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Safety culture and power dynamics in organizations

Cultura de segurança e relações de poder nas organizações

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Abstract

The Safety Culture (SC) concept is widely used in industry and scientific literature, encompassing meanings ranging from fatalistic approaches to integrated ones. Even in the more advanced approaches, fundamental questions often remain on the surface: How work conflicts and contradictions are addressed? What is the limit for safely disobeying a rule? What is the influence of power and domination relationships on the development of this culture? Ignoring these questions means overlooking the main element for understanding the subject, namely, the determinants of practices and values developed by individuals and social groups. This essay seeks to delve into the nuances present in SC, placing power dynamics in organizations at the center of the reflection. The questioning is built from an interdisciplinary perspective, mobilizing not only specific theoretical references about work human activity and safety management within current organizations but also classical references in the fields of philosophy, sociology, and psychology. We conclude by highlighting the need to bring the experience of everyday situations into the heart of the organization by reclaiming individuals' voices with punishment-free spaces and expanding the autonomy of individuals involved in the frontlines of processes.

Keywords: organizational culture; power; autonomy; risk management; occupational health.

Resumo

O conceito de Cultura de Segurança (CS) é amplamente utilizado na indústria e literatura científica, ganhando significados que vão de abordagens fatalistas até as integradas. Mesmo naquelas mais avançadas, questões de fundo permanecem na superficialidade: como os conflitos e contradições do trabalho são tratados? Qual o limite para desobedecer a uma regra com segurança? Qual a influência das relações de poder e dominação entre os indivíduos no desenvolvimento da cultura? Ignorar essas questões é deixar de lado o principal elemento na compreensão do tema, qual seja, os determinantes das práticas e valores desenvolvidos pelos indivíduos e grupos sociais. Este ensaio busca discorrer sobre as nuances presentes na CS, trazendo para o centro da reflexão as relações de poder presentes nas organizações. A problematização está construída sob uma perspectiva interdisciplinar, mobilizando não somente referências teóricas específicas acerca da atividade humana no trabalho e da gestão da segurança nas organizações atuais, como também referências clássicas no campo da filosofia, sociologia e psicologia. Concluímos mostrando a necessidade de trazer a experiência das situações cotidianas para o seio da organização, retomar a palavra dos sujeitos por meio de espaços livres de punição e ampliar a autonomia dos indivíduos presentes na ponta dos processos.

Palavras-chave: cultura organizacional; poder; autonomia; gestão de riscos; saúde do trabalhador.

Introduction

The term "safety culture"" first appeared in 1986 as part of the analysis of the Chernobyl nuclear power plant accident, conducted by the International Atomic Energy Agency. The final report of the accident states that the formal procedures developed by the plant should be "complemented by the creation and maintenance of a 'nuclear safety culture"[1] (p. 9). Prior to this, in 1979, the Nuclear Regulatory Commission of the United States had already recognized the contribution of organizational factors to the Three Mile Island nuclear power plant accident, stating that the main deficiencies in reactor safety at the time were not hardware problems but "management issues"[2] (p. 89).

After these events, the concept of Safety Culture (SC) began to be widely used in industry and scientific literature, being understood as a set of values and behaviors related to safety shared among members of an organization[3]. This approach is based on the studies of Schein[4], who defines organizational culture as "a pattern of shared basic assumptions [...] to be taught to new members as the correct way to perceive, think, and feel about these problems"[3] (p. 12). The safety management field adopted this concept and advocated SC as the product of the integration of norms, values, and practices specifically in the field of safety, developed in different sectors such as the nuclear industry, the chemical industry, civil aviation, and patient safety[5].

It is possible to perceive that the concept of SC has evolved throughout history. Nevertheless, even in more advanced approaches that consider the need for integration between management and operation, fundamental issues remain superficial or are completely forgotten. Amid the justifiable need for the articulation of norms and practices, how are work contradictions addressed? What is the limit for safely disobeying a rule? What is the influence of power and domination relationships in the development of this culture? Ignoring these questions means overlooking what may be the key element in understanding the subject, which are the determinants of practices and values developed by individuals and social groups.

