The *No Blame* Organization

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Abstract

High Reliability Organizations (HROs) are those organizations in which even a minor error in their processes may seriously hinder the very existence of the firm, together with the safety of external actors (Roberts, 1990). Past field studies have shown that HROs encourage the reporting of errors and near misses, exploiting these accidents to improve their operative processes. We label this practice as a *no blame* approach to error management, arguing that it enhances organizational learning.

In this paper, by taking a cognitive perspective of organizations (Weick, 1979; Grandori, 1984), we draw on existing contributions on HROs in order to discuss the characteristics of the *no blame* organization. Our purpose is to solve the following paradox: why HROs, which can not afford to commit errors, do not blame operators that spontaneously report them? We attempt to pool together and extend empirical findings, in order to delineate the theoretical grounding of the *no blame* organization and highlight its essential traits. The existence of *no blame* practices suggests that the exploitation of information deriving from error-reporting may prove beneficial in environments where issues of learning and reliability are particularly relevant. In the final section of the paper we appraise costs and benefits of adopting a *no blame* approach.

1. INTRODUCTION

The *no blame* approach at work: An illustrative example from commercial airlines

Commercial airlines can be considered as quasi-ideal settings for the treatment of blame and errors in organizations. During an interview, one flight commander presented us with a revelatory example:

"*Consider the relationship between me (the commander) and the first-officer, my direct subordinate. Nowadays, any divergence in interpreting an indication from the air-traffic control tower is verified. In case of misunderstanding between us, he or she has to openly contradict me, in case he or she believes that obeying my direction could lead to a situation of danger. On my turn, being the commander, I have to constantly keep in mind that errors may happen to me anytime and, thus, verify the situation with the tower before taking any decision. In these cases I don't have to take advantage of the hierarchical relation. What is novel, also in commercial airlines, is that only 20 years ago this would have been unimaginable because, under that rigid hierarchical organizational design, a co-pilot would have never dared to question the commander*"[1].*

In airlines operations, errors are usually managed while performing other delicate processes, simultaneously, and a lot of attention is devoted to error reporting and error resolution. Pilots are required to report mistakes and potentially dangerous situations in order to design corrective interventions. The National Transportation Safety Board (NTSB), which is entitled to supervise air traffic in the U.S., is based on the assumption that errors are

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[1] Qualitative evidence recalled in this paper is based on a panel discussion with HROs participants (air-carriers commanders, clinical surgeons, anaesthetists, managers responsible for air traffic control in airports, alpine rescue units commanders, fire brigades commanders) in order to obtain first-hand advices for subsequent research and to investigate the adoption of *no blame* practices in non US organization. The panel inspired a series of semi-structured interviews with HR and Operations managers and operators of different types of organizations (HROs and not). A separate paper discusses more extensively this evidence (*authors omitted*, 2004).
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inherent to the nature of human activity. Many industry operators explained us that this is mainly due to the architectural complexity of an environment in which the cost of committing an error is often unbearable.

Recent organizational studies have investigated functioning dynamics and structures in high reliability organizations (HROs) such as air traffic control systems, nuclear plants, airlines, hospitals (Perrow 1984; Roberts 1990; Roberts & Bea, 2001; Haunschild & Sullivan, 2002). High Reliability Organizations (HROs) are those organizations in which even a minor error in their processes may seriously hinder the very existence of the firm, together with the safety of external actors (Roberts, 1990). The contributions mentioned above have explained how these High Reliability Organizations (HROs), albeit constantly facing high levels of risk, manage to achieve both operative safety and efficiency. In recent years, several contributions analysed the attention that HROs devote to small errors and near misses (Roberts, 1990; Weick & Roberts, 1993; Carroll, 1998; Marcus & Nichols, 1999; Morris & Moore, 2000; Haunschild & Sullivan, 2002; Ramanujam, 2003).

Most interestingly, investigation on *no blame* practices in HROS reveals a paradox. Theoretically, organizations such as nuclear power plants, rescue units, air-traffic facilities, etc. should afford errors, since these might ultimately threaten their very existence. In reality, though, these organizations have developed and maintained a *no blame* approach, encouraging and valuing spontaneous reporting of errors and near misses. The paradox lies in the following question: how is it possible that organizations which should apparently fear errors the most, do not actually blame operators who admit their mistakes? This runs against the common managerial perspective, so widespread in the end of the XX century, that argues in favour of error-free processes, codified and standardized within and across organizations, such as quality control systems and continuous improvement techniques (e.g. Statistical

Process Control, Six Sigma) (Ishikawa, 1976; Pande, Neuman & Cavanagh, 2002). Following our consideration, the XXI century shall be opened with a more comprehensive view of errors and variances in operative processes.

Among the different studies that have investigated the organizational characteristics of HROs, we hold that especially Karl Weick's contributions to organizational design and cognition illustrate how to solve this issue. Weick has been among the first scholars to investigate organizational practices of HROs and has introduced a number of theoretical arguments that provide organizational and cognitive groundings for HROs practices (Weick, 1987; Weick & Roberts, 1993; Weick & Sutcliffe, 2001, 2003). His descriptions of mindful activities in HROs and the attention he devoted to continuous organizational change stand as a crucial reference for the *no blame* approach. More prominently, the idea of organizations as scientific communities is the theoretical notion that provides the ultimate rationale for a theory of the "*no blame* organization", which exploits a cognitive perspective of organizational practices (Grandori, 1984, 2004). Nevertheless, we believe that we can expand and extend Weick's contributions by developing additional theoretical insights regarding *no blame* practices in HROs, and by outlining the traits of a *no blame* organization.

