Barriers to organizational learning: An integration of theory and research

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This paper develops a theoretical foundation to describe and explain impediments to organizational learning (OL). Based on the expanded 4I model (Crossan *et al*. 1999. *Academy of Management Review*, **24**, 522–537), which was further developed by Lawrence *et al*. (2005. *Academy of Management Review*, **30**, 180–191), different learning barriers are categorized and discussed with regard to factors complicating or impeding OL. Finally, the paper analyses the impact of particular barriers on different kinds of organizational units, the relationship between OL barriers, single-loop and double-loop learning, as well as typical combinations of barriers and their respective impact on organizational performance.

Introduction

Since its introduction by Cangelosi and Dill (1965), the topic of organizational learning (OL) has received increasing interest from researchers and practitioners, especially in the last two decades (Crossan *et al*. 1999). Although early concepts already addressed factors that might hinder OL, such as the discussion on interruptions of the learning cycle (March and Olsen 1975) or on defensive routines (Argyris 1990), the literature is still dominated by an optimistic belief that strategies, structures, values and norms for OL can be (easily) implemented and will generally lead to positive results for the organization and its members (Berthoin-Antal *et al*. 2003).

Since the harsh critique of Coopey (1995) concerning the lack of research into the importance of politics as a source of resistance to OL, some progress has been made. An increasing number of papers have addressed the mechanisms that work against, hinder and suppress OL (e.g. Bain 1998; Berthoin-Antal *et al*. 2003; Kim 1993; Nason 1994; Tucker *et al*. 2002). We do have evidence that OL activities may be suppressed by political (e.g. Van de Ven and Polley 1992: Deceiving negative results to prevent sanctions), cultural (e.g. Vince and Saleem 2004: Blame culture) and structural forces (e.g. Morgan 1986: High division of labour). Yet, a systematic review of such factors remains to be carried out.

For theoretical and practical reasons, we propose that it is helpful to understand *barriers* to OL. We define barriers as those factors either preventing OL or, at least, impeding its practicability. From a more academic point of view, the analysis of impediments contributes

to a deeper understanding of the underlying dynamics of OL as it complements existing theory and research on factors fostering and supporting OL (e.g. Edmondson and Moingeon 1996; Friedman *et al*. 2003). For practitioners, a systematic review of barriers to OL is necessary to develop strategies and tactics to counter such factors. While there are some scholars who have already developed ideas concerning barriers and blockages to OL, these attempts either focus on single factors (e.g. Bain 1998; Coopey 1995; Tucker *et al*. 2002) or present a list of possible impediments to OL without a clear theoretical foundation (e.g. Berthoin-Antal *et al*. 2003; Kim 1993; Nason 1994).

Hence, the goals of the present paper are (a) to analyse existing evidence, concepts and theory concerning barriers to OL, (b) to integrate these aspects into a model of the OL process to (c) point to fields of future research concerning OL. To achieve these goals, we draw on literature which includes the keywords 'organizational learning' or 'learning organization' alone or in combination with '(learning) barriers', '(learning) obstacles', '(learning) impediments' or a combination of these from the PsychINFO, SocINDEX, ABI/INFORM, ERIC and EJS E-Journals databases. In the following, we first analyse the different perspectives of OL research to develop a definition of OL which is suitable for the present purpose. Second, we present our rationale for the current review by defining what literature will be included and categorizing the factors preventing or hindering OL that have been described so far. Third, we choose a theoretical framework that is helpful to analyse the barriers in the OL process, discuss single barriers and their relationships, and derive propositions. Finally, we outline the implications for future research in the field of OL.

Perspectives on Organizational Learning

Different theoretical conceptions of OL have been developed (for overviews, see: Easterby-Smith 1997; Easterby-Smith *et al*. 1998;

Edmondson and Moingeon 1996; Kluge and Schilling 2003; Nicolini and Meznar 1995). Learning can be defined as a relatively permanent change in knowledge or skill resulting from experience (Weiss 1990). The definition emphasizes the dual nature of learning as process (perceiving and processing information, i.e. experience) and result (modified knowledge or skill) (cf. Dodgson 1993). Like learning, the term organization has a dual meaning: Institutional (organization as a social system of members pursuing common goals) and instrumental (organization as a body of structures and rules that regulate human behaviour in the workplace) (Schanz 1992). Although these relatively general notions are not clear cut, they do emphasize different approaches, which are also reflected in the concepts of OL (Table 1) compiled by Kluge and Schilling (2000).

As the overarching goal of this paper is to develop a theoretical framework that integrates existing evidence and theory on barriers to OL, we concentrate on the perspective of OL as a process, rather than on its results. Our perspective is organizational psychological, as we focus on individual and organizational behaviour that prevents or hinders OL. Hence, the purely technological (e.g. the functionality and usability of IT solutions such as organizational memory information systems; Kühn and Abecker 1997) and economic aspects of OL (e.g. the measurement of intellectual capital; Brooking 1999) in the literatures of information technology and knowledge management will not be regarded.

We define OL as an organizationally regulated collective learning process in which individual and group-based learning experiences concerning the improvement of organizational performance and/or goals are transferred into organizational routines, processes and structures, which in turn affect the future learning activities of the organization's members. Rooted in the perspective of OL as a collective process of information acquisition, dissemination and storage, this definition takes three major aspects in the literature into account:

Table 1. Perspectives of organizational learning

	Organization as social system	Organization as structures and rules
Learning as process	Collective process of learning: • *Groups* (building communities of practice) • *Organizational development* (changing the shared mental models of organizational members) • *Information processing* (acquiring, processing, and distributing shared organizational knowledge) • *Organizational politics* (preventing the acquisition, processing, and distribution of shared knowledge by micro-political activities)	Structured process of learning: • *Information technology* (distributing and storing information in social systems by IT-tools) • *Knowledge management* (planning, managing, and controlling of information and knowledge in social systems)
Learning as result	Collective learning result: • *Organizational culture* (culture as a symbol and store of created, learned, and distributed material and immaterial artefacts)	Learning result by implemented structures and rules: • *Strategic management* (competitive advantages based on systems of scanning of and adapting to the environment) • *Production management* (rises in efficiency and productivity based on institutionalized systems of continuous improvement)

1. Individual and OL are mutually dependent on each other (Popper and Lipshitz 2000) because individuals learn as representatives of their organization, while all knowledge acquired must be retained appropriately (in the form of documents, routines, processes and structures, for instance) for it to remain available, even if an individual leaves the organization.

2. As March (1991) points out in his seminal paper, organizations need both to exploit existing ideas and opportunities and to explore new ones to be successful in changing environments. While exploration is associated with the notion of learning experiences made by individuals and groups, exploitation is taken into account by including the aspect of transferring the experiences into organizational routines, structures and processes.

3. Different authors (Andreu and Ciborra 1996; Argyris and Schön 1996; Dodgson 1991; Fiol and Lyles 1985; Hawkins 1994; Senge 1990) distinguish between double-loop or higher-level (which questions the acceptability of the goals: 'accommodation') and single-loop or lower-level learning (which includes a continuous improvement of existing behaviour and a move towards a given goal: 'assimilation'). Both kinds of learning process imply the view of OL as a means of remedying performance-related or goal-related gaps in organizations.

An Integrative Model of Collective Learning Processes in Social Systems

To describe and explain the barriers of OL in a systematic manner, an appropriate model for the OL process has to be developed. An important contribution in this respect was made by Crossan *et al*. (1999). While they conceive OL mainly as a means of strategic renewal in organizations, their concept has a number of strengths which are particularly useful to our purpose. The model: (1) is dynamic in nature and articulates sub-processes in the course of OL (process-character of the model); (2) brings together individual, group and organizational levels of analysis (multilevel character of the model: takes into account interplay of individual and OL); (3) integrates the important tension between exploration and exploitation in OL (March 1991); and (4) is

relatively open to different kinds of experience-based changes (i.e. lower- and higher-level learning). A further advantage of the framework lies in its extension elaborated by Lawrence *et al*. (2005). Based on the 4I framework, Lawrence *et al*. developed a political model of OL. This is especially interesting for the goal of this paper, as power and politics are regarded as fundamental factors that shape the success or failure of such processes (Blackler and McDonald 2000; Coopey 1995; Easterby-Smith 1997).

The 4I model postulates four processes by which the different levels of OL (individual, group and organization) are bidirectionally connected:

1. *Intuiting*: This process of developing new insights and ideas based on personal experience is located within the individual.
2. *Interpreting*: In this step, the individual explains his/her insights through words and/or actions to him-/herself and – more importantly – to others.
3. *Integrating*: This step takes place at group level where a shared understanding among individuals and groups is achieved which allows for coherent, collective action within the organization.
4. *Institutionalizing*: Finally, shared understanding is implemented in systems, structures, procedures, rules and strategies, thereby becoming independent of its individual or group origins, and guides organizational action.

Lawrence *et al*. (2005) complements these four processes with four sociopolitical processes called influence, force, discipline and dominance (Figure 1). *Influence* involves a wide range of political tactics such as moral suasion, negotiation, ingratiation or persuasion. By affecting the costs and benefits that other organizational members associate with a certain idea, the creator or the champion can convince others to adapt to his/her view. The process of *force* is characterized by creating circumstances that restrict the options available to organizational members using formal authority to implement the new idea. The institutionalization of new ideas implies embedding them in the structures, routines and strategies of the organization. To overcome potential resistance to institutionalizing changes, *domination* is regarded as a particularly effective strategy. The range of available actions is restricted by changing material technologies (e.g. production machines, physical layout of workplace) and information systems (i.e. restricted access to data bases or providing pre-determined decision paths; Lawrence *et al*. 2005). Finally, the process of *discipline* implies altering the costs and benefits associated with the actions available to organizational members. It involves practices such as recruitment, socialization (i.e. enculturation, Nonaka 1994), compensation (i.e. which behaviours are rewarded or punished), training and team-based work.