With this in mind, this essay seeks to discuss the nuances present in the concept of SC, bringing the power dynamics within organizations to the forefront of the reflection. We begin with a brief history of the SC types developed throughout history, citing examples that illustrate the theory (topic 2). Next, we discuss the relationship between conflicts, rules, and the punitive logic regarding errors and rule violations (topic 3). Following that, we specifically address forms of power and domination in the workplace (topic 4). Finally, we reflect on the prospects to advance safety construction, which is primarily based on valuing experience and reclaiming individual autonomy (topic 5).

The questioning of the theme will be constructed from an interdisciplinary perspective, mobilizing not only specific theoretical references concerning human activity in the workplace and safety management in organizations (such as F. Daniellou, J. Reason, or S. Dekker) but also classic references from philosophy, sociology, and psychology (such as E. Durkheim, T. Hobbes, J. Piaget, or S. Lukes), which provide the necessary background to understand the theories and practices developed in the field of safety and their relationships with power dynamics and contemporary work.

Types of Safety Culture

The dynamics involved in SC creation, maintenance, or modification fundamentally depend on the degree of engagement of leaders and workers in safety-promoting proposals and practices[5]. As a result of these relationships, four types of SC may emerge: fatalistic, occupational, managerial, and integrated. (**Figure 1**).

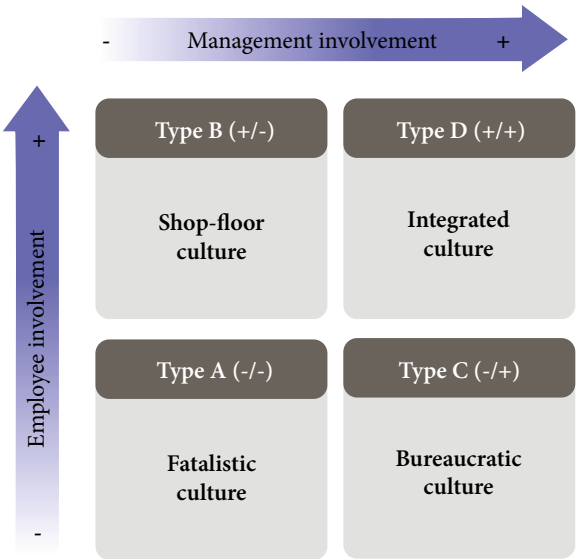

Figure 1 Types of Safety Culture

Source: adapted from Daniellou, Simard, Boissières, 2010[5]

In a Fatalistic Culture, both workers and leaders exhibit minimal involvement, and accidents are regarded as stochastic outcomes. Consequently, workers who become victims of severe accidents often attribute them to sheer luck. While this cultural archetype persisted in the Western context until the 17th century, contemporary manifestations can still be discerned, especially in domains such as agriculture, construction, road traffic accidents, and certain industrial sectors. Rural laborers in Uruguay, for instance, frequently ascribe accidents to fate[6]. Similarly, the 33 miners who were trapped in a Chilean mine for two months considered themselves fortunate and regularly expressed gratitude to a divine entity for their survival[7].

A Craft-Based Culture is characterized by diminished leadership involvement and heightened participation of workers in safety production. Historically, this culture predominated in the Western world during both industrial and pre-industrial epochs, relying on informal worker practices to forestall accidents. Historical records indicate that 17th-century miners used to bring canaries into subterranean mines to serve as early indicators, such as the demise of these avian sentinels, of potential flammable gas leaks. In artisanal fishing, safety responsibilities rest primarily with fishermen and sailors themselves[8]. The construction industry similarly embodies a significant degree of informality, with limited managerial engagement in authentic safety[9].