Our main purpose in this paper is to start off the discussion about an approach to error management, defined as "*no blame*", which ultimately fuels organizational learning. In this respect, we try to extend Weick's approach, which is mainly descriptive, towards a more prescriptive usage, and to extend and stretch out theoretical considerations that, albeit suggested, were not explicitly developed.

Our effort to investigate the theoretical bases of *no blame* practices may prove beneficial in order to shed light on the phenomena and as basis to discuss the potential applicability of these practices in more "traditional" organizations (not HROs). Although some contributions suggest the potential extendibility of HROs practices (Roberts & Bea,

2001; Weick & Sutcliffe, 2001), we perceive a lack of theoretical framework from which to derive precise research questions. In the final part of the paper we move in this direction, by trying to derive from Weick's contributions an exercise of organizational design aimed at elaborating the essential traits of the *no blame* organization. Furthermore, we propose a way to appraise the performance gains obtained through the adoption of *no blame* practices using a simulation model. Finally, we discuss the potential "dark sides" of adopting a *no blame* approach.

The paper unfolds as follows. Section 2 illustrates *no blame* practices and serves as a basis for the successive conceptual development. Section 3 highlights the theoretical building blocks that are instrumental in providing a theory of the *no blame* organization. Section 4 outlines the implications for organizational design – the trait of the no blame organization- and evaluates performance gains and costs associated with this approach. Section 5 concludes.

2. FROM THE PRACTICES OF HROS TO THE *NO BLAME* ORGANIZATION

The notion of a *no blame* approach to learning from errors can be traced to a variety of theoretical and empirical contributions. These studies argue that every human activity is characterised by a certain probability of error, which can be attributed to a wrong interpretation of a certain situation, to a problematic interaction among people, to a challenging coupling between technology and individuals (Perrow, 1984; McCormich & Sanders, 1992; Roberts & Bea, 2001). In general, learning from errors refers to the notion that organizations can effectively learn from experience, showing improvements in performance outcomes such as plant productivity, service timeliness and survival rates (Argote, Beckman & Epple 1990; Reason, 1997; Baum & Ingram, 1998; Argote & Darr, 2000). As opposed to traditional organization theory, however, learning from errors aims at gaining precious

insights from negative experience, or failures (Sitkin, 1992; Hodgkinson & Wright, 2002), instead of engaging in a search for excellence that might result in self-complacency (Weick & Sutcliffe, 2001), or in a "success bias" (Miner, Kim, Holzinger & Haunschild, 1999). Organizational errors can be a crucial factor in enhancing learning (Sitkin, 1992; Kim & Miner, 2000), as they shift the attention focus from superficial to latent relationships of causality, leading to more profound analyses of problems (Reason, 1997).

The relevance of near misses or critical incidents is particularly crucial for HROs. March, Sproull and Tamuz (1991) highlighted the difficulties of learning for organizations that cannot rely extensively on past experiences. Learning from a sample of one or fewer is a great challenge that asks for alternative learning strategies (March et al., 1991, Grandori, 1992) to all those organizations that, due to the very nature of their core activities, cannot afford a learning approach that exploits the lessons coming from the resolution of a number of past errors. The reason, for the specific class of organizations known as HROs (Roberts, 1990), is that even a minor error in their processes could seriously hinder the same existence of the firm and the safety of a series of external actors.

Typical examples are nuclear plants, hospitals, air traffic control systems, oil carriers, specialized financial institutions. These are high-risk firms that remain basically "invisible" until the occurrence of an error leads to the collapse of the system in which they operate. These organizations are "highly reliable" in that they experience extremely long time periods characterized by operative safety and organizational smoothness. Albeit the high potential impact these organizations might have on the environment in which they operate, there have been limited attempts to study their inner functioning dynamics (Perrow, 1984; Shrivastava, 1986; Roberts, 1990; Vaughan, 1996) or the lessons that other firms might learn from them (Weick & Sutcliffe, 2001).

These studies suggest that HROs are extremely effective in managing their operations and processes because, among other reasons, they

"[…] *design their reward and incentive systems to recognize costs of failures as well as benefits of reliability*" and "[*…*] *consistently communicate the big picture of what the organization seeks to do, and try to get everyone to communicate with each other about how they fit in the big picture*" (Roberts & Bea, 2001:71).

These organizations learn to be effective because, among other reasons, they adopt a proactive attitude toward potentially threatening situations, such as errors and near misses, engaging in thorough and systematic analyses that go beyond simple "*blame the operator*" interpretations (Haunschild & Sullivan, 2002). In these firms, organizational culture plays a major role in defining individuals' attitude toward knowledge sharing and, thus, organizational learning (Weick, 1987; Cook & Yanow, 1993; Weick & Sutcliffe, 2001; Tucker & Edmondson, 2003). Our evidence, in turn, confirmed the existence of such practices in the everyday operations of some high reliability organizations (*Authors omitted*, 2004). For example, all the aeronautic operators we contacted confirmed that there are mandates and specific procedures for the collection of near misses' reports.