Barriers to Organizational Learning in the 4I Framework

While proving an excellent basis for a deeper understanding of the OL process, Crossan *et al*. (1999) do not explicitly raise the issue of barriers to OL. Likewise, the contribution of Lawrence *et al*. (2005) concerning the political aspects of OL is particularly valuable for an analysis of the political causes of resistance towards OL. Nevertheless, the authors do not develop a systematic analysis of factors hindering or inhibiting OL. We therefore use the model as a framework to classify the barriers to OL described in the literature.

The four social psychological processes of intuiting, interpreting, integrating and institutionalizing can be used to categorize the barriers to OL with regard to the phases of the OL *process*. In this way, the dynamic aspect of OL is taken into account. In order to understand the barriers to OL better, it seems promising to combine this process view with a classification which is based on the *form* of the impediments. Following the discussion of different forms of power (Lawrence *et al*. 2005), the detrimental factors could be either actional-personal
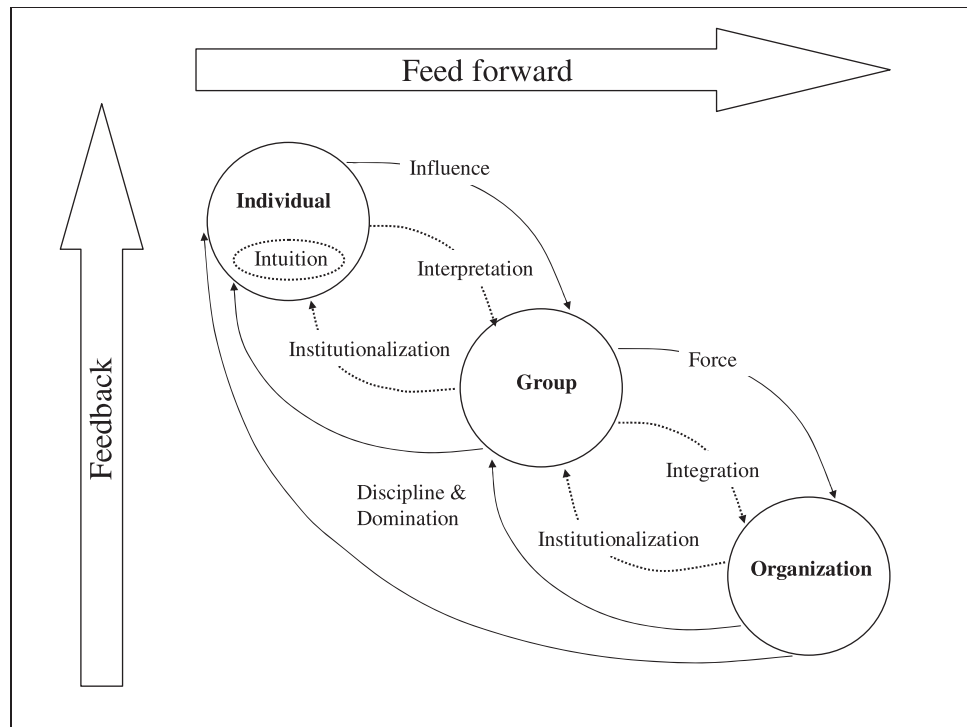
Figure 1. The social psychological and political processes of organizational learning (Lawrence *et al*. 2005, 183).

(characterized by individual, self-interested action as expressed in the processes of influence and force) or structural-organizational (characterized by existing routines, structures and practices of the organization as expressed in the processes of discipline and dominance). While Lawrence *et al*. (2005) focus on politics in the context of OL, our interest lies in a more general analysis of barriers to OL. Power and politics can be important obstacles to OL (Coopey 1995), but other aspects should also be taken into account (e.g. cognitive biases and mindsets; Berthoin-Antal *et al*. 2003). Consequently, we adopt a broader definition of actional-personal and structural-organizational forms of OL barriers. Actional-personal barriers are characterized by individual thinking, attitudes and behaviour. Structural-organizational barriers are rooted in organizational strategy, technology, culture and formal regulations. While both these forms are important from our point of

view, there is a need for a third one to analyse the constraints on OL.

As Lawrence and his colleagues are mainly concerned with organizational politics in the OL process, their analysis does not focus on the organizational environment. Nevertheless, the organizational environment is an important aspect in the OL process (see Fiol and Lyles 1985; Hannan and Freeman 1988; March and Olsen 1975; Miner and Haunschild 1995; Parke 1991). Duncan (1972) gives a fairly comprehensive list of components of the external organizational environment. It includes customers (distributors or actual users of products or goods), suppliers (new materials, equipment, product parts, labour), competitors (for suppliers, for customers), sociopolitical environment (government regulatory control over industry, public political attitude towards industry and its particular products, relationship with trade unions), and technology (meeting new
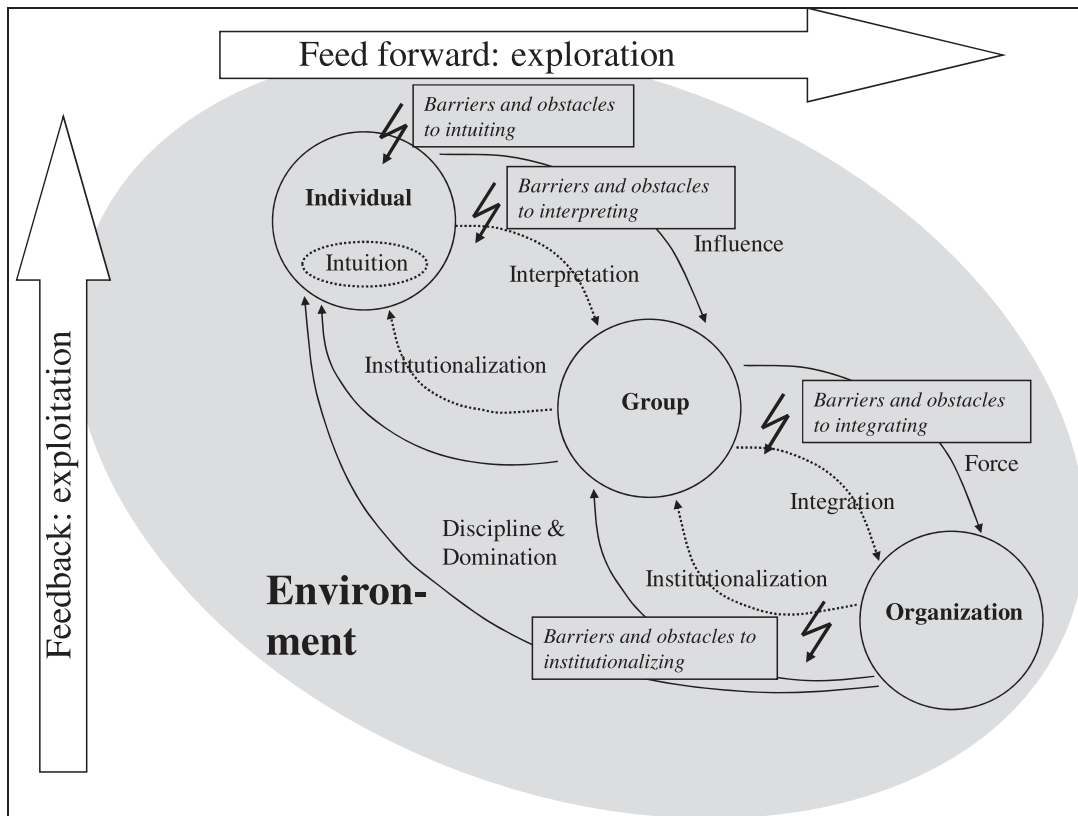
Barriers to organizational learning

Figure 2. The expanded 4I model of the organizational learning process and its barriers.

technological requirements in their own industry and related industries in production of a product or service, improving and developing new products by implementing new technological advances in the industry).

Accordingly, the 4I model is expanded as depicted in Figure 2. The environment represents those parts of the social and material world that members perceive as relevant for organizational action. It is depicted as the background of the organization as it is enacted (Weick 1977) by the organizational members at the different levels (individual, group and organization). The interrelation between the organization and its environment is not intended to represent the exchange of goods and services, but rather the flow and processing of information.

The organizational environment is relevant at all stages of the OL process: perceived changes and developments in the external organizational environment are important sources of ideas and innovations in organizations (e.g. technological or product innovations in the market, see Eells and Nehemiks 1984; structural or strategic changes of competitors, cf. Dodgson 1993). The generation of new ideas (i.e. intuiting), their interpretation by certain groups (e.g. based on occupational mindsets), their integration as organizational products and practices (e.g. influenced by culturally endorsed forms of authority), as well as their implementation (e.g. in the form of IT platforms) would rely on the complexity of the data collected from the environment. Therefore, the three forms of influencing factors (actional-personal, structural-organizational, societal-environmental) on the OL process should and can be distinguished from the levels of analysis (individual, group and organization).

Barriers to Organizational Learning: Research and Propositions

As Berthoin-Antal *et al*. (2003) concluded, conceptualization on OL barriers is still quite fragmented. Based on the two facets (process and form), a systematic overview of the barriers to OL as found in the literature can be achieved, as shown in greater detail in the following sections. In order to underline the process character of OL, we structure the discussion of the barriers in the four stages (intuition, interpretation, integration and institutionalization). Within each of the four sections, special attention will be paid to possible 'blocks' and 'complexes' of barriers to account for the inter-relatedness of actional-personal, structural-organizational and societal-environmental factors. In these discussions, we highlight connections between the impediments to OL which form the basis of propositions for future research.

