

FROM ERROR PREVENTION TO ERROR LEARNING: THE ROLE OF ERROR MANAGEMENT IN GLOBAL LEADERSHIP

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ABSTRACT

Transformational, charismatic, and related leadership theories play an important role in understanding how leaders motivate better performance. However, these approaches have paid surprisingly little attention to the management of error in organizations. In fact, current studies in transformational leadership tend to define the management of error as one of the negative features of leadership. Preventing error and learning from error is a high profile leadership role in a wide variety of global industries, and therefore, it is important that leadership theories encompass this critical task. We draw on different streams of research to provide a more integrated and positive approach to leadership and the management error. Studies of error management culture provide insights into the organizational systems that are important for responding and learning from error. We discuss how error learning culture can inform the leadership behaviors that will enhance learning from error. We also draw on regulatory focus theory to show how managing error can be differentiated from other leadership activities. The integration of these ideas with current leadership theory provides a more comprehensive

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framework for understanding the role of leadership when error management is critical. We present this integrated framework and discuss how cultural factors are likely to shape the role of error management in a variety of global contexts.

INTRODUCTION

High standards of quality and safety are important requirements for the manufacture and delivery of products and services in the global market. Although quality standards are often set by supranational bodies (i.e., International Organization for Standardization), they often lack jurisdiction. Therefore, complying with international standards is not compulsory worldwide, and each country (or region) can apply their own laws and regulations. In a global context, developing countries must strive to meet reliable and consistent standards that satisfy markets demands (Glover & Siu, 2001). For example, the People's Republic of China has experienced a number of problems with product quality, possibly arising from the need to respond to rapid changes in the market place (Tjosvold, Yu, & Hui, 2004).

How do leaders manage safety and reliability in a global context? Surprisingly, current leadership theories pay little attention to the processes through which leaders avoid major errors or manage day-to-day imperatives for reliability. Contemporary theories of leadership, such as transformational leadership theory, emphasize emotions, values, and the role of the leader creating a more motivating work environment (Rafferty & Griffin, 2004). These theories are powerful explanations of the mechanisms by which leaders can transform their subordinates' beliefs and attitudes to achieve performance beyond expectations. However, less attention is paid to the way leaders rectify errors or control deficiencies in the performance process. Although contemporary leadership theories themselves specify that managing activities such as detection of errors is a necessary precondition for transformational change (Bass & Avolio, 1993), the operationalization and measurement of these behaviors frequently assumes that they are negative in character and effect.

Several authors have called for a revision of the way transformational leadership theories approach the management of error (Hinkin & Schriesheim, 2008a; Judge, Woolf, Hurst, & Livingston, 2008). In particular, the construct "management by exception" (MBE) has been treated in contradictory and inconsistent ways across theories and empirical studies.

MBE refers to the degree in which the leader takes a corrective action on the basis of results of leader–follower transactions (Judge & Piccolo, 2004). MBE is further divided into two categories of behavior depending on the timing of the intervention. Active MBE involves the leader monitoring the environment and actively searching for and acting on errors that are about to happen. Passive MBE refers to the leader taking corrective action once the problem has occurred (Antonakis & House, 2002; Howell & Avolio, 1993).

Despite the conflicting results found in the literature regarding the impact of MBE on followers' performance (Howell & Hall-Merenda, 1999) and the explicit acknowledgment that "it is hard to conceive of an effective leader who would not monitor performance and take corrective action when such action was required" (Howell & Avolio, 1993, p. 892), scholars have presupposed an inexorable connection between MBE and negative deeds such as coercion or punishment (Tejeda, Scandura, & Pillai, 2001). This assumption leads inevitably to ascribing a negative connotation to MBE that has persisted in the literature (Garman, Davis-Lenane, & Corrigan, 2003; Hinkin & Schriesheim, 2008a, 2008b; Tejeda et al., 2001) and is reflected in its measurement (Yukl, 1999). Most measures of MBE focus on intrusive and controlling forms of monitoring while omitting the behaviors that the leader might display when correcting mistakes or problems.