Drawing mostly on the works of March et al. (1991), Reason (1997), and Weick and Sutcliffe (2001), we define as "*no blame*" an organizational approach characterized by a positive vision of errors. This means that, by relying on a particular set of organizational tools, errors and near misses committed by individuals while completing their tasks are used as a basis for organizational learning. A *no blame* approach underpins a shift in the attention focus, from the identification of blame as mere mismanagement of tasks at individual or group level, towards its conceptualisation as an operational lesson which might enhance future firm performances. Based on the assumption that no system is entirely flawless, a *no blame* system

represents a structured approach to managing organizational errors. This view highlights the importance of signalling errors and potentially hazardous situations by creating

"[…] *an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety-related information – but in which they are clear about where the line must be drawn between acceptable and unacceptable behaviour*" (Reason, 1997: 195).

Borrowing some terms from Weick and Sutcliffe (2001), we identify the *no blame* system as based on the three following dimensions:

A. ***Reporting Culture***: widespread reporting of errors and near misses is encouraged and rewarded. Individuals signalling these situations must not fear to incur in organizational blame and punishment, especially if disruptive effects did not take place because the individuals or group have been able to manage them. People are willing to exchange their opinions without feeling under constant judgment. Therefore, operators proactively ask for others' opinions without feeling that they are showing potential weaknesses. A reporting culture drives these assumptions and is essential to communicate errors and near misses.

B. ***Debriefing***: individual reports trigger purposeful organizational analyses of possible explanations, based on the interrelations between different elements (people, processes, technologies, culture, and environment). Individuals and groups who experienced errors are actively involved in the process of investigation.

C. **Narrative enactment**: Corrective actions and guidelines for future prevention or treatment of similar situations are identified, tested and conveyed by structured organizational processes. These imply, for example, the diffusion of the "story" of the error through narrative mechanisms, in order to share the experience.

The organisational and motivational side of the system - the *no blame* approach- is the ground for the architecture of procedures addressing error management and error resolution. In the last decades, production engineers have designed numerous powerful methods aimed at achieving error-free processes and products. Quality control systems and continuous improvement techniques (e.g. Statistical Process Control, Six Sigma) have succeeded in introducing significant improvement in this field (Ishikawa, 1976; Pande et al., 2002). Nonetheless, these methods have two significant limitations. First, they do not entirely account for the "human factor" in production, as errors cannot be easily traced to single individuals or groups directly responsible for them. Second, they do not intercept near misses, or critical situations that are managed locally through exceptional decisions and actions but that, if replicated, might have serious impact on the organization. We argue that these limitations can be overcome by favouring an organizational design that helps systemic interventions, i.e. actions that involve different levels (people, technologies, processes and culture). The *no blame* organization is an organization that enacts these systemic interventions, as it leverages an approach that does not blame the operators and encourages participation. Thus, the *no blame* approach is a motivational instrument that supports a systemic perspective of error management and learning.

A systemic analysis moves away from a simple "blame the operator" diagnosis, and can trigger constructive conflict in groups, resulting in a better understanding and in better problem responses (Jehn, Northcraft & Neale, 1999; Haunschild & Sullivan, 2002). Attribution theory argues that, when analysing causes and effects of relevant issues, investigators tend to posit attention on the person, rather than the situation as a whole (Nisbett & Ross, 1980; Fiske & Taylor, 1984; Marcus & Nichols, 1999; Morris & Moore, 2000). When the inquiry is about errors and accidents with serious implications, this tendency is further reinforced, resulting in "blame the operator" explanations (Perrow, 1984). This

cognitive shortcoming can seriously hinder the possibility for an organization to learn from its own experience (Sagan, 1993) as, once the operator is replaced or transferred, it is assumed that the problem has been removed from the system (Haunschild & Sullivan, 2002). A *no blame* approach can be an effective tool for overcoming such limitations. In fact, *no blame* is about "nurturing" small errors and near-miss incidents in a continuous, incremental process which might prevent overwhelming accidents, thereby eliminating the need for radical, traumatic learning. In this sense, a *no blame* approach might be regarded as a means of making the *how* and *why* of organizational learning more explicit.

3. THEORETICAL BUILDING BLOCKS OF *NO BLAME*

In this section we choose to focus on Karl Weick's theoretical contributions, with the intention to show that Weick's theorizing provides a number of rationales for a *no blame* treatment*,* albeit he has not explicitly mentioned this issue (Weick, 1987; Weick & Roberts, 1993; Weick & Sutcliffe, 2001). These building blocks, moreover, have not yet been exploited in a comprehensive rationalization of the attitude towards errors in HROs. We will review them in order to unravel what we label as the "*no blame* paradox": how is it possible that organizations which apparently should fear errors the most – HROs - are those that develop and maintain an organizational culture and operational practices that embrace the possibility of errors and encourage their reporting?

Out of the work of Karl Weick, three theoretical arguments rationalize and validate the concept of a *no blame* approach: *mindfulness*, *continuous organizational change* and the idea of *organizations as scientific communities with self interests*. Although the three arguments are undoubtedly intertwined, we firstly will present them one by one, in order to elicit their

peculiar features. Later, we will recognize and discuss their common matrix, arguing that the latter contributions can represent a more comprehensive framework that ultimately supports the *no blame* approach as a cognitive strategy of organizations.

Mindfulness

In different works devoted to HROs (Weick & Roberts, 1993; Weick &Sutcliffe, 2001), Weick discussed to notion of mindfulness in organizations, defining it as

"*The combination of ongoing scrutiny of existing expectations, continuous refinement and differentiation of expectations based on newer experiences, willingness and capabilities to invent new expectations that make sense of unprecedented events, a more nuanced appreciation of context and ways to deal with it, and identifications of new dimensions of context that improve foresight and current functioning* (Weick & Sutcliffe, 2001: 42)".