A Managerial Culture arises when leaders assume a predominant role in shaping safety regulations, while the involvement of performers mostly extends to complying with directives. This form of culture, prevalent in contemporary contexts, originated in the late 19th century and disseminated globally, coinciding with the advent of international certification requirements. Within this framework, there is a tendency to undervalue the accrued wisdom of the craft-based culture, hindering the cultivation of trust between workers and managers[10]. An example is the attempt of a Uruguayan paper industry to regulate risks through an escalation of safety standards and procedures, which proved unsuccessful[11]. Similarly, during the 1998 Swissair Flight 111 crash, despite the flight crew adhering to firefighting procedures, the fire continued to spread, resulting in the fatalities of all 229 individuals on board. In this case, following the procedure turned out to be the problem rather than the solution, and this tragedy sparked new research into the use of checklists and procedures[12].

The intricacy of sociotechnical systems has engendered the realization that it is imperative to harmonize management and operational knowledge in the pursuit of safety, thereby defining the Integrated Safety Culture domain. Several contemporary examples illustrate this paradigm. In an endeavor to integrate ground personnel (e.g., control room operators, counter attendants, baggage handlers, among others) into safety management, CRM (Corporate Resource Management) evolved from exclusively involving pilots in the cockpit to subsequently encompassing the

entire flight crew, and ultimately, ground personnel[d]. Consequently, the nomenclature transitioned from Cockpit Resource Management to Crew Resource Management and, ultimately, Corporate Resource Management[13]. Similarly, in a French electricity distribution company, Rocha et al.[14] devised an organizational apparatus facilitating the alignment of real-life situations with the management system.

Notwithstanding the advancements represented by the Integrated Safety Culture concept in relation to its counterparts, as it includes workers' participation in the managerial formulation of safety rules and practices, fundamental issues remain underexplored: How do power dynamics among individuals or groups operate when they are capable of facilitating and hindering safety practices and values? How are domination relations constructed in the processes of establishing rules and defining penalties for "disobedience"? The Integrated Safety Culture approach addresses these questions minimally, as it emphasizes consensus and convergence while overlooking the determinants of conflicts, contradictions, and ambiguities. We will delve deeper into this reflection in the following sections.

Conflicts, rules, and the punitive logic

The role of conflict and the perspective of differentiation in organizational culture

Organizations can be understood as instruments of collective decision and action, in which individuals can act and learn from the conflict between formal and informal rules, or between imagined and real situations[15]. Contemporary logic, however, seeks the opposite of this. Since the 1990s, Westrum[16] has argued that mainstreaming excessively emphasizes consensus and excludes ambiguity in the study of culture. The dominant discourse values those who bring up solutions, not problems[17], while encouraging competition for resources between groups in order to produce results without significant questioning. Consequently, organizational silence develops in contemporary organizations—in which operational workers are discouraged from discussing field problems, and managers prefer not to be aware of them—accompanied by the exercise of power, whether direct or subtle, by managers over their subordinates[18].

Since conflict and divergence are often discouraged by management, only a few values, beliefs, and behaviors are actually shared among groups and individuals. As a result, it is more appropriate to think of safety cultures, in the plural[19], as practices and values always refer to specific groups that operate with their own logics, rather than to uniform elements of the entire organization.

It is in this sense that classic research, such as Hofstede's[20], which still dominates the representation of many organizational culture experts, is criticized by researchers such as Alain Wisner. When analyzing IBM's policies in the 1960s, Hofstede defined four main dimensions for the cultural dynamics of a country: power distance, uncertainty avoidance, masculinity-femininity, and individualism. Industrially developed countries supposedly had low power distance, low uncertainty avoidance, strong individualism, and a dimension of masculinity-femininity divided between Anglo-American countries with a masculinity dimension (authoritarianism, a liking for money and goods, disregard for others) and Nordic countries with a femininity dimension (consequently opposite characteristics).

Wisner[21] argues that this typology falls into generalizations and "commonplaces in cultural matters" (p. 177) because, in addition to the fact that these characteristics can be combined with each other (for example, being disinterested and authoritarian at the same time, or liking goods but also caring for others), Hofstede neglects the heterogeneity of the countries studied. Thus, Wisner asks: which part of the population of South Africa was studied, Black and/or white people? In Canada, do Quebec residents have the same values as English speakers? Do the large Black and Hispanic minorities in the United States have the same culture as white Anglo-Saxon Protestants?

d This evolution was significantly influenced by the Air Ontario Flight 1363 accident, in which the aircraft crashed 49 seconds after takeoff, resulting in 21 fatalities and 44 survivors. One of the contributing factors to the accident was the excessive ice on the aircraft's wings. A surviving flight attendant later disclosed that she had identified this risk before takeoff but was reluctant to bring it to the captain's attention, fearing it might be perceived as an attempt to undermine his authority.