Clearly, if MBE was the only behavior displayed by a leader and it was coupled with a continuous criticism of followers' actions, it would likely provoke feelings of animosity and lower the motivation and effort of followers (Bass, 1985). However, MBE can be accompanied by a great array of behaviors (Yukl, 1999) including "transforming" ones or those aimed at developing subordinates' skills and abilities. Furthermore, research indicates that contingent negative, or aversive reinforcement, can be turned into a positive feature if it is perceived as fair and consistent, helps to clarify performance standards, takes into account the subordinate's skills, abilities, and knowledge, and is accompanied by the issuance of rewards for appropriate actions (Podsakoff, Todor, Grover, & Huber, 1984).

Two areas of research suggest that it is time to reconsider the role of MBE. First, the assumed negative effects of MBE on followers are questionable (Hinkin & Schriesheim, 2008a; Judge & Piccolo, 2004) as reflected in the most recent meta-analysis of the transformational-transactional theory, which has shown mild positive relationship between (active) MBE and subordinate perception of leader effectiveness and satisfaction with the leader ($\rho = .13$ and $.24$ respectively; Judge & Piccolo, 2004). Second, enactment of MBE appears not to be only essential but also

expected in certain professions, organizational cultures, or environments (Garman et al., 2003; Howell & Hall-Merenda, 1999).

The fundamental idea behind MBE is not new to transformational-transactional leadership theory. Behaviors encapsulated in the construct of MBE have been discussed and included in several taxonomies of leadership (Fleishman et al., 1991). In addition, monitoring and control activities have been regarded as crucial determinants of leader performance (Morgeson, 2005) because they allow the leader to be aware of potential or actual problems and adopt the necessary adjustments for solving them (Fleishman et al., 1991; Zaccaro, Rittman, & Marks, 2001). However, these insights have not been incorporated into most contemporary studies of transformational leadership.

To develop a more balanced view of error prevention, we propose that the leader's motivation to influence followers is influenced by the situational regulatory focus (Higgins, 1997) adopted by the leader. Regulatory focus theory (Higgins, 1997) provides a framework to understand why in certain situations monitoring subordinates and providing contingent feedback (i.e., MBE) might be the most appropriate leadership style. In addition, following one of the principal tenets of the transformational-transactional paradigm, we argue that the display of transformational behaviors does not prevent, but complements, the enactment of transactional behaviors. This complementary relationship is essential for the attainment of specific organizational goals such as ensuring quality or improving safety records. We consider that the latter goals prompt the leader to assess the situation as one of avoiding failure, in contrast to other goals in which the situation is assessed as one of approaching success (i.e., reaching a bonus target). Regulatory focus theory (Higgins, 1997) is, therefore, a valuable framework developing a better understanding of the motivation for individuals to approaching success or avoiding failure.

Regulatory Focus Theory

The distinction between approach and avoidance motivation has been the central tenet of different schools of philosophy since prominent ancient Greek thinkers proposed that the primary guide for human conduct was the pursuit of pleasure and the avoidance of pain. Since approach and avoidance motivation differs as a function of the valence of the end-state, the consequences of a given event or potential event determines behavior. When the valence of an event is positive, behavior is energized by approach

motivation. Otherwise, when the consequences are expected to be negative, behavior is energized by avoidance motivation.

This distinction has been a key concept for most theorists of motivation who have acknowledged the role played by the pleasure-pain dichotomy in one or another form (Elliot, 1999) to the extent that they are referred to as “the building blocks of behavior” (Carver, 2006, p. 105). Regulatory focus theory (Higgins, 1997) extends previous theory on the hedonic principle by assuming that two self-regulatory systems with different goal-pursuit strategic means serve different primary needs such as the need of nurturance and the need of security. The two different systems guiding goal-directed behavior are named promotion and prevention focus. The strategic means corresponding to each system are eagerness and vigilance, respectively.

