer, A. (2006). Guess who's coming to dinner? Structures and uses of liminality in strategic management consultancy. *Human Relations*, 59, 929-960.
- Tempest, S. & Starkey, K. (2004). The Effects of Liminality on Individual and Organizational Learning. *Organization Studies*, 25, 507.
- Terrill, R. E. (2006). Going Deep. *Southern Communication Journal*, 71, 165-173.
- thaus-Reid, M. M. (2006). Book Review: Ethics and Liminality. *The Expository Times*, 117, 170-171.
- Torbert, W. R. (1972). *Learning from experience toward consciousness*. New York: Columbia University Press.
- Torbert, W. R. (1991). *The power of balance. Transforming self, society, and scientific inquiry*. Newbury Park, Calif: Sage.
- Trice, H. M. & Beyer, J. M. (1984). Studying Organizational Cultures through Rites and Ceremonials. *The Academy of Management Review*, 9, 653-669.
- Tsoukas, H. & Chia, R. (2002). On organizational becoming: Rethinking organizational change. *Organization Science*, 13, 567-582.
- Turner, V. W. (1979). Frame, Flow and Reflection: Ritual and Drama as Public Liminality. *Japanese Journal of Religious Studies*, 614, 465-499.
- Turner, V. W. (1982). *From Ritual to Theatre: The Human Seriousness of Play*. Performing Arts Journal Publications.
- van der Bij, H., Song, M., & Weggeman, M. (2003). An empirical investigation into the antecedents of knowledge dissemination at the strategic business unit level. *Journal of Product Innovation Management*, 20, 163-179.
- Van Gennep, A. (1960). *The Rites of Passage, trans. MB Vizedom and GL Caffee*. London: Routledge and Kegan Paul.(Orig. pub. 1909.).
- Veiga, J. F., Golden, T. D., & Dechant, K. (2004). Why managers bend company rules. *Academy of Management Executive*, 18, 84-90.
- Vince, R. (2001). Power and emotion in organizational learning. *Human Relations*, 54, 1325.
- Vince, R. & Martin, L. (1993). Inside Action Learning: an Exploration of the Psychology and Politics of the Action Learning Model. *Management Learning*, 24, 185.
- Vince, R. & Saleem, T. (2004). The Impact of Caution and Blame on Organizational Learning. *Management Learning*, 35, 133.
- Vince, R., Sutcliffe, K., & Olivera, F. (2002). Organizational learning: new directions. *British Journal of Management*, 13, 1-6.
- Wallace, T. (2006). 'Working of the Train Gang': Alienation, Liminality and Communitas in the UK Preserved Railway Sector. *International Journal of Heritage Studies*, 12, 218-233.
- Waskul, D. D. (2005). Ekstasis and the internet: liminality and computer-mediated communication. *New Media & Society*, 7, 47-63.
- Weick, K. (1993). Sensemaking in Organizations: Small Structures with Large Consequences. In J.K.Murnighan (Ed.), *Social Psychology of Organizations* (.).
- Weick, K. E. & Gilfillan, D. P. (1971). Fate of Arbitrary Traditions in a Laboratory Microculture. *Journal of Personality and Social Psychology*, 17, 179-191.
- Weick, K. E. & Sutcliffe, K. M. (2001). *Managing the unexpected: assuring high performance in an age of complexity*. San Francisco: Jossey-Bass.
- Weick, K. E. (1979). *The social psychology of organizing*. (2d ed.) Reading, Mass.: Addison-Wesley Pub. Co.
- Weick, K. E. (1991). The nontraditional quality of organizational learning. *Organization Science*, 2, 116-124.

- Wicks, D. (2001). Institutionalized Mindsets of Invulnerability: Differentiated Institutional Fields and the Antecedents of Organizational Crisis. *Organization Studies*, 22, 659.
- Wooddell, V. (2003). An Interview with Chris Argyris. *Organization Development Journal*, 21, 67-70.