Disregarding differences in practices and values within social groups, whether they are industries or countries, leads us to "commonplaces" when addressing the subject or to the perpetuation of stereotypes without proper reflection. This is a perspective of differentiation within organizational culture—as opposed to the perspective of integration—since organizations are often characterized by conflict, especially in the competition for resources and in the power struggle between hierarchical groups.

The individuals' relationship with rules

When delving into the moral dimension of human development, Piaget[22] defined three major stages that every child goes through. The first is Anomie, in which the notion that actions can be valued by rules has not yet permeated the child's moral universe. As development progresses, the child adopts a stance of obedience to external rules and objective responsibility. This is the Heteronomous phase, in which rules are understood literally based on authority (the adult). Finally, in the Autonomy phase, the child is capable of demonstrating respect, cooperation, and inclusion of others, opening the possibility to question and modify rules before following them as an imperative.

Despite being a child development theory, and considering the large cognitive gap between adults and children, Piaget's theory can help us understand the relationship between individuals, rules, and safety.

The concept of Anomie had already been addressed by other disciplines. First, in Sociology, Durkheim considered it as the difficulty of adults in interpreting laws or the structure in which the world is organized[23]. Later, in the Theory of War, the concept was applied to moments when soldiers were struck with panic on the battlefield due to the perception that combat rules and strategies were altered without clear explanation[24]. Finally, in Political Philosophy, Anomie is seen as a domination strategy since the absence of clear rules generates fear in the governed, leading to more regressive thinking and simplified worldviews, allowing power and authority to be more easily transferred to a higher instance, a myth such as Thomas Hobbes' Leviathan, that could save individuals from chaos[25].

In Piaget's Heteronomy[22], the child believes that rules are immutable, originating from an external authority, and must be followed literally, out of fear of punishment. This is a common approach among adults as well, used by classical management models and by the traditional Occupational Health and Safety Engineering field. Based on the command-and-control logic, the main argument put forth is that if the worker does not obey a rule, an undesired event may occur, putting them at risk. Consequently, responsibility is entirely transferred to the worker, and the solutions presented are usually simplified into training to eliminate errors and ensure compliance with the rules. One of the most famous consulting companies representing this type of approach is Dupont, with commercial interventions such as STOP Dupont[26], which includes checklists for recording unsafe behaviors at work[27].

Finally, Autonomy recognizes that the law is always an insufficient, local, and precarious formation, and that the limits of rules are usually unclear, requiring the subject's appropriation according to their reality. This is why the field of Law makes a distinction between law and justice. Unlike the law, justice is a demand that goes far beyond the legal framework and surpasses all the objective regulations that humans are capable of producing[28].

Demanding total and unrestricted obedience to rules and procedures and ignoring the contingencies and variations of the environment is the same as subjecting workers to a heteronomous approach. In other words, it is placing an adult in the position of a child. Workers are infantilized, put in a position in which they know little, and therefore must rigorously follow what has been written by someone who is their authority and knows more than they do.

The punitive logic regarding errors and rule violations

Human error can be defined as "the condition resulting from a person's actions when there is a general agreement that the actions should have been different from what they were" (p. 151)[29]. Violations are described as "deviations from safety operational procedures, standards, or rules" (p. 72)[29].

The commonly accepted division in the field of Safety Sciences, which considers human error as involuntary and rule violations as voluntary, is controversial. James Reason, one of the pioneers of this discussion, has acknowledged that there will always be a "middle ground" or an involuntariness component in violations, whereas errors are "at least in part, voluntary actions" (p. 127)[29]. This is why Reason often uses the term "erroneous violations" when referring to violations[29].