Mindfulness is conceived as necessary for the effectiveness of organizations facing highly dynamics environments. In these contributions, HROs constitute the main reference setting, as they are the organizations which have developed the highest level of mindfulness.

The achievement of mindfulness at organizational level enable organizations to '*complicate, rather than simplify their process of attention*' (Weick & Sutcliffe, 2001: 9) and, thus, to manage safely and promptly unpredictable complexities. A core aspect is the avoidance of a narrow set of expectations which limit the scope of individual attention, in accordance with part of the cognitive psychology literature (Tversky & Kahneman, 1974).

The elements through which mindfulness is constructed are different, including structural and cultural elements, such as the development of heedful interrelating among operators (Weick & Roberts, 1993). For our purposes, we need to highlight that the authors

acknowledge that, if one side the development of mindfulness is the central purpose of an organization, on the other hand it is crucial not to hide the existence and the possibility of mistakes. High reliability organizations are not error free. They organize as to admit the possibility that errors are impossible to prevent but necessary to manage (Weick & Sutcliffe, 2001). In these organizations, where 'real' errors are unbearable, any smallest failure is a window on the system. Therefore, the recognition and discussion of errors and near misses is necessary to construct a complex representation of the environment, which enlarges the set of expectation of operators. A *no blame* approach is seen as necessary to sustain errors attentiveness and recognition, as well as to fuel the complex representation of the environment which allows managing unexpected events.

In this line of thought, the choice not to blame the operator is not explicitly discussed from a theoretical standpoint, but rather taken as a motivational assumption, its evidence deriving from the ongoing practices in airline operators and nuclear powers. This is coherent with the overall logic of collaboration in HROs, where operators interact closely. In these organizations, it is recognized that only front-line operators possess full representation of reality, and that their collaboration is a necessary condition in order to develop the best possible representation of potentially harmful situations. Weick, together with Roberts (Weick & Roberts, 1993) and Sutcliffe (Weick & Sutcliffe, 2001), illustrated how the presence of insider experts and the recognition of experience are crucial elements of a HRO.

Continuous organizational change

In a number of other contributions, Karl Weick investigated and discussed the issue of learning (among others: Weick, 1991; Weick, 1995; Weick & Quinn, 1999). The main idea linking these works is that the traditional linear model of episodic change, characterized by the sequence of "unfreeze, change, refreeze" (Lewin, 1951), coupled with the fundamental

role of inertia and of intentional intervention, does not fully account for the patterns of organizational change and learning. By recognizing the relevance of ongoing action and improvisation in organizations (Weick, 1995) and evaluating theoretical and empirical contributions describing non linear and unplanned patterns of organizational change (Porras & Silver, 1991; Marshak, 1993; Crossan, Lane, White & Klus, 1996; Orlikowski, 1996; Brown & Eisenhardt, 1997; Moorman & Miner, 1998), Weick and Quinn (1999) discuss the additional paradigm of *continuous change*. Continuous change is conceived as an on going, evolving and cumulative phenomenon based on the different sequence of "*freeze, rebalance, unfreeze*" (Weick & Quinn, 1999: 379). This sequence builds on the assumption that organizational learning consists of the development of knowledge linking actions and outcomes (Weick, 1991) and that the portfolio of routines and their reframing *'is the site for learning'* (Weick, 1991: 117). The reframing process sustains the "*freeze, rebalance, unfreeze*" sequence of continuous change (Weick & Quinn, 1999: 379-380):

"*Freeze is to make sequence visible and to show patterns in what is happening, […] to capture sequences by means of cognitive maps, schemas, or war stories […]. To rebalance is to re-interpret, re-label and re-sequence the patterns so that they unfold with fewer blockages. To rebalance is to reframe issues as opportunities, reinterpret history using appreciative inquiry […]. Finally, to unfreeze after rebalancing is to resume improvisation, translation and learning in ways that are more mindful of sequences, more resilient to anomalies and more flexible in their execution*".

According to this paradigm, thus, learning is achieved through a series of small changes in an ongoing and incessant process of updating the organization response repertoire. Here, we believe, it is possible to derive another rationale for *no blame* practices, in that attention to operations reveals the recognition of a set of organizational repertoires, which are attentively

monitored ("*preoccupation with failures*") so that every small error or near miss leads to discussing the connection of action and outcomes, as well as to the continuous enactment of remedies. *No blame* practices, therefore, help significantly sustain the sequence of "*freeze, rebalance, unfreeze*".

Organizations as scientific communities with self interest

In 1979, Karl Weick discussed the relationships between business organization and scientific communities, providing a third element on which to build a theoretical framework for a *no blame* approach (Weick, 1979: 42). In his paper, which provides a cognitive description of organizations, Weick theorizes that an organization is a "*body of thoughts*" (Weick, 1979: 42), endowed with epistemological processes to acquire knowledge about its surroundings. Knowledge and the environment are constructed by participants' interactions. Under this representation, the '*collective omniscience of the organization*' becomes the main the object of interest for its description (Weick, 1979: 43), in a way similar to the one of scientific communities (Betz, 1971; Ravetz, 1971), where the advancement of knowledge is the main objective of the community. In the same perspective, Weick distinguishes organizations from scientific communities by discussing the notion of "self interest", meaning that private organizations "*have usually a personal stake in the thoughts they accumulate and transmit*' (Weick, 1979: 43)".