Promotion focus regulates the achievement of rewards and it is concerned with the presence or absence of positive outcomes. People operating under a promotion focus regulate their behavior toward advancement, aspiration, and accomplishments. In contrast, prevention focus regulates the avoidance of punishment and is concerned with the absence or presence of negative outcomes. People operating under prevention focus regulate their behavior towards protection, safety, and responsibilities.

Regulatory focus is conceived to be both a chronic disposition and a situational state. Higgins (1997) suggested that the chronic state emerges during early stages of life due to the different patterns of parenting. However, despite the chronic focus, all individuals can adopt either of the regulatory foci in a given situational context such as the workplace. For example, if cues present in the workplace facilitate the framing of a situation in “loss versus non-loss” terms, it is likely that the individual would adopt a situational prevention focus. In contrast, a promotional situation focus is elicited when the contextual cues facilitate the framing of a situation in “gain versus non-gains” terms (Kark & van Dijk, 2007; van Dijk & Kluger, 2004).

Research indicates that an individuals’ chronic regulatory focus can be overridden by powerful contextual variables present in the workplace, therefore creating a specific regulatory focus at work. This regulatory focus at work is moderately stable over time (Brockner & Higgins, 2001; Wallace & Chen, 2006) since it is the product of individual differences (e.g., personality) and those situational variables that can be either likely to be constant over time (e.g., organizational culture) or specific to a given situation (e.g., task characteristics; see Brockner & Higgins, 2001). Thus, regulatory focus at work can swing from promotion to prevention and vice versa depending on cues present in the environment at a given point of time.

One way leaders can shape the regulatory focus of their subordinates is a function of their inherent position as role models, which engenders a social learning process. Subordinates interpret the priorities of work processes through observation and interaction with leaders (Bandura, 1986), who send messages related to which practices and behaviors are expected and valued (Guzzo & Noonan, 1994; Schein, 1992). In addition, the use of language and the administration of feedback have also been discussed as powerful tools inherent to the leadership position that influences the subordinate adoption of a promotion or prevention regulatory focus (Brockner & Higgins, 2001).

Previous researchers have linked transformational and transactional leadership styles to promotion and prevention focus (Brockner & Higgins, 2001; Kark & van Dijk, 2007). These authors argue that transformational leadership style is motivated by a promotion focus since both concepts are characterized by a pursuit of accomplishments and aspirations, while transactional leadership is motivated by prevention focus due to the concern with deviations, safety, and security. Nonetheless, as we have noted earlier, transformational and transactional styles of leadership are not necessarily in conflict. The superior outcomes of transformational leadership are partially derived from an appropriate use of transactional behaviors. However, virtually no research has tried to understand the motivational principals leading to the use of these behaviors and in particular MBE.

Linking Prevention Focus and Management by Exception

Transactional leadership behaviors are characterized by establishing consequences and contingencies on subordinates' actions that help to clarify the meaning of transformational leadership behaviors (Hinkin & Schriesheim, 2008a). Active MBE involves the proactive intervention of the leader to avoid or correct problems or errors (Garman et al., 2003). Recognizing or discovering an exception that might endanger performance levels is likely to orient a leader's regulatory focus to one of prevention. In other words, the leader adopts a vigilant strategy aimed at avoiding potential barriers or hazards to ensure correct task completion (Wallace & Chen, 2006). Previous research suggests that situational prevention focus is positively related to safety performance (Wallace & Chen, 2006; Wallace, Johnson, & Frazier, in press) since there is a sensitivity toward the presence of punishment that in turn favors a strategy to complete tasks in a safe and secure manner to prevent, or at least minimize, the presence of negative outcomes.