Barriers to Intuiting

The literature offers a wide variety of actional-personal, structural-organizational and societal-environmental barriers to intuiting (see Table 2), so that all forms of obstacles seem to play their part in preventing novel insights and

Table 2. Barriers to organizational learning: Intuiting

Intuition

Form	Barriers	Central publications
Actional-personal	Biases and deficiencies of employees in their function as sensors of the organization	Huber 1991; McCracken 2005
	Superstitious learning	Levitt and March 1988; Miller *et al*. 1997
	Lack of know-how concerning systematic failure analysis	Cannon and Edmondson 2001
	Lack of motivation of the innovator	Szulanski 2003
	High level of stress	Elliott *et al*. 2000
	Professional identity characterized by first-order problem-solving	Elliott *et al*. 2000; Tucker *et al*. 2002
	Fear of disadvantages	Argyris 1990; Beer *et al*. 2005; Cannon and Edmondson 2001; McCracken 2005
	Restrictive, controlling management style	Argyris 1990; Cannon and Edmondson 2001; Schein 1993
Structural-organizational	Lack of clear, measurable goals and performance feedback	Edmondson and Moingeon 1996; Van de Ven and Polley 1992
	Stocks and inventories which cover process errors	Cannon and Edmondson 2001
	Narrow corporate identity	Daft and Weick 1984; Morgan 1986
	Monolithic corporate culture with homogeneous work force	March 1991; Sitkin 1996
	Strict work rules and regulations	McCracken 2005; Tainio *et al*. 2001
	Narrow job descriptions and high division of labour ('not my job'-phenomenon)	Morgan 1986
	Organizational blame culture (scapegoating)	Elliott *et al*. 2000; Vince and Saleem 2004
Societal-environmental	Complex, dynamic, and competitive market environments	Daft 1989; Duncan and Weiss 1979
	Branch with unclear criteria of success	Edmondson and Moingeon 1996; Kim 1993
	Cultural distance and low level of experience in the relevant culture	Barkema *et al*. 1996; Inkpen and Crossan 1996; Kuznetsov and Yakavenka 2005
	Complex, ambiguous, and difficult knowledge	Cannon and Edmondson 2001; Szulanski 2003
	Relevant, but implicit and immobile knowledge	Attewell 1992; Nonaka 1994; Zander and Kogut 1995

innovative ideas. At first glance, the numerous barriers are relatively diverse, and it seems difficult to make a coherent picture which integrates these different factors. In Table 2, the barriers are listed according to their fit to actional-personal, structural-organizational or societal-environmental forms. Actional-personal barriers to intuiting include basic psychological phenomena which occur as the individual perceives his/her environment, such as cognition (e.g. biased perception), motivation (e.g. lack of motivation), emotion (e.g. fear of disadvantages) and personality or identity (e.g. professional identity). Structural-organizational barriers mainly affect the degrees of freedom for 'thinking out of the box' or gaining new insights, by either having too much (e.g. due to a lack of clear, measurable goals) or too little freedom (e.g. due to narrow job descriptions, strict rules and regulations, corporate identity). Societal-environmental barriers include the characteristics of the knowledge itself (e.g. dynamic, ambiguous), the branch of the organization (e.g. market, success criteria) and broad social frames such as cultural misunderstanding. In the following, we are going to explain the barriers in complexes, as we suggest they are interrelated.

Linking the different barriers, the first block of barriers includes factors which prevent new insights based on the *bounded rationality and inappropriate knowledge of organizational members*. Huber (1991) has pointed out that employees show a number of deficiencies and biases in their function as sensors of the organization. These include a variety of psychological phenomena, such as the confirmation bias (i.e. the tendency to search for information that confirms the own views rather than contradicts them) as well as the lack of relevant knowledge on the part of the organizational members (e.g. know-how concerning methods of systematic failure analysis; Cannon and Edmondson 2001) which result in superstitious learning (Levitt and March 1988, 325). Superstitious learning means interpreting organizational success as caused by managerial actions. Leaders often wrongly view good performance as a confirmation of their strategies, which enhances their

confidence in current practices (Miller *et al.* 1997). They tend to oversample success and undersample failure. This could mean that organizational members may draw incorrect conclusions on the impact of their own organizational actions (i.e. organizational changes established on the basis of new ideas) so that an ineffective idea may be retained or an effective innovation may be abolished. Organizational and environmental factors also play an important role in the emergence of these phenomena. Based on prior success, organizations tend to develop more monolithic corporate cultures and more homogeneous employee demographic distributions which restrict the range and acceptance of diverse activities and information sets (Sitkin 1996). A focused search for information in the environment is based mainly on the perception of a problem, i.e. a deviation from expected or desired results (Cannon and Edmondson 2001) or – more generally – an undesirable gap between an expected and observed state (Tucker *et al.* 2002). If an organization has not implemented a system of clear and measurable goals (as a consequence of working in a business with unclear criteria of success) or if high stocks and inventories cover process errors (Edmondson and Moingeon 1996), it is relatively difficult to learn from failures and performance gaps, as these are not clearly identifiable (e.g. Van de Ven and Polley 1992).

> *Proposition 1:* Monolithic corporate cultures, a homogeneous workforce, high stocks and inventories, a lack of clear and measurable goals, and of knowledge concerning failure analysis, are positively related to superstitious learning and negatively related to the detection of performance gaps and errors.

Second, another complex of difficulties is based on *characteristics of the knowledge* that is to be created in the process of intuition. On the basis of a survey study with project engineers formerly responsible for major innovations, Zander and Kogut (1995) demonstrated that, when knowledge and skills could be easily coded and taught, their speed of transfer and therefore the risk of imitation by competitors would increase. Conversely, one can assume

that ambiguity is higher in situations where relevant knowledge and skills are relatively implicit and difficult (cf. Cannon and Edmondson 2001; Nonaka 1994; Szulanski 2003). This is especially true if the knowledge to be learned has a cultural background different from that of the organizational members (Barkema *et al*. 1996; Kuznetsov and Yakavenka 2005). Inkpen and Crossan (1996) analysed learning processes and results in joint ventures between US and Japanese automobile companies. They found that American managers expected concrete and visible information and noticeable differences in production systems, which could be taught explicitly. Because Japanese competence was more contextually embedded implicit knowledge, the US managers did not grasp the deeper meaning of the production technologies. The authors concluded that only direct experiences with the production systems could have led to changes in cognitive schemata and thus to learning. Vicarious learning or organizational mimicry (March 1991) is especially difficult in these situations, so that typical channels for acquiring information, such as professional meetings, trade shows and publications, will not successfully provide the necessary competencies (Huber 1991).

> *Proposition 2:* Implicitness, ambiguity and/or extraneousness (i.e. stemming from a different culture) of knowledge are negatively related to its adaptation by organizational members.

A third complex of barriers concerns *work-related obstacles* to intuiting (role-constrained learning; Kim 1993; March and Olsen 1975). While clear goals seem helpful in overcoming learning under ambiguity, strict rules and regulations concerning the execution of work might prove a barrier to learning. According to Tainio *et al*. (2001), organizations increase the frequency of apparently successful activities, standardize and specialize in them. As the members have no opportunities to experiment within their work (Huber 1991), the organizational knowledge base concerning action–outcome relationships (Duncan and Weiss 1979) remains relatively limited. Consequently, it seems reasonable to

suggest that such employees will find it more difficult to relate changing circumstances to organizational action, as they have not experienced the consequences of varying procedures and routines. Related to this, the professional role of the organizational member can hinder learning processes, as it undermines the motivation of the innovator to pursue his/her idea (Szulanski 2003). In particular, in an organizational context of strict division of labour, organizational members are rewarded for accomplishing their primary tasks, and therefore tend to focus on these. Morgan (1986) comments on the two-edged nature of strict job descriptions as they describe in a clear-cut manner not only what is expected of each organizational member, but also what is not. Insights into and ideas for a solution of the overarching problems of the group, department or even company are regarded as not belonging to one's duties and are therefore suppressed or ignored (the 'not my job' phenomenon). Also, the preservation of one's professional identity (i.e. professional self-esteem and self-efficacy) might prove a problem to OL under certain circumstances (Cannon and Edmondson 2001). Tucker *et al*. (2002) describe first-order problem-solving (i.e. fixing problems without altering underlying causes to prevent their recurrence) in the context of nurses. Also, the nurses were found to 'derive a sense of competence and well-being from their ability to engage in first-order problem solving. They were proud of their independence and ability to provide care for patients' (Tucker *et al*. 2002, 132). The front-line context of their work (with a lack of slack times and heavy workload; cf. Elliott *et al*. 2000), a strict hierarchy and their relatively low status formed important antecedents of this behaviour. As a consequence of first-order problem-solving, many situations that could be used as a platform for long-term improvement are not identified, and future problems for other employees are created (e.g. by taking supplies from other storage locations).

> *Proposition 3:* A high degree of labour division, standardization and narrow professional roles is

negatively related to the development of new ideas concerning overarching problems.

Finally, a complex of factors contributes to the phenomenon that an innovator consciously suppresses the novel insights and ideas based on his/her intuition. A great number of studies and theoretical papers are concerned with anxiety as a barrier to OL (Argyris 1990; Beer *et al*. 2005; Cannon and Edmondson 2001; McCracken 2005). Organizational members will try to avoid ideas and insights that might be harmful to them. This is especially the case when it comes to learning from failure or changing professional identities. Individuals are eager to avoid being associated with concrete instances of failure, as they otherwise risk being stigmatized as incompetent and cut off from valued organizational rewards (Cannon and Edmondson 2001). Argyris (1990) stresses the fact that intuitions that result in a major change of one's professional identity (i.e. double-loop learning; Argyris and Schön 1996) will be suppressed by defensive routines to sustain existing self-concepts (Brown and Starkey 2000). As a consequence, members will withhold, distort or fabricate information (e.g. Van de Ven and Polley 1992) in order to defend themselves and/or others (Popper and Lipshitz 2000), will try not to be identified too closely with new projects in case they fail, and will selectively employ information to legitimize decisions reached on other grounds (Easterby-Smith 1997). Argyris (1990) and Schein (1993) argue that these defensive routines are reinforced by a restrictive, controlling management style and an organizational blame culture (Vince and Saleem 2004) that punishes employees who deviate from norms or regulations and which thereby generates a lack of psychological safety (Friedman *et al*. 2003), hopelessness and organizational cynicism among its members (Berthoin-Antal *et al*. 2003). In case of failures and deviations, blame cultures focus on finding a scapegoat without any learning.