As subsequently stated by Anna Grandori (1984), the metaphor of scientific communities allows to represent decision making processes of business organizations with the same heuristic rules of scientific research. Consequently, the logic of falsification is regarded as the main engine for the advancement of knowledge (Lakatos, 1999; Popper, 2001). The falsification of an existing hypothesis is then valuable to the growth of knowledge as it permits to discard the validity of existing hypotheses and to develop new ones (Grandori,

1984). Accordingly, actual *no blame* practices find their theoretical justification in the decision making realm, as a necessary tool to advance the collective knowledge of the organizations. As the falsification of hypotheses (current routines) is crucial to advance this knowledge, then, the organization should search for all those events that stimulate enhancements. Therefore, HROs, the main objective of which lies in the reliability of activities and actions, activate *no blame* practices as a medium to investigate the environment. Relationships between the extreme relevance of reliability and *no blame* are, thus, reinforced. This enables us to solve the initial paradox: since errors (which may hide a lack of knowledge about the overall system) are most harmful for these organizations, it becomes crucial to strengthen the logic of learning trough falsification, which is activated on small errors and near misses by *no blame* practices. This consideration acquires growing validity and robustness in dynamic environments which are too complex to allow for a complete modelling.

As mentioned above, Weick (1979) argues that self interest constitutes a difference between business organizations and scientific communities. Self interest may also distinguish between HROs and traditional business organizations. HROs obviously have private stakes in their learning processes (e.g. economic performance is crucial also in aircraft carriers or nuclear plants). However, they are also typically bound to pursue the public interest of safety, which derives from the public consequences and externalities of their action. In this sense, HROs have a common and superior objective, shared across all members of organization, which guides and bounds the evolution of knowledge. The same characteristic may be more difficult to recall in organizations different from HROs.

Commentary: *No blame* as a form of epistemic rationality

The three lines of thoughts share an underlying consistency, as they express the evolution of the ideas of Karl Weick and of his associates, collaborators, followers. However, Karl Weick has not explicitly discussed the relationships between them, while we would like to cover this point in order to delineate the theoretical foundations of a *no blame* approach.

From a descriptive perspective, we hold that these three concepts, and relative practices are complementary, i.e. the application of one set raises the value of the application of practices in another set (Milgrom & Roberts, 1990; Ichniowski, Shaw & Prennushi, 1997):

- These three practices share the main goal of the development of knowledge and, more precisely, knowledge about the causal links between actions and outcomes. The main concern is the challenge of actual knowledge, so that expectations (on which routines are based) are regarded as hypotheses waiting to be tested (Weick & Sutcliffe, 2001). Then, even if the parallel with scientific communities is drawn only in the 1979 contribution, this view seems to underlie successive arguments as well.

- These three practices are not designed to simplify the world, but to complicate it. Weick conceives a successful organization as an entity that continuously questions and tests the outside environment. The conclusion of the 1979 contribution (Weick, 1979) openly encourages the analysis of organizational practices that allow for the complication of reality. The underlying assumption is that the ability to set up and maintain these "complexity-enhancing" practices explains more of successful organizations, if compared to practices that economize on information processing. In 2001, Weick restated this notion, by stating that "*a mindful variety is useful to assure stable high performance*" (Weick & Sutcliffe, 2001). There is a manifest link, thus, in Weick's conception, between the existence of "complexity enhancing" practices and firms operative performance.

- Weick does not deny the utility of organizational routines and schemata. However, differently from an information-processing view of organizations, in which routines are used to economize on the representation of the environment and represent a plan and a set for action (March & Simon, 1958), Weick conceives them as a source of improvisation and enactment. Organizational routines provide the basis for rationalization, acting as a repository for the existing knowledge that links action and outcomes, yet they are not meant to constrain the action of actors.

Moving from a descriptive perspective to an interpretative one, the notion of organizations as scientific communities rises to a higher level of abstraction and ultimately provides the rationale for a theory of the *no blame* organization. Looking at an organization as an epistemic actor, it is possible to align the two previous elements, exploiting a cognitive perspective of organizations (Grandori, 1984, 2004). Rules and norms display cognitive reduction properties (Grandori, 1997), resulting in economies of bounded rationality to face ambiguity and uncertainty in dynamic environments. In the case of HROs, the focus is on the development of useful knowledge, out of weak signals, in an environment so complex and ambiguous that does not allow for fixed rules of behaviour. The problem of knowledge development, thus, is solved by exploiting the small signals deriving from near misses and incidents, which are socialized and rationalized in the organization. By relying on *no blame* practices, therefore, HROs display a form of epistemic rationality (Grandori, 2004), i.e. they enact an epistemic model of rational discovery and problem modelling in front of ambiguous and uncertain environments. The movement towards knowledge development, via falsification, provides the more general framework. Mindfulness and continuous learning are two vicarious mechanisms that support the effort of knowledge development. A *no blame* approach helps organizations deal with systematic distortions in their learning processes due

to attribution biases and knowledge stagnation among different units. By changing their approach to problematic situations and errors, organizations might subvert their tendency to look for reassuring evidence rather than falsification (Grandori, 1984), their inclination to look for a major, single cause rather than for interdependencies among events (Carroll, 1998), their temptation to search for explanations in proximity and similarity rather than for remote, structural causes.