Alertness and Ensuring Performance

Collecting information regarding the status of the work effectiveness and productivity of subordinates is a critical leadership behavior (Fleishman et al., 1991; Yukl, Gordon, & Taber, 2002; Zaccaro et al., 2001). Additionally, leadership monitoring of the internal and external work environment facilitates the acquisition of accurate and fair information about subordinates' performance (Komaki, Desselles, & Bowman, 1989), goals, task requirements (Hackman & Walton, 1986), and environmental changes (Kozlowski, Gully, Salas, & Cannon-Bowers, 1996) and forecasts the presence of negative or positive events that may be imminent (Hackman & Walton, 1986). Thus, monitoring provides the leader with information that can be used for communicating instructions, expectations, and behavior-outcome contingencies (Zohar, 2002). Komaki et al. (1986) and Mattila, Hyttinen, & Rantanen (1994) reported that managers who spend more time monitoring were rated more effective in terms of financial and safety performance since they provided more frequent feedback.

Overall, monitoring allows leaders to detect deviations and to resolve uncertainty in work processes, thus promoting security in the workplace at the sake of controlling others (Bass, 1985; Kotter, 1990). Furthermore, the negative outcomes derived from the controlling aspect of monitoring might be translated into positive ones when monitoring is encapsulated within a broader system intended to improve employees' skills and abilities (Holman, Chissick, & Totterdell, 2002).

Drawing on similarities between monitoring and Lazarus and Folkman's (1984) cognitive theory of psychological stress and coping, we propose that leaders promote learning in the workplace through a process that includes MBE (see Table 1). Lazarus and Folkman (1984) identify two critical mediators, cognitive appraisal and coping, in the stressful person-environment relationship and their immediate and long-term consequences. Cognitive appraisal is a process through which the individual assesses if a particular encounter with the environment is relevant to his or her well-being. The theory distinguishes between two different cognitive appraisals: primary and secondary. During the former, the individual assesses if there is a potential benefit or detriment with a particular encounter with the environment. In secondary appraisal, the person evaluates what can be done to avert the situation by preventing or overcoming the harm or to improving the prospects for benefit.

In a similar vein, we argue that monitoring facilitates the leader to be aware of exceptions that may affect the work processes. Then, when the

Table 1. Similarities between Lazarus and Folkman (1984) and the MBE Process.

Description	Lazarus and Folkman (1984)	Relevance of MBE
Evaluation whether there is anything at stake	Primary appraisal	General monitoring
Can anything be done to overcome or prevent harm?	Secondary appraisal	Attention on exceptions
Activities that focus on directly changing the elements of the stressful situation	Problem-focused coping	Management by exception

leader recognizes an exception that may result in negative outcomes, he or she might put more emphasis on altering the expected negative course of action by directly tackling the exception.

As we have noted earlier, monitoring the internal and external work environments facilitates the leader acquisition of information that may have implication for team functioning (Morgeson, 2005). The scope of information that can be obtained is broad, ranging from gathering accurate information about team performance (Komaki et al., 1989) to an awareness of environmental changes (Kozlowski et al., 1996). Furthermore, monitoring activities can also provide the leader with information regarding negative events that are about to happen (Hackman & Walton, 1986). We consider that exceptions are events that fall in this latter category. We define exceptions as “organizational deficiencies, originated by the acts of one or more individuals, that, without intent of causing harm, depart form organizational rules, compromising the safety of the originator(s), co-workers, clients, and/or the organization itself.” Therefore, exceptions include wide extension of concepts such as threats (Jackson & Dutton, 1988), human error (Reason, Parker, & Lawton, 1998), early warning indications (Zakay, Ellis, & Shevsky, 2004), organizational deviations (Vaughan, 1999), and problems (Downs, 1967). Exceptions need to be addressed as soon as they are recognized because they are likely to result in undesirable outcomes. Exceptions entail an observable deviation from shared expectations that, if corrected, might be later on treated as near misses (Ramanujam & Goodman, 2003). However, if not corrected, they might result in incidents (Perrow, 1984), accidents (Perrow, 1984), disasters (Turner & Pidgeon, 1997), crises (Shrivastava, 1987), or latent errors (Ramanujam & Goodman, 2003).