> *Proposition 4:* A restrictive, controlling management style and an organizational blame culture are positively related to anxiety, lack of psychological

safety, hopelessness and organizational cynicism, which are all positively related to actively suppressing novel insights and ideas.

In conclusion, we find that the literature on OL barriers brings us ample evidence of numerous obstacles to intuiting. These can be clustered in four major blocks of factors that contribute to (a) preventing the occurrence of novel insights as a result of cognitive restrictions and mindsets of the organizational members, (b) impeding the development and integration of new knowledge based on its content and cultural origin, (c) avoiding the preoccupation with novel ideas stemming from bureaucratic restrictions and roles, and (d) suppressing new insights as a result of fear of failure and blame.

Barriers to Interpreting

Interpreting is the step in which the individual explains his/her insights through words or actions to others and to groups in the organization. If the learning cycle is broken at this point, individuals change their own behaviour but cannot persuade others to change in this way (Berthoin-Antal *et al*. 2003) and therefore are not able to unambiguously affect organizational action (March and Olsen 1975). The barriers that affect the interpreting process are summarized in Table 3. On a general level, one can see that the total number of barriers described in the literature is lower than for the phase of intuiting. Societal-environmental factors, in particular, can hardly be found; actional-personal impediments dominate the discussion of this process step. The barriers to interpretation are dominated by aspects of interpersonal relationships. In particular, processes of social cognition (such as perceived status, trustworthiness, liking and disliking and conflictual relationships) and influence between the individual and his/her group (including the ownership of ideas, individual identity, acceptance of and motivation for new ideas) mark the actional-personal barriers. Likewise, the structural-organizational and societal-environmental barriers are characterized mainly by social attributes such

Table 3. Barriers to organizational learning: Interpretation

Interpretation

Form	Barriers	Central publications
Actional-personal	Fear of loss of ownership and control of knowledge	Sun and Scott 2005
	Lack of political and social skills on part of the innovator and/or sponsor	Cannon and Edmondson 2001; Lawrence *et al*. 2005; Sun and Scott 2005
	Low status, confidence and trustworthiness of the innovator	March and Olsen 1975; Sun and Scott 2005; Tucker *et al*. 2002
	Conflictual relationship between innovator and group	Szulanski 2003
	Perceived lack of relative advantage over existing practices	Beeby and Simpson 1998; Sun and Scott 2005; Zell 2001
	Lack of absorptive/retentive capacity on the part of the group members	Szulanski 2003
	Lack of motivation and anxiety on the part of the group members	Cannon and Edmondson 2001; Szulanski 2003
Structural-organizational	Organizational silence	Wolfe Morrison and Milliken 2000
	Status culture	Coopey 1995
	Missing link between knowledge and important organizational goals	Friedman *et al*. 2003; Popper and Lipshitz 2000; Zell 2001
	High workload and frontline context	Tucker *et al*. 2002
	Failure-avoidance norms of the group	Sitkin 1996; Sun and Scott 2005
	Ego-defences of a strong collective identity	Brown and Starkey 2000; Rothman and Friedman 2003
	Divergent objectives, values and hidden agendas in the group	Sun and Scott 2005
Societal-environmental	Knowledge incompatible with existing (occupational) mindsets	Baitsch and Alioth 1990; Hanft 1990

as status culture, norms (e.g. failure avoidance, organizational silence) and dynamics (e.g. divergent objectives, hidden agendas, ego-defences) which determine the nature of the barriers. Finally, a misfit based on incompatible mindsets may lead to societal-environmental barriers.

The first complex of factors has to do with the *motivation and skills of the innovator*. Individuals sometimes completely refrain from discussing their ideas with the other group members because they are afraid that their knowledge may be inadequate or unimpressive, and they fear the loss of ownership and/or the loss of individual competitive edge (Sun and Scott 2005). This is not necessarily a purely individual problem, but rather can be related to the specific organizational culture. Wolfe Morrison and Milliken (2000) speak of 'organizational silence' when the dominant choice within organizations is for employees to withhold their

opinions and concerns about organizational problems. But even if an individual takes the chance to communicate his/her learning, the skills of the persons who generate and/or champion an idea or new knowledge have great impact on its acceptance by co-workers or groups. The lack of political skills and influence tactics such as moral suasion, negotiation, persuasion and ingratiation (Blickle 2000; Kipnis *et al*. 1980; Lawrence *et al*. 2005) are also highly important in order to convince others of one's idea by affecting (a) the language and the cognitive maps and (b) the costs and benefits associated with it. 'Stories must be told, revised, and retold in ways that capture the imaginations of co-workers, affirm their identities, and inspire collective action' (Lawrence *et al*. 2005, 183).

Proposition 5: A culture of organizational silence, the fear of being ridiculed for inadequate or

unimpressive knowledge, the fear of loss of ownership, and a lack of political skills of the originator and potential champions are negatively related to successfully communicating new ideas to other team members.

A second complex of barriers has to do with the *relations and status of the innovator* within the group. An organizational culture which is characterized by hierarchy and status-orientation (Coopey 1995; Tucker *et al.* 2002) will most probably lead to situations in which innovations are not accepted because of the person who proposes them, rather than because of their content. While newcomers often bring in a fresh look at how work is done in a group (e.g. March and Olsen 1975), they might not have earned the status and confidence in the group to convince the others (Sun and Scott 2005; Tucker *et al.* 2002). To be heard in a group, the trust in the interpretations of an idea is dependent on the trustworthiness of the interpreter (Coopey 1995; March and Olsen 1975; Sun and Scott 2005; Tucker *et al.* 2002). This whole interpretation process might additionally be negatively affected by a conflictual relationship between the individual and a potential recipient (Szulanski 2003), because the transfer of knowledge, especially when tacit components are inherent, may require numerous individual communication acts, which may be less effective if the exchange is unpleasant for both sides.

> *Proposition 6:* A lack of status and conflictual relationship to the group are negatively related to the acceptance of new ideas by other team members.

Third, a block of factors is concerned with how *the group's task and working conditions* can become an impediment to OL. One can assume that, if the idea is not coupled with important instrumental objectives (and thereby the central task system of the organization; Friedman *et al.* 2003), has no relative advantage (Zell 2001), and is not coupled with potentially costly but avoidable errors (Popper and Lipshitz 2000), it will be difficult to convince others of its benefits. This may be true particularly under

circumstances of high workload and frontline context (Tucker *et al.* 2002). In this case, the group might lack the motivation, absorptive (ability to value, assimilate and apply new knowledge) or retentive capacity (ability of the recipient to institutionalize the utilization of new knowledge) to accept the new knowledge (Cannon and Edmondson 2001; Szulanski 2003).

> *Proposition 7:* The less an idea is coupled with important goals or costly errors, the lower is its acceptance by other team members (especially under circumstances of high workload and frontline context).

Finally, group norms and values, as well as the collective identity of the group will also play a role in the acceptance of new ideas. Regarding norms and values, Sitkin (1996) underlines the devastating effect of failure-avoidance norms on OL, including risk aversion, the denial of bad news and the retrospective revision of negative history. With respect to collective identity, Rothman and Friedman (2003) and Brown and Starkey (2000) stress ego-defences as a barrier to learning which is based on the desire to maintain one's own collective identity. Interestingly, not only a pronounced and clear collective identity (Brown and Starkey 2000) but also an ambiguous group situation with divergent objectives, values and hidden agendas may hinder the acceptance of new ideas (Sun and Scott 2005). Presumably, a moderate degree of collective identity would best support the acceptance of new ideas and interpretations. That means that major innovations are rejected because of a potential threat to the group's core beliefs, and only marginally threatening ideas and insights are accepted. The compatibility of knowledge is crucial for its acceptance by other team members. If the knowledge conflicts greatly with existing occupational mindsets (Hanft 1996) or local theories (Baitsch and Alioth 1990) of the group and especially its formal and informal leaders, then it seems likely that it will be accepted only under circumstances of crisis (i.e. performance gaps that endanger the

group with regard to the satisfaction of important needs such as financial rewards or job security). In this light, it seems easy to understand why refining existing practices (i.e. single-loop learning, Argyris and Schön 1996) is the most common kind of OL (Hanft 1996).

Proposition 8: Failure-avoidance norms, an extremely high or low degree of collective identity (in contrast to moderate) is negatively related to the acceptance of new ideas by other team members (especially if the knowledge conflicts with existing occupational mindsets).

In conclusion, even though the analysis of factors impeding the step of interpretation in the course of OL is not as pronounced as the literature on intuition, we can still identify four major blocks of factors that contribute to preventing the acceptance of novel insights based on (a) personal feelings and skills of the innovator, (b) prestige and relations within the group, (c) the goals, tasks and working conditions of the group, and (d) an extreme collective identity (either pronounced or ambiguous/diverse) and group culture characterized by failure-avoidance norms.