5. DISCUSSION: TRAITS AND DARK SIDE OF THE *NO BLAME* ORGANIZATION

As stated in the introduction, our aim is to delineate the traits of what we label as the "*no blame* organization", in order to move from a purely descriptive approach towards an organizational design perspective. Approaching this endeavour, it is relevant to address different levels of analysis, by discussing both the elements of organizational design and of performance appraisals. In this section we first present the organizational design characteristics derived from the previous two sections. We then sketch a simple model that shows the performance gains enabled by a *no blame* approach. Finally, we consider the obstacles to adopting a *no blame* approach.

Organizational traits

In section 2, we described the *no blame* approach as composed of three prominent elements: reporting culture, debriefing processes and narrative enactment. Here, using an organizational design perspective, we theorize on the organizational traits that support the *no blame* approach. We contend that from an organizational design perspective this is an

expressive concept, supported by the following organizational traits. We find that organizational literature considers that similar organizational arrangements (lack of segmentation between activities, few hierarchical levels, distributed and open decision structure) are shared by all organizations oriented toward learning (Burns & Stalker, 1961; Cohen, March & Olsen, 1972; Volberda, 1999). The elements that we consider as typological for a *no blame* organization are the following:

- *Loose hierarchy with specialization*[3]. *No blame* organizations recognize that repeated experience with different problems provides the necessary repertoire to deal mindfully with new events. Therefore, they value the experience of "old" operators and turn to them when investigating novel issues (though this does not imply formal hierarchical control). Experienced operators, on their turn, are trained to recognize the incessant complexity of a system. They are conscious of its continuous complexity and ready to experiment novel solutions, and do not always pretend to apply the "good old way out" to new problems. Therefore, in a *no blame* organization, formal hierarchy is present but it is loose enough to shift operative responsibility on specific issues. In other words, people with expertise on peculiar dimensions take operational decisions, while organizational superiors rarely interfere. An example of this is in the existence of bronze, silver and golden rules, as discussed by Flinn (1996) and Weick and Sutcliffe (2001), when managers distinguish different operational spaces (operative, tactical and strategic), allocating and delegating responsibilities accordingly[4].

- *Commitment to resilience*: actors working in a *no blame* organization do not assume their behaviour to be error-free, being aware of the impossibility to foresee everything. They are trained to recognize that errors and near misses do occur in their daily

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[3] Weick and Sutcliffe (2001: 74) use this expression to describe the organizational structure of HROs.
[4] For example, the modification and improvement of operative procedures may be more effectively proposed by operative personnel, rather than by administrative units. As an instance of this principle, operators should have the opportunity to participate in the investigation and resolution of errors they have reported.

activities. From an operative point of view, the practices of a *no blame* organization enable individuals to recognize and to be constantly aware of the level of operational complexity. Examples can be found in the design of operative procedures (e.g. by admitting that the operator can act between certain boundaries instead of believing that the operator should stick to a best solution).

- *Skills variety*: variety across the skills of people and differentiated paths of experiences within the organization are necessary to fuel different interpretations of signals, to foresee possible unexpected consequences, and to strengthen the opportunity of learning. By exploiting this characteristic, a *no blame* organization renders it possible to develop and share an extended repertoire of histories and cases during debriefings. However, this variety must be balanced with an effective system of socialization of everyday operation activities, in order to allow for a degree of common understanding and language sharing across different individuals. In air traffic control units, this is achieved by training all the personnel on different tasks, so that everyone has an understanding of the activities and of the problems of colleagues.

A model of *no blame* performance

We hold that a performance justification of the *no blame* approach is crucial for a comprehensive discussion. Does a *no blame* approach provide any benefit to the operative performance of firms? How? These questions are worth a deep an analysis and we have explicitly investigated them through a simulation model in a separate paper (*authors omitted*, 2004). As a contribution to the present theoretical discussion, though, in this section we address the main consideration by sketching an intuitive model of the impact of *no blame* practices on operational performance.

No blame practices enable the full compliance of the flow of information among individuals which follows the occurrence of an error or of a near miss (for example, when it is necessary to investigate the causes and to find the remedies that could prevent similar errors from occurring again in the future). In other words, we assume that *without* a *no blame* approach the actors would hide some information (if they believe that information would lead the system to blame them) necessary to the prevention of future errors. The main assumptions of our model are two. First, information flow is directly related with the effectiveness of the process, which is highly complex and needs to be stabilized around given parameters. Second, a blaming approach blocks this information flow, while a *no blame* approach does not. We model our situation as a feedback control system. When considering a simulation approach that model organizations as complex computational systems, we relate to a well recognized tradition of organization studies (March, 1991; Gavetti & Levinthal, 2000). The model works as follows. If the information is entirely collected in the feedback loop, then the process is effective, i.e. it reaches asymptotical stability. A deviation from this stability harms the operational effectiveness of the problem and eventually compromises the entire process. In this context, a blockage in the information flow (i.e. because of the fear to be blamed) reduces the overall performance of the system. It can be shown (*Authors omitted*, 2004) that when the feedback loop is distributed over different actors, a minimal inefficiency in the flow of information is sufficient to determine system instability. This issue becomes more and more relevant the higher is the complexity of the systems (Perrow, 1984).

No blame benefits with respect to operative performance can thus be modelled in a superior sensibility to small harmful signals, which are intercepted (and possibly solved) before that they result in a bigger damage of the system.