So far, we have described a process resulting in MBE behaviors. These behaviors are motivated by framing the situation as one of “loss

versus non-loss” in which the main objective of the leader is to avoid a detrimental outcome while regaining control over an exception that has been recognized. This process is consistent with an error prevention strategy. That is, the attempt of preventing erroneous actions whenever possible (Reason, 1990) to reduce the development of negative consequences.

Overall, MBE fulfills the function of avoiding negative error consequences by facilitating error anticipation, early error detection, and quick error handling. Over-reliance in MBE can be ineffectual in the long term since they may hamper employee development and the organizational learning. MBE needs to be understood as an immediate resource to be used when the situation demands it, and if exerted, it needs to be encapsulated into a broader strategy aimed at promoting learning from errors. Within this broader context, MBE can be a catalyst for learning to occur and we explain this process of learning from errors next.

LEADERS, ERRORS, AND LEARNING

Leaders play a key role in enabling employees to learn from their errors because their position allows them to overcome the barriers impeding learning (Cannon & Edmondson, 2005). Impediments to learning from errors can be found embedded in technical systems or can be related to the interpersonal work context (Cannon & Edmondson, 2005). In both instances, leaders can influence the process by modeling their individual approach to the policies, practices, and procedures that the organization rewards, supports, and expects (Naumann & Bennett, 2000).

Cannon and Edmondson (2005) argue that enabling organizational learning from failure (e.g., error) requires the management of three independent but interrelated processes: identifying failure, analyzing failure, and deliberate experimentation (p. 300). As we have noted earlier, although it is desirable that subordinates recognize their own errors, this is not always possible (e.g., lack of knowledge, unawareness of the problem).

Errors are a disruptive event that can trigger a set of negative consequences affecting the person as well as organizational outcomes. Therefore, managers need combine their active role when errors and their consequences are appraised with a sensitivity toward subordinates' needs when coping with the experience and consequences of error. To some extent, the behaviors necessary to successfully manage both needs demand a certain degree of behavioral complexity (Denison, Hooijberg, & Quinn, 1995) since

monitoring or controlling activities might be in conflict with innovation or developing activities.

To profit from errors, they need to be framed as relevant learning opportunities (Cannon & Edmondson, 2005; Sitkin, 1992; Zhao & Olivera, 2006). Thus, managers need to send unequivocal messages that learning from errors is expected, valued, and rewarded, facilitating, therefore, the adoption of a learning orientation among subordinates although their natural tendency might be otherwise (Cannon & Edmondson, 2001). Research also indicates that when employees perceive that errors yield learning benefits for themselves, they will be more motivated to report them on their own volition (Zhao & Olivera, 2006).

However, a learning orientation cannot be taken for granted despite being promoted in formal organizational procedures and policies. Similar to the tension found between safety and productivity (Wallace & Chen, 2006; Zohar, 2000), learning and productivity goals may be at odds with each other. This might be especially true in demanding environments where productivity demands compromise, not only learning objectives but also the right to work in a safe work environment (Wallace et al., in press). Therefore, a learning orientation needs to be regularly supported through the observation and interaction of the employees with their leader, who needs to transmit a consistent message regarding the behaviors and practices that he or she expects, values, supports, and rewards. The goal of learning from error needs to be encapsulated into a broader objective aimed at developing employees. Managers cannot expect to engage their subordinates in learning from their own errors if other aspects of employee development are ignored. Thus, practices such as providing time-off to attend developmental activities (Maurer & Tarulli, 1994) or stimulating employees to put in practice newly learned skills (Ford, Quinones, Sego, & Sorra, 1992) need to concur with their messages regarding the importance of learning from errors or with the provision of constructive feedback (Dragoni, 2005).