Barriers to Integrating

Integrating takes place at the organizational level where a shared understanding among groups is achieved, allowing for coherent, collective action within the organization. Barriers to integration describe the situation when one unit learns but the whole organization does not and, as a result, an innovative idea will not be integrated into organizational practice. The majority of the literature is concerned with actional-personal obstacles. Nevertheless, the ideas on structural-organizational barriers to integrating are more numerous and elaborate than those that can be found concerning the process of interpretation. Theory and research concerning societal-environmental factors that hinder OL is again largely absent (see Table 4). Actional-personal barriers seem to be dominated by factors that all lead to a lack of management support, mainly rooted in social cognition processes (such as over-confidence of managers in existing practices or desire to retain a positive self-image) and fear (anxiety of disadvantages and punishment). Structural-organizational barriers incorporate mainly inter-group processes, such as competition or inadequate communication, the history of the organization (such as long-term success and low turnover) and a lack of learning-oriented values. Finally, in terms of societal-environmental barriers, whole industries or sectors may reject innovative ideas because they go against commonly held beliefs and/or their success does not become visible in the short term.

A first complex of barriers is concerned with the *motivation of the innovating team and/or their sponsor*. Sun and Scott (2005) stress that teams may refrain from sharing learning experiences with other units of the organization if they have to fear punishment, disadvantages for their team or, at least, cannot expect recognition for doing so. This is especially the case if resources are ineffectively allocated within the organization (Beer *et al.* 2005) and the different units are competing for them (Sun and Scott 2005). Inadequate direct communication between organizational units (Beer and Eisenstat 2000; Elliott *et al.* 2000; Zell 2001) may be an obstacle to building up trust within the organization. The group may be suspicious of whether other groups are sharing the knowledge they gained in the same open way.

Proposition 9: Ineffective allocation of resources and competition between units are negatively related to trust and the motivation of teams to share their knowledge with others.

A second and heavily researched barrier block concerns the *lack of top management support for the innovation*. For successful integration, the process of force based on formal authority is most important. It seems obvious that a lack of formal authority (e.g. not being part of the company's top management) on the part of the originator of the innovation, his/her champion(s) or supporter(s) proves a major obstacle for OL (e.g. Popper and Lipshitz 2000; Starbuck and Hedberg 2003). If an organization's

Barriers to organizational learning

Table 4. Barriers to organizational learning: Integrating

Integration		
Form	**Barriers**	**Central publications**
Actional-personal	Fear of disadvantages for the team benefit	Sun and Scott 2005
	Lack of recognition/fear of punishment for the innovation	Sun and Scott 2005
	Lack of formal authority on the part of the innovator and/or sponsor	Popper and Lipshitz 2000; Starbuck and Hedberg 2003
	Lack of top management support	Beer and Eisenstat 2000; Lawrence *et al.* 2005
	Over-confidence of managers in existing practices	Elliott *et al.* 2000
	Rigid and outdated core beliefs, values and assumptions of senior managers	Beer *et al.* 2005; Duncan and Weiss 1979; Elliott *et al.* 2000; Steiner 1998
	Managers' desire to retain a positive self-image	Weick 1995
	Inconsistency between employees' and managers' metaphors and visions for the organization	Steiner 1998
	Defensive routines of other departments (not invented here-syndrome)	Zell 2001
	Lack of participation and communication/forced top-down change	Beer and Eisenstat 2000; Beer *et al.* 2005; Steiner 1998; Zell 2001
	Perceived incompatibility with culture and structure of the organization	Zell 2001
Structural-organizational	Competition with other teams/units	Sun and Scott 2005
	Low turnover in top management	Virany *et al.* 1992
	Long-term organizational success: Competence traps	Berthoin Antal *et al.* 2003; Levitt and March 1988; Sitkin 1996
	Inadequate communication between units	Beer and Eisenstat 2000; Elliott *et al.* 2000; Zell 2001
	Power structures and relations	Beer *et al.* 2005; Coopey 1995; Easterby-Smith 1997; Örtenbald 2002; Starbuck and Hedberg 2003
	Ineffective resource allocation	Beer *et al.* 2005
	Lack of learning orientated values in the organization	Sinkula *et al.* 1997; Sun and Scott 2005
	Lack of fit between innovation and organizational assumptions and beliefs	Sun and Scott 2005
Societal-environmental	Industrial recipes standing against the innovation	Spender 1989
	Time lag between organizational action and environmental response: Failure traps	Berthoin-Antal *et al.* 2003; Hedberg and Wolff 2003

top management does not support an idea (i.e. sponsor it), it will be most difficult to achieve collective action based or focused on the innovation (Beer and Eisenstat 2000). To move up to the level of the organization, innovations 'must be brought to the attention of senior management by appropriate individuals at appropriate times and, in many cases, revisited on numerous occasions' (Lawrence *et al.* 2005, 183). A lack of top management support may be due to the fact that the idea conflicts with the knowledge of powerful individuals (Duncan and Weiss 1979) or at least implies divergent metaphors and visions for the organization's future (Steiner 1998). Rigid and outdated core beliefs, values and assumptions of senior managers are also seen as incubating the potential for crisis and factors that act as powerful inhibitors to learning (Elliott *et al.* 2000), because senior managers do not see the necessity 'to change

a winning team'. Also, such conservatism may be caused by the desire to retain a positive self-image in the sense that the adoption of innovations might be seen as criticism of past actions and decisions (Weick 1995). A low turnover in top management is associated with barriers to integrating new learning into organizational routines. Virany *et al*. (1992) explored executive succession as an important mechanism for OL in microcomputer firms. They showed that it is important to distinguish between CEO succession and changes in the executive team. Organizational performance is improved by each of these two factors independently, but impaired if they occur simultaneously. Positive effects were seen when CEO succession coincided with a strategic reorientation. Interestingly, organizations with a history of high performance engaged in significantly fewer CEO successions than all other firms. These organizations were able to initiate reorientation with significantly less CEO succession and were also more likely to initiate reorientations with low executive team turnover. Nevertheless, there is also evidence that long periods of success can form a blockage to OL (Berthoin-Antal *et al*. 2003): existing competencies are exploited at the expense of exploring innovative practices, processes, products or structures. Personnel, subcultures and administrative or technical processes are homogenized (Sitkin 1996). Because of the high level of competence organizations have developed in their established processes, they tend to perceive them as superior to other processes (Levitt and March 1988).

> *Proposition 10:* A lack of top management attention for the idea, conflicts between the idea and the knowledge/visions of powerful individuals, outdated beliefs and values on part of senior management, long periods of corporate success, and low top management turnover are all negatively related to top management support for innovations, which itself is negatively related to the degree of their collective practice in the organization.

The third complex of barriers can be characterized by *resistance from other units and depart-ments in the organization against the integration*. One barrier to the diffusion of new ideas and learning between units and groups is, for example, the well-known 'not-invented-here' syndrome. Employees might refuse to adopt an idea unless they have come up with it themselves, and combine this with jealousy and resentment (Zell 2001). Similar to the barriers associated with incompatibility of ideas within a group, ideas proposed by a team to senior management might conflict with organizational assumptions (Sun and Scott 2005) or even more generally with 'industrial recipes' of an industry (Spender 1989). For example, at the beginning of the 1990s, the idea of the Japanese forms of team-oriented lean management production (partly autonomous work groups) in the automotive sector strongly challenged existing ways of how to produce and build cars. Related to this, the time lag between organizational action and environmental response points to another problem of innovation (failure traps; Berthoin-Antal *et al*. 2003; Hedberg and Wolff 2003). As the success of innovations is often not immediately apparent, opponents can easily take this as 'proof' of its inefficiency. In particular, if the innovation challenges structures and power relations, those key members that find the current state advantageous to them will oppose its organization-wide implementation (Coopey 1995; Easterby-Smith 1997; Örtenbald 2002; Starbuck and Hedberg 2003). This can only be prevented by strong support from top management (see above) or in the case of a crisis that make changes inevitable. Beer *et al*. (2005) criticise top-down or, conversely, laissez-faire leadership styles as barriers to the integration process accompanied by poor co-ordination across functions and poor vertical communication. Finally, it seems likely that an organizational culture that lacks a learning orientation (Sinkula *et al*. 1997; Sun and Scott 2005) and rather is characterized by an internal and stable focus will encounter obstacles concerning the integration of innovative ideas.

> *Proposition 11:* A lack of learning orientation in the organizational culture, ineffective leadership in

the introduction of ideas, ideas that conflict with organizational values and industrial recipes, challenge power relations or imply a time lag to environmental response are all negatively related to the acceptance of innovations by other organizational units.

In conclusion, the discussion on factors impeding integration resembles that on interpretation, as the main focus of the literature lies on actional-personal impediments. Likewise, the content of the barriers analysed in the literature so far shows some resemblances (e.g. 'lack of motivation', 'resistance based on mindsets and recipes'). For integrating, three major blocks were identified that contribute to preventing the organization-wide implementation of novel insights: (a) the lack of motivation on the part of the innovative organizational unit, (b) the lack of top management support and (c) active resistance from other organizational departments towards the innovation.

Barriers to Institutionalizing

Institutionalizing means the implementation of a shared understanding in systems, structures, procedures, rules and strategies that now become independent of their individual or group origins and guide normal organizational action. Impeding institutionalizing means that OL takes place, but is forgotten or not codified for later use. The institutionalization of innovations or lessons learned does not take place; they are not implemented in organizational systems, structures, procedures, rules and strategy. As a consequence, the continued integration of an innovation into organizational action is dependent on the constant exertion of force by influential persons (Lawrence *et al*. 2005). If these persons leave the organization or stop using their formal authority in favour of the innovation, its application will sooner or later deteriorate. The literature includes a great variety of barriers to institutionalizing. These are compiled in Table 5. While actional-personal factors dominate, a substantial number of structural-organizational and societal-environmental forms of blockages

have also been described and analysed, giving a more balanced picture of the different forms of barriers, one which resembles the discussion on intuition.