Costs and barriers of a *no blame* approach

From a theoretical standpoint, organizational benefits associated with a *no blame* approach might appear as naturally cogent and logically driven. Unfortunately, the implementation of a similar knowledge-diffusion model is not straightforward. Its harmonious adoption is potentially hampered by a variety of organizational and environmental obstacles. Besides design and implementation purposes, awareness of such limiting factors is crucial in order to understand if, and how, a *no blame* approach is a valuable means of organizational learning for all organizations, as opposed to HROs only. At present, this question remains open, as it is not clear whether the implementation of a *no blame* system could imply a substantial investment in redundancy (Roberts, 1990). In this case, organizations would face a trade-off between the costs (in terms of financial, human and temporal resources) of adopting such a system and the benefits (in terms of learning and performance) it would carry. Nonetheless, recent contributions advocate that all organizations would benefit from adopting a proactive view towards error detection and a shared understanding of corrective actions (Weick & Sutcliffe, 2001). According to this view, "*[...] neither the sausage maker nor the chemical-plant manager is immune from errors that can have far-reaching consequences*" (Roberts & Bea, 2001). To our best knowledge, no contribution has tried to empirically measure the impact of a *no blame* approach on organizations other than high-reliability firms.

Here we try to outline the barriers that might hamper the implementation of a *no blame* system. These include firm-related restraints, which apply at the organizational level, and environmental barriers, which refer to cultural and regulatory issues of individual countries. Some of these factors are consistent with previous findings on motivational prerequisites and organizational barriers to learning (Sutcliffe, 2001), others appear as peculiar to our research framework. As one of the managers we interviewed told us, "*[...] unfortunately, valid and reliable knowledge doesn't come for free*".

Competitive pressures on economic and temporal issues

Short–run emphasis on costs efficiency and lead time containment, albeit operationally effective, might hamper the adoption of a *no blame* approach, which requires additional investments not immediately related with key productive activities and operations (Roberts, 1990). Together with rethinking aspects of its culture, an organization willing to implement a *no blame* system should engage in an investigation of its operational, communication and control procedures, in order to identify areas of improvement. Under competitive and temporal pressures, thus, organizations might choose to ignore warnings that would imply a slow-down or a revision of core activities. Increasing the ability to explore, to process and to evaluate significant information may lead to a decrease in the speed at which a correct interpretation is achieved and established (March *et al*., 1991). Under such conditions, organizational errors may be regarded as "profitable" for organizations to commit (Singer, 1978) and may, accordingly, be tolerated.

Cognitive costs: the dilemma of learning

Emphasis on economic matters leads to a discussion on the costs of investigating an organization's inner dynamics, in order to assess and redesign better processes. In other words, how much does it cost to hold back and reflect? An illustrative example from Einhorn & Hogarth (1981: 38) may help outline the discussion on the opportunity-cost of investing in learning in order to verify or falsify current assumptions and beliefs:

"[…] *consider a waiter in a busy restaurant who believes he can predict those customers most likely to leave generous tips; the quality of his service reflects this prediction. If the quality of the service has a treatment effect on the size of the trip, the outcomes confirm the prediction. With awareness of the task structure, the waiter could perform an experiment*

to disentangle the treatment effects of quality of service from his predictions; that is, he could give poor service to some of those judged to leave good tips and good service to some of those judged to leave poor tips. Note that the waiter must be willing to risk the possible loss of income if his judgement is accurate, against learning that his judgement is poor. Therefore, there is conflict between short-run strategies for action that result in reasonably good outcomes versus long-run strategies for learning that have potential short-run costs. That is, would you be willing to risk loss of income by doing a real experiment in order to learn?".

The situation depicts a potential dilemma of learning, or a trade-off between the rewards of investing in learning and the costs of experimenting. In case these costs are viewed as disproportionate, an individual or an organization may simply decide not to learn. However, as the environment grows evermore uncertain and equilibria states become unstable, organizations face the issue of improving their ability to research, to improve and to explore radically novel courses of action, rather than comparing known alternatives. This makes investments in research comparatively more attractive, if not necessary.

Cultural Restraints

Knowledge is subject to segregation and, eventually, stagnation, for a wide array of reasons. Organizational culture is among the more important causes as it translates into the way division of labour, specialization and hierarchy is defined (Vaughan, 1996). Different obstacles pertain to cultural aspects. Many organizations prove to be extremely rigid and hierarchical, with the consequence that communication flows downward only. Other organizations lack what we define as a "culture of risk", or the awareness of the potential fallibility of every system. This results in a passive, fatalist or punitive and inquisitorial attitude towards errors, instead of engaging in active risk-seeking activities (Weick &

Sutcliffe, 2001). In other situations, employees do not report individual errors because they fear that these would be perceived as instances of individual weakness or fault, and that would be actually blamed on them. Moreover, further obstacles emerge as "unidirectional corrective loops", or situations in which operators reporting errors are not involved in the subsequent definition of corrective actions and solutions. Together with losing potentially valuable suggestions, this situation affects individual willingness to signal further errors.

Finally, many organizational settings are dominated by "*do it first, fix it later*" strategies to approaching problems. In this situations, a down side of empowerment practices results in the fact that front-line operators – those agents more often exposed to dangerous situations, or the organization's sensors – are entailed to solve problems on their own, without disturbing managers or superiors (Tucker and Edmondson, 2003). This leads to an absence in communication that prevents organizational learning, as the same situation might happen again to other individuals unprepared to solve it. As one of the managers we interviewed put it:

"*Most problems tend to discourage operators, who individually endeavour to clear out challenging situations. There is a widespread tendency to fix errors as soon as they become evident, hardly ever involving the upper levels of the organization or different departments. This occurs for two reasons. First, there is a clear difficulty to recognize external causes, or those events that originate in activities operators are not accountable for. Consequently, solutions are searched for locally, within known boundaries, losing sight of the interaction and complexities of the entire system. Second, errors are universally regarded as personal defeats, as individual fallacies or lapses. Operators fear them and become easily discouraged if they manifest themselves publicly, thereby avoiding to involving or to communicate with colleagues. This is a down side of the ability to take responsibility for one's actions and outcomes, which results in a distorted personification of individual mistakes*".