If a situation demands rapid intervention, the manager can either take a more active role and rectify the problem by himself or herself or specify direct instructions to the individual on how to correct the error and avoid its repetition. Although this sequence of events also promotes learning (single-loop learning), the manager risks only addressing the superficial aspect of a deep problem, thus ignoring the underlying causes that led to his or her intervention, and exacerbating the negative consequences of being found responsible for an error. Thus, despite the fact that the solution might be acceptable in the short term, there is an associated risk of falling into a vicious circle in which the solution only exacerbates the problem

(Edmondson, 1996) and in which the actions can be deemed as punitive by the group members. The deleterious effects of the manager being punitive toward errors are well documented in the literature (e.g., Edmondson, 1996).

The prospect of committing an error is a threatening event that can incur an array of material and personal costs (Zhao & Olivera, 2006). The tendency in punitive cultures is to attribute errors to undesirable personality traits, lack of knowledge and skills, and low cognitive ability (van Dyck, Frese, Baer, & Sonnentag, 2005), thus admitting one's own errors or being found responsible of an error can endanger one's personal image (e.g., self-esteem), interpersonal relationships, and career prospects (Cannon & Edmondson, 2005; Edmondson, 1999; Zhao & Olivera, 2006). Therefore, in such environments, employees might become reluctant to disclose their own errors (Zhao & Olivera, 2006) or more prone to engage in counterproductive work behaviors such as covering-up errors (van Dyck et al., 2005). Ironically, research in the medical setting (Meurier, Vincent, & Parmar, 1997) suggests that nurses in punitive environments who opt for not reporting errors are also likely to avoid both seeking social support and devising a course of action to effectively deal with the negative consequences of the error.

In addition, errors generate strong negative emotions such as guilt, shame, or fear (Cannon & Edmondson, 2005; Edmondson, 1996; Rybowskiak, Garst, Frese, & Batinic, 1999), which can impair learning because they tend to divert the attention toward oneself and away from the task (Keith & Frese, 2005). Individuals working in punitive cultures toward errors develop a tendency to ignore or cover up errors because the threats they may face if they disclose their own errors are likely to outweigh the benefits (Edmondson, 1996; Zhao & Olivera, 2006).

From Error Prevention to Error Learning

Fortunately, research focused on investigating how organizations can profit and learn from their errors converge in situating managers as important figures that through their actions and attitudes can revert, or at least diminish, the negativity conveyed by errors. Organizations, and hence managers, can adopt two strategies to deal with errors: error prevention and error management (van Dyck et al., 2005). Error prevention tries to eradicate the presence of errors by establishing mechanisms (e.g., human factors, system engineering) aimed at reducing the occurrence of errors. Although error prevention can yield a certain degree of success in eliminating errors (e.g., in stable environments), it is based on an unrealistic tenet because errors

cannot be totally eradicated (Prumper, Zapf, Brodbeck, & Frese, 1992; Reason, 1997). Whenever people are involved in a process, errors are expected due to the fallible nature of human cognition (Dörner, 1996; Norman & Brobow, 1975). In addition, solely relying on error prevention is likely to be deleterious to the organization in the long term. First, error prevention hinders learning (Sitkin, 1992) and innovation (van Dyck et al., 2005), and its controlling aspect might represent an obstacle for experimentation (Huber, 1991). Second, error prevention is likely to steer into a culture of blaming and punishment in regard to the presence of errors that may exacerbate the strain caused by errors and in which counterproductive work behaviors (e.g., covering-up errors) might become the norm (see earlier). Finally, a pure error prevention diminishes the degree to which errors are anticipated, and less attention is likely to be devoted to training aimed at “knowing” how to deal with and recover from errors; thus, when (even minor) errors appear, they can cause severe damage (Frese, 1991).

Although research has traditionally focused on error prevention (Argyris, 1985; Wilpert, 1995), the advent of error management theory (Frese, 1991) has prompted scholars to look at the error process in a different fashion. Error management departs from error prevention in both its acceptance of errors as an intrinsic part of organizational life and in decoupling the error itself from its consequences. Error management places attention on dealing with the error and its negative consequences rather than trying to do away with errors (van Dyck et al., 2005). In addition to effectively handling and containing negative consequences, error management aims at increasing the speed at which errors are reported and detected and to ensure that learning occurs (van Dyck et al., 2005).