Similar to the barriers affecting the interpretation process, motivation (e.g. perceived irrelevance) and missing skills both on the side of the employees (lack of knowledge, divergent aspiration of the teams) and on the side of management (e.g. inadequate down-the-line leadership skills) as well as interpersonal relationships and their history (e.g. past experience of conflicts) and individual attitudes such as cynicism and a low degree of openness play important roles as barriers to institutionalization. As structural-organizational barriers, a relatively diverse sample of factors is discussed, such as inflexible workplaces, restricted time resources, inconsistencies in organizational systems, strategies, policies and practices, as well as factors preventing systematic monitoring of the implementation (e.g. decentralization, lack of adequate means of control). Finally, societal-environmental barriers include temporal aspects of innovations (e.g. short life cycles of technological developments and management fashions), general problems of storing certain kinds of learning results (such as implicit knowledge) and cultural and linguistic aspects of the broader context.

A first complex of barriers is concerned with the *lack of trust in the innovation*. In many cases, organizations simply come to the conclusion that certain learning results are irrelevant for future purposes and therefore do not need to be stored. This is especially important in a dynamic organizational environment (e.g. telecommunication, software, IT) characterized by rapid technological changes (Zell 2001). On the one hand, even if an organization is able and willing to implement new ideas systematically, the innovations may have become obsolete by the time the implementation is completed. On the other hand, such an environment may also foster the belief that institutionalizing innovations is generally unnecessary, as these will soon be outdated even if this is not necessarily the case. Related to this,

Table 5. Barriers to organizational learning: Institutionalizing

Institutionalization

Form	Barriers	Central publications
Actional-personal	Perceived irrelevance of the innovation for future purposes	Zell 2001
	Lack of knowledge to implement the innovation on the part of teams/employees	Sun and Scott 2005; Szulanski 2003; Zell 2001
	Perforated memories	Walsh and Ungson 1991
	Laissez-faire senior management style	Beer and Eisenstat 2000; Steiner 1998; Zell 2001
	Inadequate down-the-line leadership skills	Beer and Eisenstat 2000
	Past experiences of conflicts during learning transfer	Sun and Scott 2005
	Low level of acceptance and trust towards teams/employees	Sun and Scott 2005
	Cynicism towards the organization or innovation	Dean et al. 1998; Wanous et al. 2000; Zell 2001
	Divergent aspirations of teams: Innovation as a threat	Sun and Scott 2005
	Low degree of openness to new ideas on the part of teams/employees	Sun and Scott 2005
	Opportunistic behaviour	Kim 1993
Structural-organizational	Stable/static conditions of the workplace	Walsh and Ungson 1991
	Lack of time and resources (transfer processes, training and development; communication methodology and space for implementation)	Beer and Eisenstat 2000; McCracken 2005; Sun and Scott 2005; Zell 2001
	High employee and management turnover	Zell 2001
	Lack of clear responsibility concerning the implementation/storage	Beeby and Simpson 1998; Walsh and Ungson 1991
	Lack of a consistent norm system: organizational hypocrisy	Huzzard and Östergren 2002
	Inconsistent organizational strategy, systems, policies and practices	Beer and Eisenstat 2000; Huber 1991; Steiner 1998; Walsh and Ungson 1991; Zell 2001
	Inconsistency between initial goals of the innovation and success criteria to evaluate it	Godkin and Montano 1991
	Decentralization (silo structure, turfism with powerful departmental structures)	Dodgson 1993; McCracken 2005; Morgan 1986; Zell 2001
	Lack of means and measures to control organizational behaviour and performance	Hanft 1996
Societal-environmental	Rapid technological change	Zell 2001
	Emerging management fads that promise quick success	Abrahamson and Fairchild 1999
	Problem with linguistics and national culture	Kuznetsov and Yakavenka 2005
	Technical/structural difficulties of storing implicit knowledge	Nonaka 1994

innovations, in the sense of organizational lessons learned, may be competing with emerging management fads (Abrahamson and Fairchild 1999). To keep up with emerging trends or to impress stakeholders and public, organizations may be seduced into relying more strongly on improvements suggested by external consultants than by their own employees. Finally, organizations that try to implement innovations and knowledge from a different culture experience specific difficulties in finding appropriate ways to adopt and communicate it (Kuznetsov and Yakavenka 2005). The discussion on the feasibility of lean management methods in Western industries may well serve as a good example for this barrier. Inappropriate systems and misunderstandings can be expected to result in resistance on the part of employees.

Barriers to organizational learning

Proposition 12: Rapid technological changes in the organizational environment, a different cultural origin of innovations, and a high degree of emerging management trends in the branch are negatively related to the implementation of technological innovations.

Second, a number of factors contribute to a barrier complex which focuses on the *lack of skill on part of employees to implement the innovation*. A lack of knowledge, skills and abilities (e.g. implementing team production systems without training shop floor workers) is an important obstacle to closing the learning cycle from innovation to practice (Sun and Scott 2005; Szulanski 2003; Zell 2001). This lack is fostered by a lack of time, space and organizational resources to support the implementation process. Different authors have described diverse aspects such as deficient transfer processes, the absence of appropriate employee training and development to prepare for the institutionalization, poor communication methodologies (Beer and Eisenstat 2000; McCracken 2005; Sun and Scott 2005; Zell 2001) as well as workplace deficiencies that hinder the execution of the innovation (e.g. physical workplace conditions that prevent team work; inflexible software which cannot be adapted to new business processes). High employee turnover (Zell 2001) may also be a barrier to the implementation of new ideas, as it causes discontinuity and disruption of the organizational memory. Specifically, it poses the problem that skills and knowledge are lost, or at least difficult to maintain (perforated organizational memory; Walsh and Ungson 1991). This will pose a problem to the organization especially if the relevant knowledge is implicit and therefore relatively difficult to store in technical systems (e.g. intranet, databases) or transfer to other members (Nonaka 1994). Learning results are not always tangible assets such as raw materials. Like safety, learning results and lessons learned (e.g. changes in values, newly gained abilities, insights or attitudes) are nothing that organizations may 'possess' independent of specific individuals.

Proposition 13: A lack of organizational resources (especially appropriate training and development) for the implementation process, poor communication methodologies, inflexible workplaces and high employee turnover are negatively related to employees' skill to implement structural, process and product innovations (especially if the new knowledge is relatively implicit).

Third, a *lack of management skills* can prove to be a substantial problem to institutionalizing learning experiences. Top management may hinder OL by not making necessary changes in policies and practices that are needed to implement new routines. A laissez-faire management style that implicitly assumes that innovations will somehow find their way into organizational practice prevents systematic implementation (Beer and Eisenstat 2000; Steiner 1998; Zell 2001). Not only top management, but also middle and lower management have to play their part in institutionalizing innovations. Innovative structures, processes and practices cannot be brought to life in the face of inadequate down-the-line leadership skills (Beer and Eisenstat 2000). These leadership deficiencies are related to a number of actional-personal and structural-organizational aspects. On the personal level, managers' perception of the skills and willingness of the employees to implement innovations has to be mentioned. Low levels of trust towards the employees and experiences of conflicts during past learning transfers will most certainly reduce management's expectations concerning the success of the implementation. As a consequence, their commitment to institutionalize the innovation will suffer. Concerning the organizational factors, it seems reasonable to assume that an innovation cannot be successfully implemented if there are no clear personal responsibilities (Beeby and Simpson 1998; Walsh and Ungson 1991). A lack or at least diffusion of responsibility can be assumed to lead to a lack of personal involvement, which characterizes the laissez-faire style of leadership. Different authors describe the problem of inconsistencies

between strategy, systems, policies and practices as a barrier to implementing innovations successfully in organizations (Beer and Eisenstat 2000; Huber 1991; Huzzard and Östergren 2002; Steiner 1998; Walsh and Ungson 1991; Zell 2001).

> *Proposition 14:* Low levels of trust in the willingness and skills of employees, conflicts in past learning transfers and a diffusion of responsibility for the implementation are positively related to both organizational inconsistencies (i.e. between corporate strategy, systems, policies and practices) and laissez-faire leadership style on the part of top, middle and lower management, which themselves are negatively related to the implementation of structure, process and product innovations.

A fourth block consists of institutionalization barriers that increase the likelihood that the adoption of an innovation will be *rejected by organizational units and their members*. Morgan (1986) and Dodgson (1993) describe how departmental structures focus the attention of their members on parochial rather than on organization-wide problems (silo structures or turfism; McCracken 2005; Zell 2001). Hence, a high level of decentralization is likely to go along with the difficulties in implementing innovative ideas and keeping them alive. Rather than really applying them, organizational units and members take refuge in paying lip service to the innovation and show opportunistic behaviour (Kim 1993). Employees and teams may have aspirations which are not compatible with the new ideas they are supposed to implement (Sun and Scott 2005). In this sense, the innovation would be regarded as a threat, and counteracted. The problem would be aggravated in situations when the resistance is not directed towards a specific kind of innovation, but against changes in general. A negative attitude towards changes (cynicism towards change; Wanous *et al*. 2000) or cynicism towards the organization as a whole (Dean *et al*. 1998) is likely to be an important factor in the development of opportunistic behaviour (Zell 2001) and will reduce

the openness of employees to new ideas in general (Sun and Scott 2005). These attitudes may well be fostered by contradictions in the implementation of innovation, such as inconsistencies between the initial goals of the innovation and success criteria to evaluate it (Godkin and Montano 1991). The chances to counteract innovations are particularly high if the organization has no, or only rather rough, means to control (e.g. absence of measures of behaviour and performance) and/or to punish deviant behaviour (Hanft 1996). As a result, the lower the risk of being penalized and the higher the (personal) profit of deviant behaviour, the more likely is the emergence of opportunistic learning.

> *Proposition 15:* High levels of decentralization in the organization, inconsistencies in the implementation (e.g. between initial goals and actual success criteria) and a lack of means of control and punishment are positively related to lip service and opportunistic behaviour (especially under circumstances of high degrees of organizational cynicism).