The classification of errors is well-known in the world of work: actions made with the correct intention but incorrect execution (slip); actions made with the wrong intention regardless of their execution (mistakes); or omissions in performing actions that are known to be necessary (lapse)[29]. However, violations also have classifications worth noting. We may have the intention to violate a rule for different reasons, depending on the context: because it has become a common practice in certain situations (routine violation), because the situation is not covered by the rule (exceptional violation), because one expects to improve the outcome (optimization violation), or because following the rule could disrupt the activity (necessary or situational violation)[30].

If Reason classifies violations based on the context of the action, Bobbio et al. identify three characteristics of laws that may lead to disobedience: unjust laws, illegitimate laws produced by those without legislative authority, and illegal or unconstitutional laws[31]. Civil Disobedience Theory[32], extensively discussed in political philosophy, is based on the idea that disobedience aims to stop injustices and produce norms better suited to reality. It refers to a fundamental right of individuals to resist obeying unjust, illegitimate, or illegal rules. It is, therefore, a right to violate and "an innovative act rather than a destructive one" (p. 335)[31].

In all these cases, the intention behind the violation is to "get it right," to achieve the previously determined goal—producing safety. This is usually accomplished since violations, much like errors, often have a strong system protection component and, except when it comes to acts of sabotage, will never have "the purpose of causing injury or harm" (p. 1316)[30].

The violation of a rule is therefore often legitimate, and the problem usually lies not in the individual who seeks to produce safety in with the context or rule itself, sometimes disconnected from reality. Despite this, the heteronomous logic used by most contemporary organizational models argues that, to generate prevention, it is necessary to punish (exemplarily) individuals for their errors and violations. Their punishment is thus used as an instrument of power and domination, whether directly or ore subtly[33].

Forms of power and domination in the workplace

The concept of SC has faced criticism throughout its history and has even been abandoned by various authors. The American sociologist Charles Perrow, for example, when asked why he does not work on the notion of safety culture in his renowned book "Normal Accidents", from 1984, asserts that he "doubts its utility" and that, for him, "the main issue is power"[33]. In the same perspective, Hale[34] and Hopkins[35] argue for the abandonment of the term SC, as they do not believe it significantly contributes to the safety discussion. Antonsen also raises various questions, emphasizing that SC assessment tools do not lead to practical transformations unless decision-making managers in companies provide guarantees and resources in favor of safety[19]. Furthermore, Haavik et al.[36] argue that, more importantly than the discussion about the term itself, is a need for theoretical refinement and integration of the notion of power among approaches that work with the concept of SC.

Antonsen[33], in turn, one of the few authors who develops the notion of power in the field of safety, mobilizes the theory elaborated by Steve Lukes[37], which proposes dimensions of power linked to social relations among individuals based on their capacity to recognize, articulate, and achieve their interests.

The first power dimension refers to the ability of a political actor to impose their will on others, often explicitly and noticeably. It involves the application of organizational policies, decision-making, and the ability to influence outcomes for one's benefit. This power is easily observed and contested and is also known as manifested power. The sources of this form of power involve hierarchical positions, information concentration, expertise, resource and reward control, coercive power, alliances and relationships, charisma, and personal power.

In the second dimension of power, some interests are camouflaged or subtly inserted into decision-making processes that consider the interests of those seated at the negotiation table. It relates to the ability to shape political agenda, influence public discourse, and control access to resources and decisions. In this dimension, power operates more discreetly and indirectly, exercising control over which issues are discussed or excluded from debate, thus, it is known as hidden power. It can involve manipulating information, setting priorities, and influencing the rules of the game.

The third power dimension refers to the ability to influence individuals' perceptions, values, and beliefs, shaping their preferences and limiting their action. Here, power operates even more subtly and profoundly, impacting individuals' cognitive and normative structures. This dimension encompasses the capacity to establish hegemony and to determine what is considered acceptable within a group, and is often referred to as ideological power. As a result, the desires and wishes of individuals and groups are manipulated in a way that obscures their real interests, with political and subjective interests generated by the social structures surrounding them. This is often the most efficient form of power since it involves individuals' subjective engagement and is not perceived by those who are being dominated.