Despite the great differences in their key mechanisms for maintaining safety, error prevention and error management are not incompatible, and it is expected that their combination can produce synergistic outcomes. However, enabling both systems might require managers to possess a certain degree of behavioral complexity (see earlier). Error prevention has been suggested to be the first line of defense serving two fundamental features (van Dyck et al., 2005): ensuring the quality of production and services and enhancing safety in the organization. Since errors are ubiquitous to organizational life, when they surface, error management represents a second line of defense aimed at controlling the negative consequences of the error and preventing the re-occurrence of the error in the long term.

High Reliability Organizations (HROs) are examples of organizations that employ similar systems of defense. HROs are characterized by dealing with hazardous systems and complex technologies in which outstanding

specialized knowledge and management skills are necessary to safely meet production demands (Roe & Schulman, 2008). These are organizations in which errors, accidents, and failures can have catastrophic consequences and have nurtured a pervasive shared mindfulness toward conditions that might causally lead to error and failure (Weick & Roberts, 1993). This collective mindfulness or “culture of reliability” (Roe & Schulman, 2008) permits employees to adopt an active and vigilant attention to potential errors (Weick, Sutcliffe, & Obstfeld, 1999). Some of the principal features of HRO are the constant search for improvement, the assumption that reliability is not fungible, and the belief that key organization properties such as attention, coordination, and mutual trust across interdependent units need to be maintain over time and cannot be treated as given (Roe & Schulman, 2008). Reliability is understood as “the ability to plan for shocks as well as to absorb and rebound from them in order to produce services safely and continuously” (Roe & Schulman, 2008, p. 5), entailing, therefore, great degrees of anticipation and resilience. As Weick and Sutcliffe (2001, p. 14) have stated “the signature of HROs is not that it is error-free, but that errors don’t disable it.”

In similar way, companies aiming at profiting from errors need to be consistent in their assumptions across all levels of the organization. A fundamental pre-requisite is to accept errors as an intrinsic feature of the organization that although not desirable can appear at any moment, and although conveying negative consequences, it can also yield positive outcomes.

These beliefs about errors need to be not only captured in formal organizational policies and documents (e.g., vision) but also reflected in daily activities and procedures. van Dyck et al. (2005) argue that free and fluid communication about errors might constitute the most important error management practice. Communication about errors facilitates the development of a shared awareness of high-risk situations, the rapid detection of errors, the precise diagnoses of the situation, the seek and offer of interpersonal help, and the effective handling of errors (Cannon & Edmondson, 2005; Hofmann & Lei, 2007; Seifert & Hutchins, 1992; Tjosvold et al., 2004; van Dyck et al., 2005) . The combination of these features abate the negative consequences associated with errors (van Dyck et al., 2005) while enhancing the organizational viability and performance (Sitkin, 1992; Cannon & Edmondson, 2005).

As we have noted earlier, talking about one’s errors is a threatening behavior that entails a certain degree of risk because it can create an evaluative or social threat for the individual (Hofmann & Lei, 2007). To

engage in open communication regarding errors, employees must trust their managers. Trust can be defined as “one’s expectations, assumptions, or beliefs about the likelihood that another’s future actions will be beneficial, favorable, or at least not detrimental to one’s interest” (Robinson, 1996, p. 576). Thus, if a manager is trusted, employees will be more willing to put themselves at risk when communicating about errors (Mayer, Davis, & Schoorman, 1995).

In addition to trust, research indicates that psychological safety is a key enabler for effective learning processes (Edmondson, 1999). Team psychological safety refers to the shared perception that members of a team are safe for interpersonal risk taking (Edmondson, 1999). Psychological safety is characterized by a climate of interpersonal trust and mutual respect, which facilitates team members to ask questions, seek feedback, experiment, reflect on results, and discuss (potential) errors or unexpected outcomes of actions (Edmondson, 1999, p. 353).