In conclusion, the literature offers a wide variety of factors impeding institutionalization, with main foci on actional-personal and structural-organizational impediments. Four major blocks were identified that contribute to preventing the organization-wide institutionalization and adoption of innovation: (a) a lack of trust in the innovation itself, (b) deficient skills and knowledge to adopt the innovation on the part of the teams and employees, (c) a lack of management skills to provide consistent and systematic implementation, and (d) counteractive and opportunistic behaviour from the organizational units and members.

Discussion and Implications for Future Research

The goal of this paper was to analyse existing theory and evidence concerning barriers to OL, to integrate these aspects into a model of the OL learning process and to point to fields of future research concerning OL. The main contribution lies in the discussion on how single

barriers may be interlinked and interrelated within the processes of intuiting, interpretation, integration and institutionalization of learning results. Because much of the cited work is based on theoretical considerations and/or case studies, the discussion can serve as a starting point for future empirical studies. It therefore seemed necessary to enumerate explicitly the main propositions concerning barriers to OL.

As an overarching conclusion from our review, it seems noteworthy that the OL literature treated a wide variety of barriers to OL, including characteristics of the innovation itself, employees' mindsets, skills and motivation, group dynamics, leadership, organizational structure and culture as well as political activities. Nevertheless, it became clear that there are some aspects that have received more attention than others in the past. It was pointed out that the main focus is on actional-personal and structural-organizational barriers, while societal-environmental forms have so far been of minor importance in theory and research. Similarly, the literature has concentrated mainly on the stages of intuition and institutionalization, while evidence concerning barriers to interpretation and integration is scarcer. In this regard, the present review has the potential to serve as an inspiration for more research concerning these underrepresented topics.

Limitations

First, Berthoin-Antal *et al.* (2003) state that categories of interrupted learning cycles are theoretically appealing, but sometimes appear sterile when confronted with reality. Instead of listing the barriers found in the literature, we therefore tried to integrate the barriers into complexes and blocks, representing the interrelatedness of the actional-personal, structural-organizational and societal-environmental aspects. While the complexes and blocks might be criticized for being to some degree arbitrary, the rationale for building these complexes is based on the descriptions of interrelated barriers in the OL literature. Thus, the complexes emerged text-based and bottom-up

while we worked with the cited papers and concepts. Second, our review is not only based on scientific theory and empirical research but also includes barriers proposed by practitioners who shared their experiences from different projects. Hence, the barriers presented and their relationships should be treated as hypotheses rather than confirmed knowledge. The derived model of OL barriers needs further theoretical work and empirical studies to prove its validity. Third, a limitation of the review concerns the apparent implication that eliminating barriers does not necessarily lead to successful OL. From our point of view, pulling down barriers is a necessary, but not all-sufficient, condition for OL, as removing the factors that prevent learning is only the first step in supporting OL. There must be additional steps to develop the preconditions for successful learning. While our concern to develop a model of barriers to OL was influenced by the observation that the literature is still often dominated by an optimism concerning the feasibility of OL, the next step in theoretical development should be an analysis of supporting factors for OL in the context of the expanded model. The discussions of Popper and Lipshitz (2000) and Friedman *et al.* (2003) might serve as starting points for such an endeavour.

Implications for Future Research

Based on these limitations, we propose to elaborate the presented approach by answering the following questions:

1. What impact do the respective barriers have on specific departments such as production, sales/marketing, or finance? It seems likely that the OL barriers vary in their importance in different parts of an organization.
2. What is the relationship between the OL barriers and different levels of OL as expressed in the ideas of single-loop, double-loop and deutero-learning (Argyris and Schön 1996), lower- and higher-level learning (Fiol and Lyles 1985), or similar distinctions (cf. Kim 1993)? As the

restructuring of organizational theories-in-use varies in breadth and depth (Schön 1983), we assume that the impact of the barriers will depend on the kind of change. Greater difficulties can be expected for double-loop or deutero-learning as these imply more drastic changes concerning organizational norms, values and behaviour.

3.   What kind of combinations in OL barriers are typical of and have the most severe consequences for organizations? Lawrence *et al.* (2005) speculate that different organizations may be prone to specific forms of power and therefore unable to complete the whole learning cycle.

In this paper, we have presented a systematic overview of barriers to the OL process. While the area of OL is sometimes criticized as being meta-theoretical, the review shows that it is possible to formulate specific and concrete hypotheses. Hopefully, the present paper can contribute to advance empirical studies, theoretical developments and practical applications in this important area of management research. While the avenues are manifold, special attention should be given to the area of leadership. Berthoin-Antal *et al.* (2003) and Lawrence *et al.* (2005) argue that barriers embedded in the structure and culture of an organization can only be overcome by the exercise of leadership at all levels of the organization. This suggests that the theoretical and empirical analysis of the relationship between different kinds of leadership and OL seems an important issue for future research.

Note

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References

Abrahamson, E. and Fairchild, G. (1999). Management fashion: lifecycles, triggers, and collective learning processes. *Administrative Science Quarterly*, **44**, 708–740.

Andreu, R. and Ciborra, C. (1996). Core capabilities and information technology: an organizational learning approach. In Moingeon, B. and Edmondson, A. (eds), *Organizational Learning and Competitive Advantage*. London: Sage, pp. 121–139.

Argyris, C. (1990). *Overcoming Organizational Defenses*. Boston, MA: Allyn & Bacon.

Argyris, C. and Schön, D. (1996). *Organizational Learning II: Theory, Method, and Practice*. Reading, MA: Addison-Wesley.

Attewell, P. (1992). Technology diffusion and organizational learning: the case of business computing, *Organization Science*, **3**(1), 1–19.

Bain, A. (1998). Social defences against organizational learning. *Human Relations*, **51**(3), 413–429.

Baitsch, C. and Alioth, A. (1990). Entwicklung von Organisationen – Vom Umgang mit Widersprüchen [Development of organizations – On dealing with contradictions]. In Frei, F. and Udris, I. (eds), *Das Bild der Arbeit*. Bern, Switzerland: Huber, pp. 244–257.

Barkema, H.G., Bell, J.H.J. and Pennings, J.M. (1996). Foreign entry, cultural barriers, and learning, *Strategic Management Journal*, **17**(2), 151–166.

Beeby, M. and Simpson, P. (1998). Barriers, boundaries and leaks in an organization development intervention, *Leadership & Organization Development Journal*, **19**(7), 353–361.

Beer, M. and Eisenstat, R.A. (2000). The silent killers of strategy implementation and learning, *Sloan Management Review*, **41**(4), 29–40.

Beer, M., Voelpel, S.C., Leibold, M. and Tekie, E.B. (2005). Strategic management as organisational learning: developing fit and alignment through a disciplined process. *Long Range Planning*, **38**, 445–465.

Berthoin-Antal, A., Lenhardt, U. and Rosenbrock, R. (2003). Barriers to organizational learning. In Dierkes, M., Berthoin-Antal, A.B., Child, J. and Nonaka, I. (eds), *Handbook of Organizational Learning and Knowledge*. Oxford: Oxford University Press, pp. 865–885.

Blackler, F. (1995). Knowledge, knowledge work and organizations: an overview and interpretation. *Organization Studies*, **16**, 1021–1046.

Blackler, F. and McDonald, S. (2000). Power, mastery and organizational learning. *Jounal of Management Studies*, **37**, 833–852.

Blickle, G. (2000). Influence tactics used by subordinates: an empirical analysis of the Kipnis and Schmidt subscales. *Psychological Reports*, **86**, 143–154.

Barriers to organizational learning

Brooking, A. (1999). *Corporate Memory-Strategies for Knowledge Management*. London: Thompson Business Press.

Brown, A.D. and Starkey, K. (2000). Organizational identity and learning: a psychodynamic perspective. *Academy of Management Review*, **25**(1), 102–120.

Cangelosi, V. and Dill, W. (1965). Organizational learning: observations toward a theory. *Administrative Science Quarterly*, **10**, 175–203.

Cannon, M.D. and Edmondson, A. (2001). Confronting failure: antecedents and consequences of shared beliefs about failure in organizational work groups. *Journal of Organizational Behavior*, **22**, 161–177.

Coopey, J. (1995). The learning organization, power, politics and ideology. *Management Learning*, **26**(2), 193–213.

Crossan, M.M., Lane, H.W. and White, R.E. (1999). An organizational learning framework: from intuition to institution. *Academy of Management Review*, **24**, 522–537.

Daft, R.L. (1989). *Organization Theory and Design*. St. Paul, MN: West.

Daft, R.L. and Weick, K.E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review*, **9**, 284–295.

Dean, J., Brandes, P. and Dharwadkar, R. (1998). Organizational cynicism. *Academy of Management Review*, **23**(12), 341–353.

Dodgson, M. (1991). Technology learning, technology strategy and competitive pressures. *British Journal of Management*, **2**, 132–149.

Dodgson, M. (1993). Organizational learning: a review of some literatures. *Organization Studies*, **14**, 375–394.

Duncan, R. (1972). Characteristics of organizational environments and perceived environmental uncertainty. *Administrative Science Quarterly*, **17**, 313–327.

Duncan, R. and Weiss, A. (1979). Organizational learning: implications for organizational design. In Cummings, L.L. and Staw, B.M. (eds), *Research in Organizational Behavior*, Vol. 1. Greenwich: JAI Press, pp. 75–123.

Easterby-Smith, M. (1997). Disciplines of organizational learning: contributions and critiques. *Human Relations*, **50**, 1085–1113.

Easterby-Smith, M., Snell, R. and Gherardi, S. (1998). Organizational learning: diverging communities of practice? *Management Learning*, **29**, 259–272.

Edmondson, A. and Moingeon, B. (1996). From organizational learning to the learning organization. *Management Learning*, **29**, 5–20.