From this perspective, the ingenuity used to dominate workers involves both explicit strategies, defined by hierarchical positions, information concentration, resource and reward control, alliances, or charisma; as well as more subtle strategies, formed in negotiations and political decision-making processes or based on the manipulation of individuals' subjective engagement.

Outcome of the experience as a driving force in building safe organizations

The various forms of domination, as defined by Lukes[37], help us understand power relations and the possibilities of conflict among social groups within organizations. Nevertheless, it must be considered that a group's culture is not exclusively determined by the domination found in power relations. If this were the case, it would be possible to faithfully implement the practices and values defined by managers and reproduce a homogeneous culture throughout the organization. However, individuals with less power are not passive sources of higher determinations, and they produce their own values based on their experiences within the group. Thus, culture is produced and reproduced through daily interaction between higher authorities and real situations[38].

Therefore, studies on culture should also focus on understanding individuals' daily situations and experiences. Various organizations recognize this and seek, to a greater or lesser extent, to develop methods and devices to enable the sharing of experiences from the operational field. Training programs, the diffusion of best practices, the dissemination of accident analyses, incident reporting systems, and safety meetings (known as "daily safety dialogues" or "safety minutes") are some of the most well-known examples. The set of methods, devices, and practices aimed at learning from real experiences is referred to as Operational Experience Feedback[39] or *Retorno de Experiência* (REX, in Brazilian Portuguese)[40] and can take on quite distinct forms, objectives, and implementation methods.

In order for REX systems to be effective and fulfill their function, certain premises must be respected.

First and foremost is the need to discuss concrete work activities. Out of fear of punishment, sanctions, various forms of retaliation, or simply due to a lack of belief in any potential management response to a raised risk

situation, workers may remain silent, which makes events that cannot be concealed, such as material damage or equipment failure, the only possible forms of obtaining experience feedback[18].

However, for real work to be discussed, experience feedback spaces must be protected and free of blame, so that participants can openly discuss their own activities and conflicts between rules and reality can surface. At the same time, they must be accompanied by management interaction and feedback, aiming to develop the autonomy of participating individuals[14].

Lastly, the majority of existing REX forms in organizations are focused on exclusively retrospective systems, which are based on unwanted events with already closed outcomes (such as accidents or incidents), limiting opportunities to learn about working and safety. To transcend this logic, REX systems should primarily focus on identifying weak signals[41] and analyzing "normal" situations or concrete situations that have not yet generated problems. This shift takes organizations from retrospective to prospective systems, which have greater potential to promote learning and prevention[17].

Final remarks

The management of an organization is never politically neutral, but it tends to reflect the values and worldviews of dominant groups. Many contemporary organizations, certainly the majority of them, still choose to reinforce the Taylorist logic of command and control, which was strongly implemented in the first half of the 20th century, as well as its subsequent, often more sophisticated, forms of dominating individuals. They seek to eliminate contradictions, avoid worker participation in management processes, demand unquestioning obedience to procedures, and develop explicit and/or indirect forms of domination over their subordinates.

In contrast, a safe production system is one that values, above all, contradictions in work, participation, and the experience of individuals in risk management. Understanding the power dynamics behind interactions in the workplace is fundamental to this process. This is even more relevant in the Brazilian context, as forms of domination and power have been embedded in its historical trajectory since the Portuguese colonization of the country. There are many examples illustrating the structure of violence and punishment in Brazilian society, such as the ongoing massacre of Indigenous peoples, which has persisted since colonization; more than 350 years of slavery, which makes Brazil the last Western country to abolish the practice; the violent military dictatorship, influenced by the world's second-largest fascist party; among many other stories of massacres of peoples who never received proper reparations. In this scenario, incorporating the notion of power into the discussion of SC in Brazil becomes even more relevant.

Whether or not we continue to use the term "Safety Culture" does not seem to be the most important aspect of this discussion, as long as the perspective of power is present when addressing this topic. It is time to bring power to the center of the debate and to the negotiating table of companies, and actively seek safer and more dignified models of production and society.

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