Regulatory constraints

Consistently with some theoretical contributions (Tamuz, 1988; Morris & Moore, 2000), we found that the understanding of critical situations is hampered by legal constraints which impede relevant, yet self-interested, interpretations. Spontaneous reporting and discussion of individual information and experiences is either significantly reduced or subject to biases, omissions and distortions. Legal accountability can trigger information processing strategies of "*defensive bolstering*", which is the tendency to avoid complex or self-critical thoughts (Morris & Moore, 2000: 742). In addition to that, accountability leads to blame-deflecting strategies that occur via the filtering and manipulation of information communicated within the organization (O'Reilly & Roberts, 1974). In many countries, finally, most high reliability organizations face a legal system in which human errors are subject to criminal liability. Under this legal regime, individuals are often refrained from signalling errors as they fear to be criminally persecuted. Thus, many potentially dangerous situations remain latent. This triggers a dangerous paradoxical problem, as those organizations that have a pressing need to learn from errors or near misses are impeded to do so by the legal systems. Moreover, this forces these organizations to over-invest in control and safety systems, multiplying financial and human resources beyond necessary. Finally, as stated by Vaughan (1999: 287), "*employees and organizations devote enormous resources to prevent incidents of routine non conformity from being publicly defined as mistakes. [...] The social organization of clean-up work also has social costs that eventually are paid by the public*". By shifting blame from organizations to individual operators, institutions preserve their social and public legitimacy.

6. CONCLUSIONS

In this paper, we have proposed a *no blame* approach to learning from errors which, in our view, might encourage and facilitate the communication, transmission and sharing of knowledge within the organization. In an attempt to illustrate our approach, we have firstly assessed the role of Karl Weick's contributions in constructing and designing our theoretical framework and argumentations. By looking back at different theoretical approaches, such as the notion of mindfulness, the theory of continuous learning, and the notion of organizations as communities of practices, we have been able to solve the initial paradox and to endow *no blame* practices with stronger theoretical foundations. We have argued that the *no blame* approach represents an instance of epistemic rationality, in which organizations rationally look for a way to structure their actions in highly ambiguous and complex environments.

Building on that, we have explored the organizational traits of a *no blame* approach and shown a direction for the appraisal of *no blame* contributions to operative performance. The discussion of the dark side of this approach has been necessary to critically assess its difficulties in implementation.

In conclusion, we maintain that a *no blame* approach is a valuable means towards "*designing an organization for variability*" (Weick, 2003: 94), in order to grasp the nuances of complexity, instead of the patterns of uniformity and standardization. Following this, a *no blame* view could help unlock schemata-reinforcing processes that ignore disconfirming evidence and subvert the over-simplification of thinking practices (Weick, 1979). Organizations would be less exposed to s "*root cause seduction*" trap, or the assumption that one single cause satisfies all problem-solving activities (Carroll, 1998). Firms often restrain employees from engaging in an exploration of multiple causes and chain of events, as the awareness of causal interdependencies might lead to a discomforting feeling of architectural

complexity. On a cultural level, this approach is translated into "*do it first, fix it later*" guidelines.

We hold that the main limitation of our study lies in its preliminary stage. Future contributions would benefit from quantitatively addressing a series of issues and research questions. Some of these refer to the organizational antecedents that would favour a correct implementation of a *no blame* system. Others refer to its potential consequence on organizational dynamics. Dimensions such as organizational identity, styles of leadership, openness to upward and downward communication, trust relationships, governance structures, and dynamics of power distribution might determine the success or failure of a *no blame* system. At present, it is yet not clear how. Moreover, research should assess if, and how, a *no blame* approach can be regarded as an intangible asset driving a firm's overall value.

However, we hold that the explicit recognition of *no blame* practices, and of their linkages with environments of higher learning intensity and reliability, provides a contribution for the appraisal of organizations in the XXI century. A *no blame* approach embodies the potential of unlocking the organizational knowledge that resides within the interactions and interdependencies among individuals, units and functions, which are regarded as valuable repositories of information (Carroll, 1998; Ramanujam, 2003). A *no blame* approach may assist organizations in learning from rare events, by widening and enriching the capabilities to grasp the rewards of single – yet exceedingly valuable – experiences. Unique events would not immediately be dismissed as irrelevant because they represent a "sampling variation within existing theories" (March *et al.*, 1991). By expanding their ability to capture, process and communicate significant information, organizations would both strengthen their capability to produce knowledge that is both "valid" and "reliable" (March *et al.*, 1991). According to this view, valid knowledge is generated when conditions of scientific exploration and evaluation are employed, and cognitive, retention and learning distortions are

isolated. On the other hand, knowledge is significant if it is reliable, meaning that it must be held as meaningful, explicit and shared, among organizational actors and units.

A *no blame* system relies on assumptions of distributed cognition. Accordingly, this approach could be regarded as a means of making entrenched knowledge available to other levels within the organization, thereby projecting locally-available information into globally-shared guidelines and working practices. We believe that the ability to process and communicate information translates into an intangible asset that can drive an increase in a firm's ability to generate value.

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