Eells, R. and Nehemiks, P. (1984). *Corporate Intelligence and Espionage*. New York: Macmillan.

Elliott, D., Smith, D. and McGuinness, M. (2000). Exploring the failure to learn: crisis and the barriers to learning, *Review of Business*, **21**(3/4), 17–24.

Fiol, C. and Lyles, M. (1985). Organizational learning. *Academy of Management Review*, **10**, 803–813.

Friedman, V.J., Lipshitz, R. and Overmeer, W. (2003). Creating conditions for organizational learning. In Dierkes, M., Berthoin-Antal, A.B., Child, J. and Nonaka, I. (eds), *Handbook of Organizational Learning and Knowledge*. Oxford: Oxford University Press, pp. 757–774.

Godkin, L. and Montano, C. (1991). Organizational learning: Philippine agrarian reform under martial law. *Organization Studies*, **12**, 29–47.

Hanft, A. (1996). Organisationales Lernen und Macht – Über den Zusammenhang von Wissen, Lernen, Macht und Struktur [Organizational learning and power – On the relationship of knowledge, learning, power, and structure]. In Schreyögg, G. and Conrad, P. (eds), *Managementforschung 6*. Berlin, Germany: De Gruyter, pp. 133–162.

Hannan, M.T. and Freeman, J. (1988). *Organizational Ecology*. Cambridge, MA: Harvard University Press.

Hawkins, P. (1994). Organizational learning: taking stock and facing challenge. *Management Learning*, **25**, 71–82.

Hedberg, B. and Wolff, R. (2003). Organizing, learning, and strategizing: from construction to discovery. In Dierkes, M., Berthoin-Antal, A.B., Child, J. and Nonaka, I. (eds), *Handbook of Organizational Learning and Knowledge*. Oxford: Oxford University Press, pp. 535–556.

Huber, G.P. (1991). Organizational learning: the contributing processes and the literatures. *Organization Science*, **2**, 88–115.

Huzzard, T. and Östergren, K. (2002). When norms collide: learning under organizational hypocrisy. *British Journal of Management*, **13**, 547–559.

Inkpen, A.C. and Crossan, M.M. (1996). Believing is seeing. Joint ventures and organizational learning. In Russ-Eft, D., Preskill, H. and Sleezer, C. (eds), *Human Resource Development Review. Research and Implications*. Thousand Oaks, CA: Sage, pp. 299–329.

Kim, D.H. (1993). The link between individual and organizational learning. *Sloan Management Review*, **35**(1), 37–50.

Kipnis, D., Schmidt, S.M. and Wilkinson, I. (1980). Intraorganizational influence tactics: explorations in

getting one's way. *Journal of Applied Psychology*, **65**, 440–452.

Kluge, A. and Schilling, J. (2000). Organisationales Lernen und Lernende Organisation – ein Überblick zum Stand von Theorie und Empirie [Organizational learning and learning organization – a review on the state of theory and empirical research]. *Zeitschrift für Arbeits- und Organisationspsychologie*, **44**, 179–191.

Kluge, A. and Schilling, J. (2003). Organizational learning and learning organizations. *The Psychologist Manager-Journal*, **6**, 31–50.

Kühn, O. and Abecker, A. (1997). Corporate memories for knowledge management in industrial practice: prospects and challenges. *Journal of Universal Computer Sciences*, **3**, 929–954.

Kuznetsov, A. and Yakavenka, H. (2005). Barriers to the absorption of management knowledge in Belarus, *Journal of Managerial Psychology*, **20**, 566–577.

Lawrence, T.B., Mauws, M.K., Dyck, B. and Kleysen, R.F. (2005). The politics of organizational learning: integrating power into the 4I framework. *Academy of Management Review*, **30**, 180–191.

Levitt, B. and March, J.G. (1988). Organizational learning. *Annual Review of Sociology*, **14**, 319–340.

March, J.G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, **2**, 71–87.

March, J.G. and Olsen, J.P. (1975). The uncertainty of the past: organizational learning under ambiguity. *European Journal of Political Research*, **3**, 147–171.

McCracken, M. (2005). Towards a typology of managerial barriers to learning. *Journal of Management Development*, **24**, 559–575.

Miller, D., Droge, C. and Vickery, S. (1997). Celebrating the 'essential': the impact of performance on the functional favoritism of CEOs in two contexts. *Journal of Management*, **23**, 147–168.

Miner, A.S. and Haunschild, P.R. (1995). Population level learning. *Research in Organizational Behaviour*, **17**, 115–166.

Morgan, G. (1986). *Images of Organization*. Beverly Hills, CA: Sage.

Nason, S.W. (1994). *Organizational Learning Disabilities: An International Perspective*. Unpublished doctoral dissertation, Los Angeles, CA: University of Southern California.

Nicolini, D. and Meznar, M.B. (1995). The social construction of organizational learning: conceptual and practical issues in the field. *Human Relation*, **48**, 727–746.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, **5**, 14–37.

Örtenbald, A. (2002). Organizational learning: a radical perspective. *International Journal of Management Reviews*, **4**, 87–100.

Parke, A. (1991). Interfirm diversity, organizational learning and longevity in global strategic alliances. *Journal of International Business Studies*, **22**, 579–601.

Popper, M. and Lipshitz, R. (2000). Organizational learning. mechanisms, culture, and feasibility. *Management Learning*, **31**(2), 181–196.

Rothman, J. and Friedman, V.J. (2003). Identity, conflict, and organizational learning. In Dierkes, M., Berthoin-Antal, A.B., Child, J. and Nonaka, I. (eds), *Handbook of Organizational Learning and Knowledge* Oxford: Oxford University Press, pp. 582–597.

Schanz, G. (1992). Organisation [Organization]. In Frese, E. (ed.), *Handwörterbuch der Organisation*. Stuttgart, Germany: Poeschel, pp. 1459–1471.

Schein, E.H. (1993). On dialogue, culture and organizational learning. *Organizational Dynamics*, **22**, 40–51.

Schön, D.A. (1983). Organizational learning. In Morgan, G. (ed.), *Beyond Method – Strategies for Social Research*. Beverly Hills, CA: Sage, pp. 114–128.

Senge, P.M. (1990). *The Fifth Discipline*. New York, NY: Doubleday.

Sinkula, J.M., Baker, W.E. and Noordewier, T. (1997). A framework for market-based organizational learning: linking values, knowledge and behavior. *Journal of the Academy of Marketing Science*, **25**, 305–318.

Sitkin, S.B. (1996). Learning through failure. In Cohen, M.D. and Sproull, L.S. (eds), *Organizational Learning*. Thousand Oaks, CA: Sage Publications, pp. 541–577.

Spender, J.C. (1989). *Industry Recipes: An Inquiry into the Nature and Sources of Managerial Judgement*. Oxford: Blackwell.

Starbuck, W.H. and Hedberg, B. (2003). How organizations learn from success and failure. In Dierkes, M., Berthoin-Antal, A.B., Child, J. and Nonaka, I. (eds), *Handbook of Organizational Learning and Knowledge.* Oxford: Oxford University Press, pp. 327–350.

Steiner, L. (1998). Organisational dilemmas as barriers to learning, *The Learning Organization*, **5**(4), 193–201.

Barriers to organizational learning

Sun, P.Y.-T. and Scott, J.L. (2005). An investigation of barriers to knowledge transfer, *Journal of Knowledge Management*, **9**(2), 75–90.

Szulanski, G. (2003). *Sticky Knowledge: Barriers to Knowing in the Firm*. Thousand Oaks, CA: Sage.

Tainio, R., Lilja, K. and Santalainen, T.J. (2001). The role of boards in facilitating or limiting learning in organizations. In Dierkes, M., Berthoin-Antal, A.B., Child, J. and Nonaka, I. (eds), *Handbook of Organizational Learning and Knowledge*. Oxford: Oxford University Press, pp. 428–445.

Tucker, A.L., Edmondson, A.C. and Spear, S. (2002). When problem solving prevents organizational learning. *Journal of Organizational Change*, **15**(2), 122–137.

Van de Ven, A.H. and Polley, D. (1992). Learning while innovating. *Organization Science*, **3**, 92–116.

Vince, R. and Saleem, T. (2004). The impact of caution and blame on organizational learning. *Management Learning*, **35**(2), 133–154.

Virany, B., Tushman, M.L. and Romanelli, E. (1992). Executive succession and organization outcomes in turbulent environments: an organizational learning approach. *Organization Science*, **3**, 72–91.

Walsh, J.P. and Ungson, G.R. (1991). Organizational memory. *Academy of Management Review*, **16**, 57–91.

Wanous, J.P., Reichers, A.E. and Austin, J.T. (2000). Cynicism about organizational change: measurement, antecedents and correlates. *Group and Organization Management*, **25**, 132–153.

Weick, K.E. (1977). Enactment processes in organizations. In Staw, B.M. and Salancik, G.R. (eds), *New Directions in Organizational Behavior*. Chicago: St. Clair Press, pp. 267–300.

Weick, K.E. (1995). *Sensemaking in Organizations*. Thousand Oaks, CA: Sage.

Weiss, H.M. (1990). Learning theory and industrial and organizational psychology. In Dunnette, M.D. and Hough, L.E. (eds), *Handbook of Industrial and Organizational Psychology*, Vol. 1. Palo Alto, CA: Consulting Psychologists Press, pp. 171–221.

Wolfe Morrison, E. and Milliken, F.J. (2000). Organizational silence: a barrier to change and development in a pluralistic world. *Academy of Management Review*, **25**, 706–725.

Zander, U. and Kogut, B. (1995). Knowledge and the speed of the transfer and imitation of organizational capabilities: an empirical test. *Organization Science*, **6**, 76–92.

Zell, D. (2001). Overcoming barriers to work innovations: lessons learned at Hewlett-Packard, *Organizational Dynamics*, **30**(1), 77–86.

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