As for any organizational climate, team members are likely to pay attention to one another’s attitudes and behaviors, but they are particularly attentive to manager’s attitudes and behaviors (Tyler & Lind, 1992), which, therefore, exert an important influence in shaping the degree of a team psychological safety. Transformational leaders are likely to develop a shared perception of psychological safety among their subordinates throughout the engagement in supportive and developmental behaviors (Edmondson, 1999).

GLOBAL ISSUES

The main challenges for error prevention and quality management are universal; errors are a natural feature of organizations. However, if they are well managed, they can yield outcomes that surpass learning. Specifically, Van Dyck et al. (2005), in a study involving Dutch ($n = 65$) and German ($n = 47$) companies, found that organizations with a positive approach toward errors had better indices of economical performance.

In addition, studies conducted in other cultural settings provide some evidence that support the generalizability of the mechanisms for preventing and learning from error. For example, in a study involving 107 teams from the city of Shanghai (People’s Republic of China), Tjosvold et al. (2004) found that teams were able to learn from their mistakes as long as they took a problem-solving orientation based on developing cooperative goals within the team. In contrast, competitive and independent goals were found to induce blaming, which did not enhance learning from mistakes. Findings

from this study are particularly relevant since they challenge previous research indicating that in a collectivist-oriented culture such as China, problem-solving approaches are interpreted as threats. It appears, instead, that Chinese organizations might benefit from problem-solving approaches when discussions are conducted skillfully and respectfully. This study highlights the importance of open communication, psychological safety, and a mutual purpose to overcome the barriers that impede learning from errors. In addition, it also suggests that in both Western and Chinese societies people might need to be familiar with the social norms that prevail in other cultures if they are to establish successful intercultural relationships (Yang & Kelly, this volume).

Future research should also examine the role played by non-Western leadership styles (e.g., transformational leadership) in facilitating learning from error. For example, a leadership style labeled “paternalistic leadership” (Westwood & Chan, 1992) is an effective leadership style in non-Western cultures (Pellegrini & Scandura, 2008) that is especially widely spread in the Chinese culture (Cheng, Chou, Wu, Huang, & Farh, 2004). This leadership style, which stems from cultural Chinese traditions (e.g., confucianism and legalism), combines strong authority with concern and considerateness (Westwood & Chan, 1992). Paternalistic leadership style is characterized by three dimensions named benevolent [*shi-en* – granting favors], moral [*shuh-der* – setting a moral example], and authoritarian [*li-wei* – inspiring awe and fear] (Cheng et al., 2004). Cheng et al. (2004) found that when high authoritarian leadership style, that is, leader behaviors that assert authority and control and demand obedience without dissent, was combined with high benevolent leadership, employees tend to be more compliant with the leader. This finding leads us to question what would be the subordinates’ attitudes and behaviors if paternalistic (high in authoritarian and benevolence leadership styles) leaders increase the degree that subordinates are expected to learn from errors. Nonetheless, authoritarian leadership in the Chinese context has also been linked to abusive supervision (Aryee, Chen, Sun, & Debrah, 2007). The role played by authoritarian leadership in Chinese culture merits further investigation (Pellegrini & Scandura, 2008). Finally, research indicates (Glover & Siu, 2001) that Chinese managers with a paternalistic leadership style face a challenge if they are to successfully adapt current Western practices of quality management that require the active involvement of employees to avoid quality-related problems at all levels in the company. However, similar challenges are faced by Western leaders who opt for relying on Western human resources practices or for any leader maintaining a single cultural viewpoint.

MBE seems to be an important leadership behavior for preventing errors. In addition, leaders can extend the benefits of MBE to help establish a learning organization. However, to ensure positive outcomes, it is necessary to emphasize the importance of how error is understood and communicated in different cultures.

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